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EXECUTIVE SUMMARY

POLICY 2520.13 CONTENT STANDARDS AND OBJECTIVES FOR TECHNICAL AND ADULT EDUCATION IN WEST VIRGINIA SCHOOLS

Background:

Policy 2520.13 defines the content standards and objectives for the programs of study for technical and adult education as required by Policy 2510 and establishes a standardized format for such. The content standards and objectives cover courses in the areas of Agricultural Education, Business Education, Diversified Cooperative Training, Family & Consumer Sciences, Health Occupations, Lodging Management, Marketing Education, Occupational Family & Consumer Science, Technical and Industrial Education, Technology Education and Travel West Virginia.

The policy was presented to the West Virginia Board of Education on April 18, 2002, as a revision to the existing Policy 2520. Those revisions were out on public comment until June 21, 2002. The policy was approved by the Board on July 11, 2002, to become effective July 1, 2003. Subsequently, due to the length of the resulting Policy 2520 and in anticipation of further additions for both academic and technical courses, the policy was split, with the content standards and objectives for technical and adult courses designated as Policy 2520.13.

Purpose:

The purpose of this Board item is to repeal Policy 2520.13 and replace it with this revised Policy 2520.13.

Summary of Revisions:

The revisions include the addition of content standards and objectives for 80 new technical courses, the revision of the content standards and objectives for one technical course, and the deletion of 19 previously approved technical courses.

The courses that are being deleted are not being deleted because the content was inappropriate. Policy 2510 now requires us to offer at least six courses in each technical concentration. In the current 2520.13, several concentrations had two to four courses. These courses have been reorganized and expanded to provide a minimum of six courses. The WVEIS system does not allow us to re-use WVEIS course code numbers when there is significant revision to a course. Therefore, these courses are being deleted and the current course code number retired. The courses formerly approved for the Oracle Academy have been changed because the Academy has now revised their curriculum.

The revisions are:

Under Agriculture & Agribusiness

Add:

- 0151 FOOD SCIENCE & PROCESSING II
- 0152 ENVIRONMENTAL TECHNOLOGY II
- 0153 AGRICULTURAL ENVIRONMENTAL SCIENCE

Under Diversified Cooperative Training

Add:

- 0513 DCT WORK EXPERIENCE I
- 0514 DCT WORK EXPERIENCE II

Under Lodging Management

Delete: 1201 and 1202

Add:

- 1203 LODGING MANAGEMENT IA
- 1204 LODGING MANAGEMENT IB
- 1205 LODGING MANAGEMENT IIA

1206 LODGING MANAGEMENT IIB

Under Dental Assisting

Delete: 0701 and 0702

Add:

0744 DENTAL ASSISTANT GENERAL STUDIES
0741 DENTAL ASSISTANT BIOMEDICAL SCIENCE
0746 DENTAL SCIENCE
0743 DENTAL ASSISTANT CLINICAL SCIENCE
0742 DENTAL ASSISTANT CLINICAL PRACTICE
0749 SUPERVISED DENTAL CLINICAL EXPERIENCE
0745 DENTAL ASSISTING CLINICAL MENTORING
0748 DENTAL TERMINOLOGY
0747 DENTAL SPECIALTIES

Under Health Occupations Science Technology

Add:

0725 UNDERSTANDING HUMAN BEHAVIOR
0716 BODY STRUCTURES AND FUNCTIONS
0720 EKG/PHLEBOTOMY
0722 FUNDAMENTALS OF MEDICAL REIMBURSEMENT

Under Medical Assistant

Delete: 0731 and 0732

Add:

0738 MEDICAL ASSISTANT ORIENTATION
0735 MEDICAL ASSISTANT ADMINISTRATIVE PROCEDURES I
0737 MEDICAL ASSISTANT LABORATORY AND DIAGNOSTIC PROCEDURES
0733 MEDICAL ASSISTANT CLINICAL PROCEDURES
0736 MEDICAL ASSISTANT ADMINISTRATIVE PROCEDURES II
0734 MEDICAL ASSISTANT ADVANCED PHARMACOLOGY
0739 NUTRITION & WELLNESS

Under Food Production and Services

Delete: 1011 and 1012

Add:

1013 PROSTART IA
1014 PROSTART IB
1019 PROSTART IIA
1020 PROSTART IIB
1015 HOSPITALITY INDUSTRY AND SERVICE
1016 FOOD SERVICE MANAGEMENT PRACTICES
1017 CULINARY NUTRITION AND THE MENU
1018 BAKING AND PASTRY APPLICATIONS

Under Child Development Specialist

Delete: 1001 and 1002

Add:

1003 CHILD DEVELOPMENT SPECIALIST I
1004 CHILD DEVELOPMENT SPECIALIST II
1029 ACDS APPRENTICESHIP

Under Elementary Aide

Add:

1021 SCHOOL AGE GROWTH & DEVELOPMENT
1022 THE EDUCATION PROFESSION
1023 ELEMENTARY SCHOOL AIDE

Under Aries Technology

Add:

- 1611 APPLICATIONS FOR NETWORK & HARDWARE
- 1613 BASIC SYSTEM OPERATIONS & APPLICATIONS
- 1615 COMPUTER CONSTRUCTION
- 1617 SERVER & NETWORK OPERATIONS

Under Cisco Networking Academies

Add:

- 1643 FUNDAMENTALS OF UNIX

Under Communications Technology

Add:

- 1687 BROADCAST MANAGEMENT
- 1689 PRODUCING LIVE TV

Under Computer Systems & Operational Support

Add:

- 1702 A+ COMPUTER TECHNICIAN OPERATING SYSTEMS

Under Cosmetology

Delete: 1739, 1735, 1731

Add:

- 1719 PROFESSIONAL PRACTICES-SKIN & NAILS I
- 1732 PROFESSIONAL PRACTICES SKIN & NAILS II
- 1734 FUNDAMENTALS OF HAIR STYLING I
- 1736 FUNDAMENTALS OF HAIR STYLING II
- 1738 COSMETOLOGY SCIENCE I
- 1740 COSMETOLOGY SCIENCE II

Under Electronics Technology

Add:

- 1782 COMPUTER ELECTRONIC THEORY
- 1784 COMPUTER ELECTRONIC CIRCUITS
- 1786 NETWORK ESSENTIALS
- 1788 NETWORK OPERATIONS

Under Oracle Internet Academy

Delete: 1931, 1933, 1935, 1937

Add:

- 1932 DATA MODELING
- 1934 SQL PROGRAMMING
- 1936 INTRODUCTION TO JAVA
- 1938 JAVA PROGRAMMING

Under Quantity Foods Occupations

Delete: 1951 and 1952.

Add:

- 1953 PROSTART IA
- 1954 PROSTART IB
- 1955 PROSTART IIB
- 1956 PROSTART IIB
- 1957 HOSPITALITY INDUSTRY AND SERVICE
- 1958 FOOD SERVICE MANAGEMENT PRACTICES
- 1959 CULINARY NUTRITION AND THE MENU
- 1979 BAKING AND PASTRY APPLICATIONS

Under Power Equipment Systems

Add:

- 1962 FUNDAMENTALS OF POWER EQUIPMENT I
- 1964 FUNDAMENTALS OF POWER EQUIPMENT II
- 1966 POWER EQUIPMENT SERVICE I
- 1968 POWER EQUIPMENT SERVICE II

1970 POWER EQUIPMENT SYSTEMS APPLICATIONS
1972 POWER EQUIPMENT SYSTEMS ADVANCED
APPLICATIONS

Under Technology Education

Revise: 2436, FOUNDATIONS IN ENGINEERING

Add:

2451 FUNDAMENTALS OF MILLWORK & CABINET MAKING

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**TITLE 126
LEGISLATIVE RULE
BOARD OF EDUCATION**

OFFICE WEST VIRGINIA
SECRETARY OF STATE

**SERIES 44M
CONTENT STANDARDS AND OBJECTIVES FOR TECHNICAL AND ADULT
EDUCATION IN WEST VIRGINIA SCHOOLS (2520.13)**

§126-44M-1 General.

1.1. Scope. -- West Virginia Board of Education Policy 2510 provides a definition of a delivery system for, and an assessment and accountability system for, a thorough and efficient education for West Virginia public school students. Policy 2520.13 defines the content standards (or instructional goals) and objectives for the technical and adult programs of study required by Policy 2510.

1.2. Authority. -- W.Va. Constitution, Article XII, §2, W.Va. Code §18-2-5 and §18-9A-22.

1.3. Filing Date. --

1.4. Effective Date. -- July 1, 2003.

1.5. Repeal of former rule. -- this legislative rule repeals and replaces Legislative Rule 126CSR44M "Content Standards and Objectives for Technical and Adult Education in West Virginia Schools" filed December 3, 2002 and effective July 1, 2003.

§126-44M-2. Purpose.

2.1. This policy defines the content standards (or instructional goals) and objectives for the programs of study required by Policy 2510 in technical and adult education courses.

§126-44M-3. Incorporation by Reference.

3.1. A copy of Content Standards and Objectives for Technical and Adult Education in West Virginia Schools is attached and incorporated by reference into this policy. Copies may be obtained in the Office of the Secretary of State and in the West Virginia Department of Education, Office of Program Services.

§126-44M-4. Summary of the Content Standards (or Instructional Goals) and Objectives

4.1. The West Virginia Board of Education has the responsibility for establishing high quality standards pertaining to all education programs (W.Va. Code §18-9A-22). The content standards and objectives provide a focus for teachers to teach and students to learn those skills and competencies essential for future success in the workplace and further education. The document includes content standards for technical and adult education in West Virginia schools.

**West Virginia Department of
Education
Office of Program Services**

**Policy 2520.13
Content Standards and Objectives
For Technical and Adult Education
In West Virginia Schools**

Foreword

The West Virginia Board of Education and the West Virginia Department of Education are pleased to present Policy 2520.13: Content Standards and Objectives for Technical and Adult Education in West Virginia Schools.

Committees of educators from across the state gathered to work on curriculum refinement. The committees incorporated content based on the most current research, national standards and best teaching practices in the field. Primary issues that have been addressed in the current revision are building a rigorous and challenging curriculum, ensuring a curriculum that is accessible to every student, and designing a format that can easily be used and understood.

West Virginia educators have played a key role in shaping the content standards. Their contribution was critical in creating a policy that is meaningful for the classroom.

The content standards and objectives combine to give teachers a powerful resource for planning instruction. The focus throughout the document remains on achieving at a high level and on offering all students in West Virginia rigor and challenge.

David Stewart
State Superintendent of Schools

Table of Contents

Foreword.....	i
Table of Contents	ii
Explanation of Terms.....	viii
Agriculture and Natural Resources I WVEIS Code 0101.....	1
Agriculture and Natural Resources II WVEIS Code 0102.....	3
Agriculture Mechanics I WVEIS Code 0112.....	5
Agricultural Mechanics II WVEIS Code 0113.....	7
Agribusiness Management WVEIS Code 0131.....	9
Agricultural Biotechnology WVEIS Code 0132.....	11
Agricultural Cooperative Education WVEIS Code 0133.....	14
Agricultural Experience Program WVEIS Code 0134.....	17
Agriscience 11 WVEIS Code 0135.....	18
Agriscience 12 WVEIS Code 0136.....	21
Animal And Veterinary Science – Large Animals WVEIS Code 0137.....	24
Animal And Veterinary Science – Small Animals WVEIS Code 0138.....	27
Animal Processing WVEIS Code 0139.....	30
Animal Science And Production WVEIS Code 0140.....	33
Aquaculture WVEIS Code 0141.....	36
Computers In Agriculture WVEIS Code 0142.....	39
Environmental Technology WVEIS Code 0143.....	41
Food Science and Processing WVEIS Code 0144.....	44
Hydroponics WVEIS Code 0145.....	47
Leadership Development WVEIS Code 0146.....	49
Outdoor Recreation WVEIS Code 0147.....	51
Poultry Science and Production WVEIS Code 0148.....	54
Small Animal Care and Management WVEIS Code 0149.....	57
Soil And Plant Science (Agronomy) WVEIS Code 0150.....	60
Food Science and Processing II – Retail Specialization WVEIS Code 0151.....	64
Environmental Technology II WVEIS Code 0152.....	67
Agricultural Environmental Science WVEIS Code 0153.....	70
Forestry I WVEIS Code 0182.....	74
Forestry II WVEIS Code 0183.....	76
Forestry III WVEIS Code 0184.....	78
Forestry IV WVEIS Code 0185.....	80
Forestry V WVEIS Code 0186.....	82
Forestry Science And Ecology WVEIS Code 0187.....	84
Natural Resource Management I WVEIS Code 0188.....	87
Natural Resource Management II WVEIS Code 0189.....	90
Wildlife Management WVEIS Code 0190.....	94
Grounds Maintenance WVEIS Code 0201.....	96
Horticulture WVEIS Code 0212.....	98
Floriculture WVEIS Code 0213.....	101
Greenhouse Technology WVEIS Code 0214.....	103
Landscape Design And Installation WVEIS Code 0215.....	106
Landscape Maintenance WVEIS Code 0216.....	108
Turf Management WVEIS Code 0217.....	110
Accounting Principles I WVEIS Code 1401.....	112
Accounting Principles II WVEIS Code 1403.....	114
Banking and Finance WVEIS Code 1405.....	116
Basic Keyboarding WVEIS Code 1407.....	118
Business Communication WVEIS Code 1409.....	120
Business Computer Applications I WVEIS Code 1411.....	123
Business Computer Applications II WVEIS Code 1413.....	124
Business Computer Literacy WVEIS Code 1415.....	125

Business Law	WWEIS Code 1417	127
Business Math	WWEIS Code 1419	130
Business Recordkeeping	WWEIS Code 1421	132
Computerized Presentations	WWEIS Code 1423	134
Cooperative Office Education	WWEIS Code 1425	137
Database Management	WWEIS Code 1427	139
Desktop Publishing	WWEIS Code 1429	143
Digital Imaging/Multimedia	WWEIS Code 1431	144
Document (Word) Processing	WWEIS Code 1433	146
Economics of Business	WWEIS Code 1435	148
International Business and Marketing	WWEIS Code 1437	151
Introduction to Business and Marketing	WWEIS Code 1439	154
Keyboarding and Information Processing	WWEIS Code 1441	157
Legal Office Management	WWEIS Code 1443	159
Medical Office Management	WWEIS Code 1443	161
Management and Entrepreneurship	WWEIS Code 1445	163
Notetaking and Study Skills	WWEIS Code 1447	166
Office Management	WWEIS Code 1449	168
Personal Finance	WWEIS Code 1451	171
Spreadsheet Management	WWEIS Code 1453	173
Web Page Publishing	WWEIS Code 1455	175
Diversified Cooperative Training I (DCT)	WWEIS Code 0511	176
Diversified Cooperative Training II (DCT)	WWEIS Code 0512	179
DCT Work Experience I	WWEIS Code 0513	182
DCT Work Experience II	WWEIS Code 0514	184
Life Connections	WWEIS Code 0901	186
Parenting And Child Development	WWEIS Code 0902	188
Consumer Economics	WWEIS Code 0911	190
Adolescent Parent Program	WWEIS Code 0921	193
(Base) Basic Attitudes, Skills and Experiences	WWEIS Code 0922	196
(Base 5) Basic Attitudes, Skills and Experiences	WWEIS Code 0923	200
(Base 6) Basic Attitudes, Skills and Experiences	WWEIS Code 0924	204
(Base 7) Basic Attitudes, Skills and Experiences	WWEIS Code 0925	208
(Base 8) Basic Attitudes, Skills and Experiences	WWEIS Code 0926	212
Community and Human Services	WWEIS Code 0927	216
Human Services, Development and Relationships	WWEIS Code 0928	217
Surviving Today's Experiences and Problems Successfully (STEPS)	WWEIS Code 0929	220
Applied Design-Housing/Interior Design	WWEIS Code 0941	225
Food Preparation	WWEIS Code 0951	227
Nutrition and Food Science	WWEIS Code 0952	230
Applied Design-Fashion Merchandising	WWEIS Code 0961	233
Dental Assistant Biomedical Sciences	WWEIS Code 0741	235
Dental Assistant Clinical Practices	WWEIS Code 0742	238
Dental Assistant Clinical Sciences	WWEIS Code 0743	241
Dental Assistant General Studies	WWEIS Code 0744	244
Dental Assistant Clinical Mentoring	WWEIS Code 0745	247
Dental Science	WWEIS Code 0746	251
Dental Specialties	WWEIS Code 0747	255
Dental Terminology	WWEIS Code 0748	258
Supervised Dental Assistant Experience	WWEIS Code 0749	261
Health Care Fundamentals	WWEIS Code 0711	265
Supplement to Health Care Fundamentals	WWEIS Code 0713	268
Concepts Of Health Care	WWEIS Code 0715	270
Body Structures and Functions	WWEIS Code 0716	273
Clinical Concepts	WWEIS Code 0717	279
Diversified Clinical Applications	WWEIS Code 0719	282

ECG/Phlebotomy WWEIS Code 0720.....	284
Medical Terminology WWEIS Code 0721.....	291
Fundamentals of Medical Reimbursement WWEIS Code 0722.....	293
Understanding Human Behavior WWEIS Code 0725.....	296
Medical Assistant Clinical Procedures WWEIS Code 0733.....	302
Medical Assistant Advanced Pharmacology WWEIS Code 0734.....	305
Medical Assistant Administrative Procedures I WWEIS Code 0735.....	308
Medical Assisting Administrative Procedures II WWEIS Code 0736.....	311
Medical Assisting Laboratory and Diagnostic Procedures WWEIS Code 0737.....	314
Medical Assistant Orientation WWEIS Code 0738.....	317
Nutrition and Wellness WWEIS Code 0739.....	320
Lodging Management Program I A WWEIS Code 1203.....	323
Lodging Management Program I B WWEIS Code 1204.....	326
Lodging Management Program II A WWEIS Code 1205.....	329
Lodging Management Program II B WWEIS Code 1206.....	332
Advertising WWEIS Code 0401.....	335
Economics of Business WWEIS Code 0404.....	338
Fashion Marketing WWEIS Code 0407.....	341
International Business and Marketing WWEIS Code 0410.....	345
Introduction to Business and Marketing WWEIS Code 0413.....	348
Management and Entrepreneurship WWEIS Code 0416.....	351
Marketing Principles I WWEIS Code 0422.....	354
Marketing Principles II WWEIS Code 0425.....	357
Marketing Work Experience/Internship WWEIS Code 0428.....	360
Professional Selling/Salesmanship WWEIS Code 0431.....	362
Sports, Entertainment, Recreation In Marketing WWEIS Code 0434.....	366
Tour/Hospitality Marketing WWEIS Code 0437.....	370
Child Development Specialist I WWEIS Code 1003.....	374
Child Development Specialist II WWEIS Code 1004.....	378
School Age Growth and Development WWEIS Code 1021.....	382
The Education Profession WWEIS Code 1022.....	383
Elementary School Aide WWEIS Code 1023.....	384
ACDS Apprenticeship WWEIS Code 1029.....	386
ProStart I A WWEIS Code 1013.....	387
ProStart I B WWEIS Code 1014.....	390
Hospitality Industry and Service WWEIS Code 1015.....	392
Foodservice Management Practices WWEIS Code 1016.....	394
Culinary Nutrition and the Menu WWEIS Code 1017.....	398
Baking and Pastry Applications WWEIS Code 1018.....	399
ProStart II A WWEIS Code 1019.....	402
ProStart II B WWEIS Code 1020.....	405
Basic Control Circuits WWEIS Code 1601.....	408
Domestic Refrigeration WWEIS Code 1603.....	409
Fundamentals of Air Conditioning/Refrigeration WWEIS Code 1605.....	410
Heating Systems WWEIS Code 1607.....	412
Applications for Network and Hardware WWEIS Code 1611.....	413
Basic System Operation and Application WWEIS Code 1613.....	415
Computer Construction WWEIS Code 1615.....	417
Server and Network Operations WWEIS Code 1617.....	419
Alternative Fuels WWEIS Code 1621.....	420
Basic Engine Concepts WWEIS Code 1623.....	426
Brakes WWEIS Code 1625.....	428
Electrical/Electronic Systems WWEIS Code 1627.....	431
Engine Performance WWEIS Code 1629.....	433
Fundamentals Of Automotive Technology WWEIS Code 1631.....	435
Heating and Air Conditioning WWEIS Code 1633.....	437

Manual/Automatic Drive Train Axles	WWEIS Code 1635	439
Suspension and Steering Diagnosis	WWEIS Code 1637	443
Cabling-Video/Data/Voice	WWEIS Code 1641	446
Fundamentals of UNIX	WWEIS Code 1643	447
Networking Fundamentals	WWEIS Code 1645	453
Project Based Networking	WWEIS Code 1647	454
Routing and Switching	WWEIS Code 1649	455
Routing Theory and Router Technologies	WWEIS Code 1651	456
Web Course Design	WWEIS Code 1653	457
Blueprint Reading	WWEIS Code 1661	458
Fundamentals of Collision Repair Technology	WWEIS Code 1671	459
Mechanical and Electrical Components	WWEIS Code 1673	461
Non-Structural Analysis And Damage Repair	WWEIS Code 1675	464
Structural Analysis and Damage Repair	WWEIS Code 1677	465
Surface Preparation and Refinishing	WWEIS Code 1679	467
Fundamentals of Broadcasting (Radio & TV)	WWEIS Code 1681	469
Radio Broadcast Applications	WWEIS Code 1683	470
Television Production Applications	WWEIS Code 1685	471
Broadcast Management	WWEIS Code 1687	472
Producing Live Television	WWEIS Code 1689	474
A+ Service Technician	WWEIS Code 1701	476
A+ Computer Technicians Operating Systems	WWEIS Code 1702	478
Computer Maintenance And Repair	WWEIS Code 1703	480
Fundamentals of Computer Systems	WWEIS Code 1705	482
Systems Software	WWEIS Code 1707	484
Technical Computer Applications	WWEIS Code 1709	485
Web Development and Support	WWEIS Code 1711	487
Drafting Specialization - Architectural	WWEIS Code 1721	488
Drafting Specialization-Civil	WWEIS Code 1723	489
Drafting Specialization - Mechanical	WWEIS Code 1725	490
Drafting Techniques	WWEIS Code 1727	491
Fundamentals Of Drafting	WWEIS Code 1729	493
Fundamentals of Business Management	WWEIS Code 1733	495
Orientation to Cosmetology	WWEIS Code 1737	496
Professional Practices – Skin and Nails I	WWEIS Code 1719	498
Professional Practices – Skin and Nails II	WWEIS Code 1732	500
Fundamentals of Hairstyling I	WWEIS Code 1734	501
Fundamentals of Hair Styling II	WWEIS Code 1736	505
Cosmetology Science I	WWEIS Code 1738	509
Cosmetology Science II	WWEIS Code 1740	510
Diesel Engine Components	WWEIS Code 1741	511
Diesel Engine Tune Up and Troubleshooting	WWEIS Code 1743	513
Diesel Preventative Maintenance and Inspection	WWEIS Code 1745	514
Diesel Support Systems	WWEIS Code 1747	515
Diesel Truck Chassis Concepts	WWEIS Code 1749	517
Fundamentals of Diesel Equipment Technology	WWEIS Code 1751	519
Basic Electronics	WWEIS Code 1761	521
Fundamentals of Electricity	WWEIS Code 1763	523
Industrial and Commercial Wiring	WWEIS Code 1765	525
National Electrical Code	WWEIS Code 1767	526
Residential Wiring	WWEIS Code 1769	527
Rotating Devices and Control Circuitry	WWEIS Code 1771	529
Special Applications In Electronics	WWEIS Code 1773	531
Analog Circuits	WWEIS Code 1781	532
Computer Electronics Theory	WWEIS Code 1782	533
Basic AC Circuits	WWEIS Code 1783	534

Computer Electronics Circuits	WWEIS Code 1784	536
Basic Solid State Devices and Circuits	WWEIS Code 1785	537
Network Essentials	WWEIS Code 1786	538
DC Circuits and Electron Physics	WWEIS Code 1787	540
Network Operations	WWEIS Code 1788	541
Digital Circuits	WWEIS Code 1789	542
Electronics Specializations	WWEIS Code 1791	543
Fundamentals of Electricity	WWEIS Code 1793	545
Wiring and Soldering	WWEIS Code 1795	547
Basic Masonry and Landscaping	WWEIS Code 1801	548
Basic Plumbing and Electricity	WWEIS Code 1803	549
Fundamentals of Facilities Maintenance	WWEIS Code 1805	550
Forestry I	WWEIS Code 1811	552
Forestry II	WWEIS Code 1812	554
Forestry III	WWEIS Code 1813	556
Forestry IV	WWEIS Code 1814	558
Forestry V	WWEIS Code 1815	560
Outdoor Recreation	WWEIS Code 1816	562
Wildlife Management	WWEIS Code 1817	564
Concrete Finishing	WWEIS Code 1821	566
Finishing Carpentry	WWEIS Code 1823	569
Foundations and Framing	WWEIS Code 1825	570
Fundamentals of Building Construction	WWEIS Code 1827	571
Masonry and Plumbing	WWEIS Code 1829	573
Basic Darkroom Procedures	WWEIS Code 1831	574
Electronic Imaging	WWEIS Code 1833	576
Fundamentals of Graphic Design and Production	WWEIS Code 1835	577
Graphic Communications	WWEIS Code 1837	579
Image Assembly and Platemaking	WWEIS Code 1839	581
Offset Press and Binding Process	WWEIS Code 1841	582
Basic Illustration	WWEIS Code 1851	584
Computer Graphics	WWEIS Code 1853	585
Desktop Publishing	WWEIS Code 1855	587
Fundamentals of Graphic Design and Production	WWEIS Code 1857	588
Graphic Design	WWEIS 1859	590
Illustration	WWEIS Code 1861	591
Electrical Maintenance	WWEIS Code 1871	592
Fundamentals of Industrial Equipment Maintenance	WWEIS Code 1873	593
Hydraulics and Pneumatic Systems	WWEIS Code 1875	596
Engine Machining	WWEIS Code 1901	597
Fundamentals of Machine Tool Technology	WWEIS Code 1903	598
Machine Processes	WWEIS Code 1905	601
Machining Processes and Applications	WWEIS Code 1907	603
Metal Trades Processes and Application	WWEIS Code 1909	605
Block and Rock Laying	WWEIS Code 1911	607
Bricklaying	WWEIS Code 1913	608
Concrete Finishing	WWEIS Code 1915	610
Foundations and Footings	WWEIS Code 1917	613
Fundamentals of Masonry	WWEIS Code 1919	614
Fundamentals of Materials Distribution	WWEIS Code 1921	616
Materials Distribution Equipment	WWEIS Code 1923	618
Materials Management	WWEIS Code 1925	619
Supervisory Skills In Warehousing	WWEIS Code 1927	620
Oracle I – Data Modeling	WWEIS Code 1932	621
Oracle II – SQL Programming	WWEIS Code 1934	624
Oracle III – Introduction to Java	WWEIS Code 1936	628

Oracle IV – Java Programming	WVEIS Code 1938	631
Floriculture	WVEIS Code 1941	634
Greenhouse Technology	WVEIS Code 1943	636
Horticulture	WVEIS Code 1945	639
Landscape Design and Installation	WVEIS Code 1947	642
Landscape Maintenance	WVEIS Code 1949	643
ProStart I A	WVEIS Code 1953	644
ProStart I B	WVEIS Code 1954	647
ProStart II A	WVEIS Code 1955	649
ProStart II B	WVEIS Code 1956	652
Hospitality Industry and Service	WVEIS Code 1957	655
Foodservice Management Practices	WVEIS Code 1958	657
Culinary Nutrition and the Menu	WVEIS Code 1959	661
Fundamentals of Power Equipment I	WVEIS Code 1962	662
Fundamentals of Power Equipment II	WVEIS Code 1964	664
Power Equipment Service I	WVEIS Code 1966	666
Power Equipment Service II	WVEIS Code 1968	667
Power Equipment Systems Applications	WVEIS Code 1970	668
Power Equipment Systems Advanced Applications	WVEIS Code 1972	670
Baking and Pastry Applications	WVEIS Code 1979	672
Arc Welding	WVEIS Code 1981	675
Blueprint Reading and Metallurgy	WVEIS Code 1983	677
Fundamentals of Welding Technology	WVEIS Code 1985	678
Gas Metal Arc Welding	WVEIS Code 1987	680
Gas Tungsten Arc Welding	WVEIS Code 1989	681
Shielded Metal Arc Welding	WVEIS Code 1993	682
Thermal Cutting and Welding	WVEIS Code 1995	683
Exploring Technology (2401-2409 inclusive)	WVEIS Code 2401	685
Communication Systems	WVEIS Code 2421	689
Construction Systems	WVEIS Code 2424	692
Drafting Specialization - Architectural	WVEIS Code 2427	695
Drafting Specialization – Mechanical	WVEIS Code 2430	696
Drafting Techniques	WVEIS Code 2433	697
Foundations in Engineering	WVEIS Code 2436	699
Fundamentals Of Drafting	WVEIS Code 2439	703
Manufacturing Systems	WVEIS Code 2442	705
Mechanical Services Systems	WVEIS Code 2445	708
Transportation Systems	WVEIS Code 2448	711
Fundamentals of Millwork and Cabinet Making	WVEIS Code 2451	715
Travel West Virginia	WVEIS Code 7663	719
INDEX (by WVEIS Code)		722

Explanation of Terms

Content Standards (or Instructional Goals) are broad descriptions of what students should know and be able to do in a content area. Content standards describe what students' knowledge and skills should be at the end of a course.

Objectives are incremental steps toward accomplishment of content standards. Objectives are organized around the content standards. Objectives build as students advance in their knowledge and skills.

Numbering of Standards

The number for each content standard is composed of three parts, each part separated by a period:

- The WWEIS course code;
- The letter S, for Standard; and
- The standard number.

Illustration: 0101.S.1 refers to Agriculture and Natural Resources I content standard #1.

Numbering of Objectives

The number of each objective is composed of two parts, each part separated by a period:

- The WWEIS code;
- The number of the content standard addressed; and
- The objective number.

Illustration: 0101.1.1 refers to Agriculture and Natural Resources I content standard #1, objective #1.

Unique Electronic Numbers (UENs)

Unique Electronic Numbers (or UENs) are numbers that help to electronically identify, categorize and link specific bits of information. Once Policy 2520.13 is available on the Web, each standard and each objective will have a Unique Electronic Number (UEN) that will always remain the same.

The codes printed in Policy 2520.13 form the basis of the UENs. The only additional set of numbers that will be added to each code to formulate its UEN will be a prefix that indicates the year and month that a particular version of Policy 2520.13 is approved by the State Board of Education. The date is not explicitly printed in the document but it is assumed to be part of every UEN. As sections of 2520.13 are revised, UENs will be changed to reflect the new approval date.

The prefix for the UENs in this section of Policy 2520.13 is "200303, indicating that the Board approval date is March, 2003.

UENs (Unique Electronic Numbers) are unique numbers that facilitate implementation of WV Standards into Electronic formats such as Databases and XML Files. The WV

Department of Education encourages everyone who is going to use the WV Content Standards in any kind of electronic distribution, alignment, or software development to use the UENs so that all efforts can be cross-referenced and there is consistency across initiatives.

Agriculture and Natural Resources I

WVEIS Code 0101

This area of study is designed to provide students with core skills and competencies needed for pursuing careers in agriculture and natural resources. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts.

Standard 1: Orientation to the Agriculture and Natural Resource Industries (0101.S.1)

Students will describe the natural resource industry.

Agriculture and Natural Resource Industries Objectives

Students will:

- 0101.1.1 Identify appropriate career opportunities in agriculture and natural resources.
- 0101.1.2 Relate the importance of agriculture and natural resources to state, national and international economies.
- 0101.1.3 Identify major agricultural and natural resources issues.
- 0101.1.4 Identify the scientific principles in food and fiber production.

Standard 2: Leadership in Agriculture and Natural Resources (0101.S.2)

Students will show leadership skills necessary for success in agriculture and natural resources.

Leadership in Agriculture and Natural Resources Objectives

Students will:

- 0101.2.1 Participate in meetings using parliamentary law.
- 0101.2.2 Use interpersonal skills in team problem solving.
- 0101.2.3 Prepare and deliver a brief presentation on an agricultural or natural resources topic.

Standard 3: Developing Work-Based Experience Program (0101.S.3)

Students will develop work-based experience programs in agriculture and natural resources.

Developing Work-Based Experience Program Objectives

Students will:

- 0101.3.1 Define and explain supervised experience programs in agriculture and natural resources.
- 0101.3.2 Explore opportunities for work-based experiences through supervised experience programs.
- 0101.3.3 Define record keeping terms for supervised experience programs.
- 0101.3.4 Complete budgets for potential supervised experience programs.
- 0101.3.5 Establish a supervised experience program in agriculture or natural resources.
- 0101.3.6 Utilize marketing principles.
- 0101.3.7 Demonstrate competency in agriscience problem solving.

Standard 4: Computer Applications in Agriculture and Natural Resources (0101.S.4)

Students will display skills involving computer application in natural resources.

Computer Applications in Agriculture and Natural Resources Objectives

Students will:

- 0101.4.1 Utilize keyboarding skills to operate agriculture and natural resources software.
- 0101.4.2 Search the Internet to secure agriculture and natural resources information.

Standard 5: Applying Basic Mechanical Skill in Agriculture and Natural Resources (0101.S.5)

Students will demonstrate basic mechanical skills.

Basic Mechanical Skill in Agriculture and Natural Resources Objectives

Students will:

- 0101.5.1 Demonstrate principles of safety.
- 0101.5.2 Demonstrate basic tool conditioning skills.
- 0101.5.3 Demonstrate basic carpentry skills.
- 0101.5.4 Demonstrate basic welding skills.
- 0101.5.5 Demonstrate basic cold metal skills.

Standard 6: Introductory Animal Science and Production (0101.S.6)

Students will demonstrate animal science and production skills.

Animal Science and Production Objectives

Students will:

- 0101.6.1 Explore various animal production opportunities.
- 0101.6.2 Explain management/health requirements of animals.
- 0101.6.3 Identify desirable characteristics for selecting large and small animals.
- 0101.6.4 Identify different types of animal digestive systems.

Standard 7: Introductory Plant Science and Production (0101.S.7)

Students will demonstrate plant science and production skills.

Introductory Plant Science and Production Objectives

Students will:

- 0101.7.1 Explore various plant production opportunities.
- 0101.7.2 Explain plant production requirements (macronutrients, micronutrients, pH).
- 0101.7.3 Identify the major parts of a plant.
- 0101.7.4 Describe the function of the major parts of a plant.

Standard 8: Basic Environmental Concerns (0101.S.8)

Students will demonstrate basic environmental skills.

Basic Environmental Concerns Objectives

Students will:

- 0101.8.1 Explain major environmental concerns - e.g. acid rain, air pollution, soil degradation and surface and groundwater pollution.
- 0101.8.2 Use measurement devices to collect and test soil and water samples.
- 0101.8.3 Explain the concepts of soil science and their relationship to agriculture.

Standard 9: Investigations and Problem Solving (0101.S.9)

Students will participate in investigations and problem solving in agriscience.

Investigations and Problem Solving Objectives

Students will:

- 0101.9.1 Engage in hands-on activities demonstrating agriscience and natural resources concepts and principles.

Agriculture and Natural Resources II

WVEIS Code 0102

This area of study is designed to provide students with core skills and competencies needed for pursuing advanced careers in agriculture and natural resources. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts.

Standard 1: Developing Work Based (0102.S.1)

Students will develop a work based experience program.

Developing Work Based Objectives

Students will:

- 0102.1.1 Analyze records of supervised experience programs to make sound decisions for expanding.
- 0102.1.2 Identify marketing trends and cycles.
- 0102.1.3 Identify employment trends and cycles.
- 0102.1.4 Identify the scientific principles in food and fiber production.

Standard 2: Computer Applications (0102.S.2)

Students will utilize computer applications in agriculture and natural resources.

Computer Applications Objectives

Students will:

- 0102.2.1 Use computer resources to solve problems related to work-based experience programs.

Standard 3: Ecosystem Management (0102.S.3)

Students will understand ecosystem management.

Ecosystem Management Objectives

Students will:

- 0102.3.1 Explain the impact of agriculture and forestry on ecosystems.
- 0102.3.2 Explain the relationship of wetlands to agriculture and natural resources.
- 0102.3.3 Test, interpret and analyze water and soil test data.

Standard 4: Leadership in Agriculture and Natural Resources (0102.S.4)

Students will display leadership skills in agriculture and natural resources.

Leadership in Agriculture and Natural Resources Objectives

Students will:

- 0102.4.1 Conduct meetings using parliamentary law.
- 0102.4.2 Serve as a small group team leader.
- 0102.4.3 Present prepared and extemporaneous speeches on issues affecting agriculture and natural resources.
- 0102.4.4 Participate in committees and leadership development activities.
- 0102.4.5 Participate in committee service.

Standard 5: Application of Mechanical Skills (0102.S.5)

Students will apply mechanical skills to augment agriculture and natural resource activities.

Application of Mechanical Skills Objectives

Students will:

- 0102.5.1 Read and transfer measurements.

- 0102.5.2 Develop bill of materials and calculate costs.
- 0102.5.3 Demonstrate advanced tool conditioning skills.
- 0102.5.4 Demonstrate advanced welding skills.
- 0102.5.5 Demonstrate building construction skills.
- 0102.5.6 Service and maintain small engines.
- 0102.5.7 Apply mechanical skills in repair and construction projects related to supervised experience programs.

Standard 6: Advanced Animal Science and Production (0102.S.6)

Students will demonstrate advanced animal science reproduction skills.

Advanced Animal Science and Production Objectives

Students will:

- 0102.6.1 Compare animal digestive systems.
- 0102.6.2 Analyze nutrient requirements of animals and calculate rations.
- 0102.6.3 Identify symptoms of nutrient deficiencies.
- 0102.6.4 Describe the use of feed additives and growth stimulants.
- 0102.6.5 Explain the role of breeding and selection in animal improvement.
- 0102.6.6 Recognize steps to maintain animal health.
- 0102.6.7 Explain biotechnology applications in animal production.

Standard 7: Advanced Plant Science and Production (0102.S.7)

Students will demonstrate advanced plant science and production skills.

Advanced Plant Science and Production Objectives

Students will:

- 0102.7.1 Describe approved practices in plant nutrition.
- 0102.7.2 Identify symptoms and management strategies for plant nutrient deficiencies.
- 0102.7.3 Identify pest management measures.
- 0102.7.4 Explain biotechnology applications in plant production.

Standard 8: Forestry (0102.S.8)

Students will exhibit skills enhancing selective forestry activities.

Forestry Objectives

Students will:

- 0102.8.1 Identify trees of major economic importance.
- 0102.8.2 Identify relationships among forests, wildlife and water resources.
- 0102.8.3 Select best management practices for timber stand improvement.

Standard 9: Investigations and Problem Solving (0102.S.9)

Students will participate in investigations and problem solving in agriscience.

Investigations and Problem Solving Objectives

Students will:

- 0102.9.1 Students will engage in advanced hands-on activities relating to agriscience and natural resources concepts.

Agriculture Mechanics I

WVEIS Code 0112

This area of study is designed to provide learners with job entry-level skills in the agricultural mechanics industry. Major instructional concepts include an orientation to mechanics industry, leadership, safety, drawing and blueprinting, shop, hand and power tools.

Standard 1: Orientation to the Agricultural Mechanics Industry (0112.S.1)

Students will describe mechanics as a career.

Agricultural Mechanics Industry Objectives

Students will:

- 0112.1.1 Identify various career opportunities in agricultural mechanics.
- 0112.1.2 Develop computer skills.
- 0112.1.3 Develop resume and job seeking skills.

Standard 2: Leadership in Agricultural Mechanics (0112.S.2)

Students will participate effectively in a group (FFA) setting.

Leadership in Agricultural Mechanics Objectives

Students will:

- 0112.2.1 Define the function and history of the FFA.
- 0112.2.2 Identify parliamentary procedure skills need to conduct a meeting.
- 0112.2.3 Perform individual leadership skills in preparing and presenting a speech.
- 0112.2.4 Prepare and identify components of a program of activities.

Standard 3: Understanding Safety and Fire Control Procedures (0112.S.3)

Students will maintain a safe working environment.

Understanding Safety and Fire Control Procedures Objectives

Students will:

- 0112.3.1 Utilize personal safety devices.
- 0112.3.2 Identify general shop safety rules.
- 0112.3.3 Maintaining a safe working environment.
- 0112.3.4 Identify and comply with safety rules relating to operation of farm tractors and equipment.

Standard 4: Understanding and Interpreting Drawing and Blueprints (0112.S.4)

Students will use blueprints to plan projects.

Understanding and Interpreting Drawing and Blueprints Objectives

Students will:

- 0112.4.1 Apply dimensions to drawings and free hand sketches.
- 0112.4.2 Calculate costs and bill of materials.

Standard 5: Using Shop Hand and Power Tools (0112.S.5)

Students will safely and correctly demonstrate metal fabrication.

Using Shop Hand and Power Tools Objectives

Students will:

- 0112.5.1 Identify and use common hand tools and power equipment.
- 0112.5.2 Perform cold metal procedures - cutting, drilling and threading.
- 0112.5.3 Perform various arc-welding functions.

- 0112.5.4 Perform various oxy-acetylene tasks.
- 0112.5.5 Conduct arc welding projects that relate to SAEs.

Standard 6: Technology Applications (0112.S.6)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0112.6.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in agricultural mechanics.
 - Locate, evaluate, and collect information from a variety of sources related to agricultural mechanics.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0112.6.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0112.6.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to agricultural mechanics.
- 0112.6.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of agricultural mechanics.

Standard 7: Process/Workplace Skills in Agribusiness (0112.S.7)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills in Agribusiness Objectives

Students will:

- 0112.7.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0112.7.2 Explore careers available in agricultural mechanics.
- 0112.7.3 Use a variety of sources to investigate the educational requirements of various careers in agribusiness and related sciences.
- 0112.7.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0112.7.5 Demonstrate correct language usage in all oral and written work.
- 0112.7.6 Perform effectively in both leadership and non-leadership roles.
- 0112.7.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0112.7.8 Participate as a team member to complete a variety of assignments.

Standard 8: Laboratory Investigation (0112.S.8)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0112.8.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0112.8.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0112.8.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0112.8.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Agricultural Mechanics II

WVEIS Code 0113

This area of study provides students with more advanced concepts and practical application in the areas of leadership, computer application, ag engines, structures, electricity and fencing.

Standard 1: Introduction to Basic Principles of Agricultural Engines – Gasoline and Diesel (0113.S.1)

Students will learn the basic principles of agricultural engines – gasoline and diesel.

Gasoline and Diesel Objectives

Students will:

- 0113.1.1 Interpret basic principles of agricultural engines.
- 0113.1.2 Apply principles of tune-up procedure.
- 0113.1.3 Perform engine overhauls.
- 0113.1.4 Demonstrate problem solving in operation and maintenance of engines.
- 0113.1.5 Identify hydraulic systems.
- 0113.1.6 Identify and use diagnostic testing equipment.

Standard 2: Agricultural Structures (0113.S.2)

Students will use agriculture construction techniques.

Agricultural Structures Objectives

Students will:

- 0113.2.1 Identify basic building construction techniques related to agricultural structures.
- 0113.2.2 Select and install appropriate fasteners.
- 0113.2.3 Select kinds and grades of lumber for the job.
- 0113.2.4 Identify roof designs and materials.
- 0113.2.5 Exhibit concrete and masonry skills.
- 0113.2.6 Identify, select and use plumbing fixtures.
- 0113.2.7 Select and use various painting and finishing materials.

Standard 3: Agricultural Electricity (0113.S.3)

Students will use proper safety in electrical wiring.

Agricultural Electricity Objectives

Students will:

- 0113.3.1 Demonstrate electrical theory and skills with agricultural electrical units.
- 0113.3.2 Identify terminology, circuits, breakers, switches and service entrance panels based on state codes.
- 0113.3.3 Identify, select and use electric motors, motor controls, pulley sizes and speeds.
- 0113.3.4 Demonstrate proper safety procedures in all electrical work.

Standard 4: Fencing (0113.S.4)

Students will explore fencing for agricultural applications.

Fencing Objectives

- 0113.4.1 Identify and understand the various types of fencing, tools and equipment.
- 0113.4.2 Analyze the economics of various fencing systems.

Standard 5: Agricultural Equipment (0113.S.5)

Students will maintain, adjust and repair agricultural equipment.

Agricultural Equipment Objectives

Students will:

- 0113.5.1 Identify agricultural machinery and equipment.
- 0113.5.2 Perform maintenance procedures as recommended in service manuals.
- 0113.5.3 Identify agricultural lubricants and fuels.

Standard 6: Technology Applications (0113.S.6)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0113.6.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in agricultural mechanics.
 - Locate, evaluate, and collect information from a variety of sources related to agricultural mechanics.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0113.6.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0113.6.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to agricultural mechanics.
- 0113.6.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of an agricultural mechanics.

Standard 7: Process/Workplace Skills in Agribusiness (0113.S.7)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills in Agribusiness Objectives

Students will:

- 0113.7.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0113.7.2 Explore careers available in agricultural mechanics.
- 0113.7.3 Use a variety of sources to investigate the educational requirements of various careers in agricultural mechanics.
- 0113.7.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0113.7.5 Demonstrate correct language usage in all oral and written work.
- 0113.7.6 Perform effectively in both leadership and non-leadership roles.
- 0113.7.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0113.7.8 Participate as a team member to complete a variety of assignments.

Standard 8: Lab Investigation (0113.S.8)

Students will safely conduct laboratory investigations and exploratory learning.

Lab Investigation Objectives

Students will:

- 0113.8.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0113.8.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0113.8.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0113.8.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Agribusiness Management

WVEIS Code 0131

Agribusiness management is for students who seek further agriculture, business, advancement and management techniques that will enable them to become successful in owning and operating a business.

Standard 1: Agribusiness Concepts (0131.S.1)

Students will identify different types of business organizations.

Agribusiness Concepts Objectives

Students will:

- 0131.1.1 Identify agribusiness organizational structures.
- 0131.1.2 Distinguish between partnership, limited partnership and joint venture.
- 0131.1.3 Describe regular and sub-chapter S corporations.
- 0131.1.4 Explain the difference between cooperatives and corporations.

Standard 2: Agripreneurship (0131.S.2)

Students will describe the risks and rewards of becoming an entrepreneur.

Agripreneurship Objectives

Students will:

- 0131.2.1 Define entrepreneurship.
- 0131.2.2 Recognize advantages and disadvantages of being self-employed.
- 0131.2.3 Identify personal characteristics of successful agripreneurs.
- 0131.2.4 Explain why businesses succeed.

Standard 3: Preparing a Business Plan (0131.S.3)

Students will develop a business plan and technical resources.

Preparing a Business Plan Objectives

Students will:

- 0131.3.1 Identify and complete the components of a business plan.
- 0131.3.2 Prepare a cash flow statement for a proposed agribusiness.
- 0131.3.3 Identify sources of technical assistance in establishing and maintaining a successful business.
- 0131.3.4 Explain risk management.

Standard 4: Business Law (0131.S.4)

Students will identify the basic business law involved in agriculture.

Business Law Objectives

Students will:

- 0131.4.1 Identify the types and sources of laws.
- 0131.4.2 Describe liability and negligence laws.
- 0131.4.3 Describe health and safety regulations.
- 0131.4.4 Identify legal requirements and common laws and legal documentation of a successful business operation.

Standard 5: Marketing and Sales Management (0131.S.5)

Students will develop a marketing and sales plan.

Marketing and Sales Management Objectives

Students will:

- 0131.5.1 Develop and maintain a marketing strategy.
- 0131.5.2 Explain methods of advertising.
- 0131.5.3 Identify sources of information in using marketing research.
- 0131.5.4 Demonstrate successful marketing techniques.

Standard 6: Financial Management (0131.S.6)

Students will develop various financial records of an agribusiness.

Financial Management Objectives

Students will:

- 0131.6.1 Use computers in maintaining business documents and records.
- 0131.6.2 Use computers to make sales and business projections.
- 0131.6.3 Prepare sales literature and advertisements.

Standard 7: Technology Applications in Agribusiness (0131.S.7)

Students will apply technology to investigate real-world problems.

Technology Applications in Agribusiness Objectives

Students will:

- 0131.7.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in agribusiness.
 - Locate, evaluate, and collect information from a variety of sources related to agribusiness.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0131.7.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0131.7.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to agribusiness.
- 0131.7.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of agribusiness.

Standard 8: Process/Workplace Skills in Agribusiness (0131.S.8)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills in Agribusiness Objectives

Students will:

- 0131.8.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0131.8.2 Explore careers available in agribusiness.
- 0131.8.3 Use a variety of sources to investigate the educational requirements of various careers in agribusiness and related sciences.
- 0131.8.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0131.8.5 Demonstrate correct language usage in all oral and written work.
- 0131.8.6 Perform effectively in both leadership and non-leadership roles.
- 0131.8.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0131.8.8 Participate as a team member to complete a variety of assignments.

Agricultural Biotechnology

WVEIS Code 0132

This course is designed to provide knowledge, skills and competencies regarding the application of biotechnology to agriscience. The course establishes a basic understanding of biotechnology, genetics, and agricultural applications and explores related careers.

Standard 1: Orientation to Biotechnology (0132.S.1)

Students will research application of biotechnology in agriscience.

Biotechnology Objectives

Students will:

- 0132.1.1 Investigate biotechnology and its applications to agriscience.
- 0132.1.2 Research the biotechnology industry and make predictions regarding future uses in agriscience and the impact on the industry and consumer.

Standard 2: Genetics and Genetic Engineering (0132.S.2)

Students will describe genetic engineering.

Genetics and Genetic Engineering Objectives

Students will:

- 0132.2.1 Define and exhibit an understanding of basic genetic terms.
- 0132.2.2 Explain the concept of habitability.
- 0132.2.3 Compare and contrast methods of transferring genetic information.
- 0132.2.4 Relate the concepts of dominant and recessive genes to common heritable traits.
- 0132.2.5 Explain and simulate recombinant DNA procedures.
- 0132.2.6 Explain and perform procedures used in tissue culturing.
- 0132.2.7 Research emerging methods of genetic engineering.
- 0132.2.8 Properly and safely manipulate equipment and procedures used in performing genetic engineering tasks.

Standard 3: The Application of Biotechnology to Animal Management and Reproduction (0132.S.3)

Students will apply principles of biotechnology to animal production.

Animal Management and Reproduction Objectives

Students will:

- 0132.3.1 Apply principles of biotechnology to animal selection.
- 0132.3.2 Apply principles of biotechnology to animal health.
- 0132.3.3 Apply principles of biotechnology to the management of animal waste.
- 0132.3.4 Explore the application of artificial insemination in animal science.
- 0132.3.5 Describe the purposes and procedures of embryo transfer.
- 0132.3.6 Investigate and discuss the application of biotechnology to estrus manipulation.
- 0132.3.7 Explore developments in biotechnology regarding gender selection.

Standard 4: The Application of Biotechnology to Plant Propagation, Growth and Development (0132.S.4)

Students will apply principles of biotechnology to plant production.

Plant Propagation, Growth and Development Objectives

Students will:

- 0132.4.1 Design, conduct, evaluate and revise experiments related to the application of biotechnology to both sexual and asexual plant propagation.

- 0132.4.2 Perform various tissue culturing techniques.
- 0132.4.3 Discuss the stages of plant growth and investigate and analyze alterations in plant growth as a result of biotechnology.
- 0132.4.4 Evaluate the impact of biotechnology on making plants more resistant to insects, diseases and frost.

Standard 5: Laboratory Investigation (0132.S.5)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0132.5.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0132.5.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0132.5.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0132.5.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 6: Ethical Questions Created by Biotechnology (0132.S.6)

Students will demonstrate an understanding of ethical issues associated with biotechnology.

Ethical Questions Created by Biotechnology Objectives

Students will:

- 0132.6.1 Examine ethical questions raised by biotechnology.
- 0132.6.2 Distinguish the difference between fact and opinion.

Standard 7: Leadership Development for the Biotechnology Industry (0132.S.7)

Students will research and debate issues in biotechnology.

Biotechnology Industry Objectives

Students will:

- 0132.7.1 Obtain current information from printed sources and the Internet concerning biotechnology and evaluate for accuracy.
- 0132.7.2 Debate biotechnology issues.

Standard 8: Technology Applications (0132.S.8)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0132.8.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in agricultural biotechnology.
 - Locate, evaluate, and collect information from a variety of sources related to agricultural biotechnology.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0132.8.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0132.8.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to agricultural biotechnology.
- 0132.8.4 Use cameras and/or camcorders to record activities and progress of special projects in the

area of agricultural biotechnology.

Standard 9: Process/Workplace Skills (0132.S.9)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0132.9.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0132.9.2 Explore careers available in agricultural biotechnology.
- 0132.9.3 Use a variety of sources to investigate the educational requirements of various careers in agricultural biotechnology.
- 0132.9.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0132.9.5 Demonstrate correct language usage in all oral and written work.
- 0132.9.6 Perform effectively in both leadership and non-leadership roles.
- 0132.9.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0132.9.8 Participate as a team member to complete a variety of assignments.

Agricultural Cooperative Education

WVEIS Code 0133

This course is designed for seniors in agricultural education classes. Students must be their third or fourth year with satisfactory grades. Students will be placed in an agricultural occupation and will receive wages, credits toward graduation and receive school-release time of a maximum of three hours per day. Students who wish to enroll will need approval from program coordinator. An attendance contract will be required. The contract will be signed by the student, parent/guardian, administrator and program coordinator. This course will give students experience in a potential agricultural career.

Standard 1: Orientation (0133.S.1)

Students will prepare for employment.

Orientation Objectives

Students will:

- 0133.1.1 Determine areas of major interest in agriculture (production, agribusiness, entrepreneurship).
- 0133.1.2 Complete required information sheet and papers for program.
- 0133.1.3 Identify required policies.
- 0133.1.4 Establish experience program record-book procedures.
- 0133.1.5 Establish an appropriate training program and evaluation procedures.

Standard 2: Interpersonal Skill Development (0133.S.2)

Students will develop skills necessary to maintain employment.

Interpersonal Skill Development Objectives

Students will:

- 0133.2.1 Develop an understanding of employer/employee relationships.
- 0133.2.2 Establish job-site ethics.
- 0133.2.3 Describe appropriate dress, etiquette and health habits.
- 0133.2.4 Determine job skills and responsibilities.
- 0133.2.5 Budget time effectively for job completion.
- 0133.2.6 Develop leadership and decision-making skills.
- 0133.2.7 Demonstrate a courteous attitude to customers, employers and fellow employees.
- 0133.2.8 Display willingness to learn new techniques and follow directions.

Standard 3: Job Site Safety Skills (0133.S.3)

Students will demonstrate a safety "attitude."

Job Site Safety Skills Objectives

Students will:

- 0133.3.1 Establish a safe working environment.
- 0133.3.2 Obtain appropriate training from supervisor using acceptable procedures.
- 0133.3.3 Identify procedures for reporting safety violations.
- 0133.3.4 Identify the location of first aid kits, emergency phone numbers and exits.
- 0133.3.5 Demonstrate proper use of equipment.

Standard 4: Career Awareness and Employment Skills (0133.S.4)

Students will develop documents and skills to obtain employment.

Career Awareness and Employment Skills Objectives

Students will:

- 0133.4.1 Identify areas of potential career interests.
- 0133.4.2 Determine contents of job application and complete a letter of application.
- 0133.4.3 Compose an appropriate job resume.
- 0133.4.4 Demonstrate job-interviewing skills.
- 0133.4.5 Identify methods to locate potential jobs.

Standard 5: Technology Applications (0133.S.5)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0133.5.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in agribusiness.
 - Locate, evaluate, and collect information from a variety of sources related to agribusiness.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0133.5.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0133.5.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to agribusiness.
- 0133.5.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of agribusiness.

Standard 6: Process/Workplace Skills in Agribusiness (0133.S.6)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills in Agribusiness Objectives

Students will:

- 0133.6.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0133.6.2 Explore careers available in agribusiness.
- 0133.6.3 Use a variety of sources to investigate the educational requirements of various careers in agribusiness and related sciences.
- 0133.6.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0133.6.5 Demonstrate correct language usage in all oral and written work.
- 0133.6.6 Perform effectively in both leadership and non-leadership roles.
- 0133.6.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0133.6.8 Participate as a team member to complete a variety of assignments.

Standard 7: Lab Investigation (0133.S.7)

Students will safely conduct laboratory investigations and exploratory learning.

Lab Investigation Objectives

Students will:

- 0133.7.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.

- 0133.7.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0133.7.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0133.7.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

*Credit varies according to school-release time for placement. In most cases, the program will involve 2 hours/3 credits.

Agricultural Experience Program

WVEIS Code 0134

Students enrolled in agricultural education courses have the unique opportunity for experiential learning on a grand scale. Students may select and participate in appropriate agricultural enterprises which provide opportunity to acquire skills, earn money and develop responsibility while also earning high school credit. This course code provides county school systems the vehicle whereby credit can be awarded for such individual student agricultural experiences occurring as an outgrowth from other agricultural education courses.

Standard 1: Selecting Supervised Agricultural Experience Program (0134.S.1)

Students will identify and investigate appropriate enterprises for SAE.

Supervised Agricultural Experience Program (SAE) Objectives

Students will:

- 0134.1.1 Define and explain the meaning and purpose of SAE.
- 0134.1.2 Complete a personal interest and resource inventory to identify an appropriate potential SAE.
- 0134.1.3 Explore and become engaged in appropriate agricultural enterprises through placement and/or entrepreneurship.

Standard 2: Maintaining Supervised Agricultural Experience Program Records (0134.S.2)

Students will accurately maintain SAE records.

Supervised Agricultural Experience Program Records Objectives

Students will:

- 0134.2.1 Explain the types of records utilized in agricultural enterprises.
- 0134.2.2 Define and demonstrate the use of net worth statements, inventories, income and expense logs and other pertinent financial records.
- 0134.2.3 Maintain neat and accurate records for individual SAEs.

Standard 3: Evaluating and Improving Supervised Agriculture Experience Program (0134.S.3)

Students will summarize and evaluate progress in individual SAEs.

Evaluating and Improving Supervised Agriculture Experience Program Objectives

Students will:

- 0134.3.1 Summarize financial records to determine net income from the SAE.
- 0134.3.2 Calculate efficiency factors related to individual SAEs.
- 0134.3.3 Explore opportunities for SAE expansion and/or improvement.
- 0134.3.4 Research and examine career opportunities related to individual SAEs.

Agriscience 11

WVEIS Code 0135

This area of agriscience is designed to provide students with knowledge, skills and competencies needed to enter various occupations in agriculture and natural resources. Topics covered in agriscience are animal science, plant science, agricultural mechanics, microcomputer applications, and leadership and supervised agricultural experience programs. The program combines knowledge and skills with experiential learning and FFA for a total program effect.

Standard 1: Agricultural Buildings And Equipment (0135.S.1)

Students will apply agricultural mechanical skills in solving agriscience problems.

Agricultural Buildings and Equipment Objectives

Students will:

- 0135.1.1 Compare and contrast fencing systems, materials, tools and management practices.
- 0135.1.2 Analyze and discuss types of agricultural buildings and related construction.
- 0135.1.3 Interpret agricultural equipment service manuals and maintenance schedules.
- 0135.1.4 Perform basic transit procedures.

Standard 2: Pesticide Safety and Management (0135.S.2)

Students will describe basic pesticide safety.

Pesticide Safety and Management Objectives

Students will:

- 0135.2.1 Investigate and discuss pesticide types and pest control.
- 0135.2.2 Examine control methods, chemical formulation and equipment used to control pests in the greenhouse.
- 0135.2.3 Identify information on a pesticide label.
- 0135.2.4 Explore the safe handling and disposal of pesticides.
- 0135.2.5 Identify and perform the steps in calibrating a sprayer.
- 0135.2.6 Research integrated pest management.

Standard 3: Health and Care of Farm Related Animals (0135.S.3)

Students will explain how to maintain animal health.

Health and Care of Farm Related Animals Objectives

Students will:

- 0135.3.1 Investigate and discuss the symptoms of unhealthy animals.
- 0135.3.2 Identify and diagnose symptoms of disease and parasites.
- 0135.3.3 Analyze the treatment and prevention of animal disease.
- 0135.3.4 Utilize techniques in administering medicine and immunizing.
- 0135.3.5 Examine the treatment and prevention of animal parasites.
- 0135.3.6 Identify and illustrate the methods for administering medicines to animals.
- 0135.3.7 Design and utilize a herd health program.
- 0135.3.8 Differentiate between animal welfare and animal rights.

Standard 4: Work-based Experiential Programs (Supervised Agricultural Experience Programs) (0135.S.4)

Students will conduct work-based experience programs.

Work-based Experiential Programs Objectives

Students will:

- 0135.4.1 Complete and summarize record book enterprises related to students Supervised Agricultural

- Experience Program.
0135.4.2 Calculate efficiency factors related to students Supervised Agricultural Experience Program.

Standard 5: Managing Farm Woodlots (0135.S.5)

Students will describe farm woodlot management.

Managing Farm Woodlots Objectives

Students will:

- 0135.5.1 Compare and contrast the methods of identifying trees.
- 0135.5.2 Identify trees common to West Virginia.
- 0135.5.3 Evaluate major forest type and primary uses.
- 0135.5.4 Measure tree height and diameter.
- 0135.5.5 Identify and utilize units of measurement (mile, rod, chain & acre).
- 0135.5.6 Calculate the number of acres in a timber tract.
- 0135.5.7 Examine the habitat necessary for wildlife.

Standard 6: Laboratory Investigations/Hands-on Learning (0135.S.6)

Students will safely conduct laboratory investigation and exploratory learning.

Laboratory Investigations/hands-on Learning Objectives

Students will:

- 0135.6.1 Engage in active inquiries, investigations, and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills.
- 0135.6.2 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0135.6.3 Conduct explorations in a variety of environments (e.g., laboratories and outdoor locations).
- 0135.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laserdiscs) to collect, analyze and/or report data, interact with simulations, and research.

Standard 7: Leadership Development in Agriscience (0135.S.7)

Students will display leadership skills in Agriscience

Leadership Development in Agriscience Objectives

Students will:

- 0135.7.1 Conduct meetings using parliamentary law.
- 0135.7.2 Serve as a small group team leader.
- 0135.7.3 Present prepared and extemporaneous speeches on issues affecting agriscience.
- 0135.7.4 Engage in committees and leadership development activities.
- 0135.7.5 Model and exhibit community service.

Standard 8: Principles of Safety (0135.S.8)

Students will demonstrate principles of safety.

Principles of Safety Objectives

Students will:

- 0135.8.1 Wear appropriate protective gear.
- 0135.8.2 Maintain a safe working environment.
- 0135.8.3 Identify and engage in safety practices on the farm and in the work place.

Standard 9: Technology Applications (0135.S.9)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0135.9.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in agriscience.
 - Locate, evaluate, and collect information from a variety of sources related to agriscience.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0135.9.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0135.9.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to agriscience.
- 0135.9.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of agriscience.

Standard 10: Process/Workplace Skills (0135.S.10)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0135.10.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0135.10.2 Explore careers available in agriscience.
- 0135.10.3 Use a variety of sources to investigate the educational requirements of various careers in agriscience.
- 0135.10.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0135.10.5 Demonstrate correct language usage in all oral and written work.
- 0135.10.6 Perform effectively in both leadership and non-leadership roles.
- 0135.10.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0135.10.8 Participate as a team member to complete a variety of assignments.

Agriscience 12

WVEIS Code 0136

The area of agriscience is designed to provide students with knowledge, skills and competencies needed to enter various occupations in agriculture and natural resources. Topics covered in agriscience are animal science, plant science, agricultural mechanics, microcomputer applications, leadership and supervised agricultural experience programs. The program combines knowledge and skills with experiential learning and FFA for a total program effect.

Standard 1: Applying Agriculture Mechanic Skills (0136.S.1)

Students will apply agriculture mechanic skills in solving problems in agriscience.

Applying Agriculture Mechanic Skills Objectives

Students will:

- 0136.1.1 Tune-up and perform maintenance procedures on agricultural engine driven machines.
- 0136.1.2 Perform basic electrical wiring skills.
- 0136.1.3 Adjust and maintain hay equipment.
- 0136.1.4 Form, mix, pour and finish concrete.

Standard 2: Land Use Capabilities and Soil Conservation (0136.S.2)

Students will demonstrate land use capabilities and soil conservation in agriscience.

Land Use Capabilities and Soil Conservation Objectives

Students will:

- 0136.2.1 Evaluate and classify soils according to land use factors.
- 0136.2.2 Define and determine physical properties of soil.
- 0136.2.3 Recommend land use and soil conservation practices.
- 0136.2.4 Test soil and analyze fertility recommendations.
- 0136.2.5 Explain the function and management of soil pH.
- 0136.2.6 Describe the process of soil testing.
- 0136.2.7 Interpret and apply data generated by soil testing.

Standard 3: Landscape Design and Turfgrass Management (0136.S.3)

Students will engage in activities in landscape design and turfgrass management.

Landscape Design and Turfgrass Management Objectives

Students will:

- 0136.3.1 Identify turfgrass species, purposes and desired locations.
- 0136.3.2 Explain steps for turfgrass establishment.
- 0136.3.3 Calculate fertilizer application rates.
- 0136.3.4 Identify common turf insects, weeds, diseases and biological control.
- 0136.3.5 Identify ornamental tree and shrubs.
- 0136.3.6 Select trees and shrubs for appropriate landscape use.
- 0136.3.7 Install and maintain landscape plant materials.

Standard 4: Animal Reproduction (0136.S.4)

Students will display a working knowledge of animal reproduction.

Animal Reproduction Objectives

Students will:

- 0136.4.1 Describe genetic principles of animal breeding.
- 0136.4.2 Identify parts of the male and female reproductive tracts.
- 0136.4.3 Explain the estrus cycle and gestation period of farm animals.

- 0136.4.4 Describe techniques of artificial insemination, embryo transplant and pregnancy testing.
- 0136.4.5 Select breeding stock using performance test data.
- 0136.4.6 Identify biotechnology implications for animal production.

Standard 5: Farm and Agribusiness Financing (0136.S.5)

Students will engage in activities to augment the understanding of farm and agribusiness financing.

Farm and Agribusiness Financing Objectives

Students will:

- 0136.5.1 Describe the economic principles of supply and demand.
- 0136.5.2 Identify sources of credit.
- 0136.5.3 Calculate simple interest on a loan.
- 0136.5.4 Explain income tax requirements.
- 0136.5.5 Identify the functions of government agricultural agencies and programs.
- 0136.5.6 Describe the steps in planning an agribusiness.

Standard 6: Employment Skills (0136.S.6)

Students will conduct activities designed to enhance employment skills.

Employment Skills Objectives

Students will:

- 0136.6.1 Identify personal traits necessary to secure and maintain a job.
- 0136.6.2 Initiate a job search.
- 0136.6.3 Develop a resume.
- 0136.6.4 Complete a job application.
- 0136.6.5 Participate in simulated job interviews.

Standard 7: Work Based Experience (0136.S.7)

Students will conduct activities designed to enhance employment skills.

Work Based Experience Objectives

Students will:

- 0136.7.1 Complete and summarize record book enterprises related to students supervised agricultural experience program.
- 0136.7.2 Calculate efficiency factors related to students supervised agricultural experience program.

Standard 8: Computer Application (0136.S.8)

Students will engage in computer applications in agriscience.

Computer Application Objectives

Students will:

- 0136.8.1 Use computer resources to solve problems related to work-based experience programs.

Standard 9: Leadership in Agriscience (0136.S.9)

Students will develop leadership skills in agriscience.

Leadership in Agriscience Objectives

Students will:

- 0136.9.1 Conduct meetings using parliamentary law.
- 0136.9.2 Serve as a small group team leader.
- 0136.9.3 Present prepared and extemporaneous speeches on issues affecting agriscience.
- 0136.9.4 Participate in committee and leadership development activities.

0136.9.5 Participate in community services.

Standard 10: Safety (0136.S.10)

Students will demonstrate principles of safety.

Safety Objectives

Students will:

0136.9.1 Wear appropriate protective gear.

0136.9.2 Maintain a safe working environment.

0136.9.3 Identify safety practices on the farm and in the work place.

Animal And Veterinary Science – Large Animals WVEIS Code 0137

This course is designed to give students advanced knowledge of veterinary science, which includes the study of large farm animals (horses, cattle, sheep, goats and swine). This course will provide an understanding of breeds, animal health, nutrition, anatomy and physiology, training, economic and marketing principles and related employment skills. Students will develop a thorough knowledge of large animals and their management in health care related to technician and veterinarian skills.

Standard 1: Leadership (0137.S.1)

Students will participate in activities to develop leadership in animal and veterinary science.

Leadership Objectives

Students will:

- 0137.1.1 Participate in committee and leadership development activities associated with FFA.
- 0137.1.2 Complete and summarize records of SAE Program and health program on individual animals.
- 0137.1.3 Shadow appropriate career opportunities in Veterinary Medicine.
- 0137.1.4 Initiate a job search and complete application for entry into college level programs in Veterinary Science.
- 0137.1.5 Develop communication skills through prepared and extemporaneous speaking.

Standard 2: History And Selection of Farm Animals (0137.S.2)

Students will examine the history and selection of farm animals.

History and Selection of Farm Animals Objectives

Students will:

- 0137.2.1 Trace the history of domestic farm animals and relate it to human and animal health.
- 0137.2.2 Classify farm animals according to purposes/use.
- 0137.2.3 Identify breeds of large animals (horses, cattle, sheep, goats, swine).
- 0137.2.4 Relate the characteristics of breeds to methods of selection.

Standard 3: Handling and Restraint (0137.S.3)

Students will demonstrate safe methods for handling and restraining farm animals.

Handling and Restraint Objectives

Students will:

- 0137.3.1 Identify and use tools related to handling and restraint of large animals.
- 0137.3.2 Demonstrate methods of techniques used in restraint of large animals.
- 0137.3.3 Utilize basic commands and animal behavior methods to control animals.
- 0137.3.4 Utilize safety practices when handling and caring for animals.

Standard 4: Grooming and Clipping (0137.S.4)

Students will demonstrate safe grooming and clipping procedures.

Grooming and Clipping Objectives

Students will:

- 0137.4.1 Utilize safety practices in grooming and clipping large animals.
- 0137.4.2 Identify and utilize tools pertinent to the grooming, brushing and bathing of large animals.
- 0137.4.3 Demonstrate the ability to follow post-operative care and management of animals.

Standard 5: Anatomy and Physiology (0137.S.5)

Students will describe anatomy and physiology.

Anatomy and Physiology Objectives

Students will:

- 0137.5.1 Identify the major parts and examine the functions of the skeletal system.
- 0137.5.2 Identify the major parts and examine the functions of the muscular system.
- 0137.5.3 Identify the major parts and examine the functions of the nervous system.
- 0137.5.4 Identify the major parts and examine the functions of the endocrine system.
- 0137.5.5 Identify the major parts and examine the functions of the respiratory system.
- 0137.5.6 Identify the major parts and examine the functions of the circulatory system.
- 0137.5.7 Identify the major parts and examine the functions of the reproductive system.
- 0137.5.8 Identify the major parts and examine the functions of the excretory system.
- 0137.5.9 Identify the major parts and examine the functions of the digestive system.
- 0137.5.10 Compare and contrast ruminant and monogastric systems.
- 0137.5.11 Investigate the functions of other small animal digestive systems (avian, rabbits, reptiles).

Standard 6: Animal Health and Management (0137.S.6)

Students will display a working knowledge of managing animal health.

Animal Health and Management Objectives

Students will:

- 0137.6.1 Determine the type of care and housing facilities needed for large animals.
- 0137.6.2 Examine mechanical injury and perform basic first aid requirements for large farm animals.
- 0137.6.3 Identify signs/symptoms of disease, as well as prevention and treatment of large animals.
- 0137.6.4 Utilize techniques in administering medicine and immunizing large farm animals.
- 0137.6.5 Understand veterinarian hospital design, procedures and care of equipment and supplies used with a large farm animal.
- 0137.6.6 Recognize relationships between owner, animal and veterinarian to maintain a healthy client relationship.

Standard 7: Laboratory Investigation (0137.S.7)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0137.7.1 Engage in active inquiries, investigations and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills.
- 0137.7.2 Properly and safely manipulate equipment, materials, chemicals, organisms and models.
- 0137.7.3 Conduct explorations in a variety of environments (e.g., laboratories and outdoor locations).
- 0137.7.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laserdiscs) to collect, analyze and/or report data, interact with simulations, and research.
- 0137.7.5 Recognize the value of laboratory procedures in evaluating the functions of organs to assist in disease diagnosis of large animals.
- 0137.7.6 Utilize and care for diagnostic testing equipment and supplies used in a veterinarian clinic and field operations.
- 0137.7.7 Collect laboratory samples and interpret test results to diagnose animal health.

Standard 8: Nutrition (0137.S.8)

Students will describe animal nutrition.

Nutrition Objectives

Students will:

- 0137.8.1 Define, discuss and utilize terms associated with large animal nutrition.
- 0137.8.2 List and describe the basic nutrients and their functions.
- 0137.8.3 Analyze feed labels and determine the nutritional value of feeds and feedstuffs.
- 0137.8.4 Recognize signs of nutritional deficiencies.
- 0137.8.5 Analyze feeding and care requirements for maintaining pregnancy of large animals.

Standard 9: Marketing

Student will research regulations impacting animal care business.

Marketing Objectives

Students will:

- 0137.9.1 Record data and complete information required by law and regulations in the management of large animals.
- 0137.9.2 Calculate and analyze cost of owning and operating a large animal health clinic.

Standard 10: Technology Applications (0137.S.10)

Student will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0137.10.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in animal science.
 - Locate, evaluate, and collect information from a variety of sources related to animal science.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0137.10.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics, and telecommunications.
- 0137.10.3 Use TV/satellite, VCR and Laserdiscs/DVD to retrieve information to complete assignments related to animal science.
- 0137.10.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of animal science.

Standard 11: Process/Workplace Skills and Animal Science (0137.S.11)

Student will demonstrate personal and group workplace skills.

Process/Workplace Skills and Animal Science Objectives

Students will:

- 0137.11.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0137.11.2 Explore careers available in animal science.
- 0137.11.3 Use a variety of sources to investigate the educational requirements of various careers in animal science and related sciences.
- 0137.11.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0137.11.5 Demonstrate correct language usage in all oral and written work.
- 0137.11.6 Perform effectively in both leadership and non-leadership roles.
- 0137.11.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0137.11.8 Participate as a team member to complete a variety of assignments.

Animal And Veterinary Science – Small Animals WVEIS Code 0138

This agricultural science course is designed to give students a working knowledge of veterinary science through the study of many animals including dogs, cats, birds, reptiles and other pets. This course will provide an understanding of breeds, animal health, nutrition, training, anatomy and physiology, grooming, economic and marketing principles and related employment skills. Students will develop a thorough knowledge of animals along with their management in health care related to technician and veterinarian skills.

Standard 1: Leadership (0138.S.1)

Students will become involved in activities to develop leadership in animal and veterinary science.

Leadership Objectives

Students will:

- 0138.1.1 Demonstrate an awareness of FFA and its components.
- 0138.1.2 Utilize record-keeping skills in work-based experience programs.
- 0138.1.3 Research appropriate career opportunities in veterinary medicine.
- 0138.1.4 Draft a resume, fill out a job application, demonstrate job seek/keep and computer skills.
- 0138.1.5 Develop and exhibit personal relation and communication skills.
- 0138.1.6 Demonstrate an awareness of employment and animal welfare ethics.

Standard 2: History and Selection of Small Animals (0138.S.2)

Students will examine the history and selection of small animals.

History and Selection of Small Animals Objectives

Students will:

- 0138.2.1 Trace the history of domestic animals and relate it to human and animal health.
- 0138.2.2 Classify small animals according to purposes/use.
- 0138.2.3 Identify breeds of small animals (dogs, cats, birds, reptiles, etc.).
- 0138.2.4 Examine the characteristics of small animals and incorporate into laboratory experimentation and disease evaluation.

Standard 3: Handling and Restraint (0138.S.3)

Students will demonstrate safe methods for handling and restraining small animals.

Handling and Restraint Objectives

Students will:

- 0138.3.1 Identify and use tools related to handling and restraint of small animals.
- 0138.3.2 Demonstrate methods and techniques used in restraint of small animals.
- 0138.3.3 Develop a basic understanding of animal behavior.
- 0138.3.4 Demonstrate the ability to follow post-operative care and management of animals.
- 0138.3.5 Utilize safety practices when handling and caring for animals.

Standard 4: Grooming and Clipping (0138.S.4)

Students will demonstrate safe grooming and clipping procedures.

Grooming and Clipping Objectives

Students will:

- 0138.4.1 Utilize safety practices in grooming and clipping small animals.
- 0138.4.2 Identify and use animal grooming tools.
- 0138.4.3 Demonstrate an awareness of grooming practices (bathing, clipping, nail trimming, combing/brushing).

0138.4.4 Use proper care in applying topical medications.

Standard 5: Anatomy and Physiology (0138.S.5)

Students will describe anatomy and physiology.

Anatomy and Physiology Objectives

Students will:

- 0138.5.1 Identify the major parts and examine the functions of the skeletal system.
- 0138.5.2 Identify the major parts and examine the functions of the muscular system.
- 0138.5.3 Identify the major parts and examine the functions of the nervous system.
- 0138.5.4 Identify the major parts and examine the functions of the endocrine system.
- 0138.5.5 Identify the major parts and examine the functions of the respiratory system.
- 0138.5.6 Identify the major parts and examine the functions of the circulatory system.
- 0138.5.7 Identify the major parts and examine the functions of the reproductive system.
- 0138.5.8 Identify the major parts and examine the functions of the excretory system.
- 0138.5.9 Identify the major parts and examine the functions of the digestive system.
- 0138.5.10 Compare and contrast ruminant and monogastric systems.
- 0138.5.11 Investigate the functions of other small animal digestive systems (avian, rabbits, reptiles).

Standard 6: Animal Health and Management (0138.S.6)

Students will describe the principles of managing animal health.

Animal Health and Management Objectives

Students will:

- 0138.6.1 Determine the type of care and housing facilities needed.
- 0138.6.2 Examine mechanical injury and perform basic first aid.
- 0138.6.3 Identify signs/symptoms of disease, as well as prevention and treatment.
- 0138.6.4 Utilize techniques in administering medicine and immunizing.
- 0138.6.5 Understand veterinarian hospital design, procedures and care of equipment and supplies.
- 0138.6.6 Recognize relationship between owner, animal and veterinarian to maintain a healthy client relationship.

Standard 7: Laboratory Investigation (0138.S.7)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0138.7.1 Engage in active inquiries, investigations and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills.
- 0138.7.2 Properly and safely manipulate equipment, materials, chemicals, organisms and models.
- 0138.7.3 Conduct explorations in a variety of environments (e.g., laboratories and outdoor locations).
- 0138.7.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laserdiscs) to collect, analyze and/or report data, interact with simulations, and research.
- 0138.7.5 Recognize the value of laboratory procedures in evaluating the functions of organs to assist in disease diagnosis.
- 0138.7.6 Utilize and care for diagnostic testing equipment and supplies used in a veterinarian clinic.
- 0138.7.7 Collect laboratory samples and interpret test results to diagnose animal health.

Standard 8: Nutrition (0138.S.8)

Students will describe animal nutrition.

Nutrition Objectives

Students will:

- 0138.8.1 Define, discuss and utilize terms associated with nutrition.
- 0138.8.2 List and describe the basic nutrients and their functions.
- 0138.8.3 Analyze pet food labels and determine the nutritional value of feeds and feedstuffs.
- 0138.8.4 Recognize signs of nutritional deficiencies.
- 0138.8.5 Analyze feeding and care requirements throughout life cycle and pregnancy.

Standard 9: Marketing (0138.S.9)

Student will research regulations impacting animal care business.

Marketing Objectives

Students will:

- 0138.9.1 Research types of laws, regulations and licenses as needed in a veterinarian clinic.
- 0138.9.2 Calculate and analyze costs of owning and operating an animal care business.

Standard 10: Technology Applications (0138.S.10)

Student will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0138.10.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in animal science.
 - Locate, evaluate, and collect information from a variety of sources related to animal science.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0138.10.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics, and telecommunications.
- 0138.10.3 Use TV/satellite, VCR and Laserdiscs/DVD to retrieve information to complete assignments related to animal science.
- 0138.10.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of animal science.

Standard 11: Process/Workplace Skills and Animal Science (0138.S.11)

Student will demonstrate personal and group workplace skills.

Process/Workplace Skills and Animal Science Objectives

Students will:

- 0138.11.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0138.11.2 Explore careers available in animal science.
- 0138.11.3 Use a variety of sources to investigate the educational requirements of various careers in animal science and related sciences.
- 0138.11.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0138.11.5 Demonstrate correct language usage in all oral and written work.
- 0138.11.6 Perform effectively in both leadership and non-leadership roles.
- 0138.11.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0138.11.8 Participate as a team member to complete a variety of assignments.

Animal Processing

WVEIS Code 0139

This course is designed to provide students with basic knowledge and skills in meat processing occupations. Students will be able to exhibit these skills in the areas of sanitation and safety, slaughtering, processing and retailing, job seek/keep skills and microcomputer applications.

Standard 1: Leadership (0139.S.1)

Students will demonstrate skills necessary to be employed.

Leadership Objectives

Students will:

- 0139.1.1 Participate in FFA activities.
- 0139.1.2 Write, deliver and evaluate a speech and/or oral presentation.
- 0139.1.3 Explore careers in processing.
- 0139.1.4 Determine appropriate job seek/keep skills.
- 0139.1.5 Demonstrate knowledge of ethical conduct in the workplace.

Standard 2: Sanitation/Safety (0139.S.2)

Students will safely handle meat products.

Sanitation/Safety Objectives

Students will:

- 0139.2.1 List USDA sanitary practices relating to personal hygiene, sanitization of equipment and maintenance of facilities.
- 0139.2.2 Explain safe methods of handling tools, equipment and livestock in processing and slaughtering.
- 0139.2.3 Identify proper temperatures and time periods for storage and handling of fresh and frozen meat and meat products.
- 0139.2.4 Identify proper storage and handling techniques for consumables and by-products.

Standard 3: Slaughtering (0139.S.3)

Students will demonstrate slaughtering procedures.

Slaughtering Objectives

Students will:

- 0139.3.1 List common breeds, USDA classes and grades of live cattle, sheep and swine.
- 0139.3.2 Demonstrate how to yield and quality grade hanging carcasses.
- 0139.3.3 Describe humane processes for stunning and bleeding animals.
- 0139.3.4 Properly skin, eviscerate and split carcasses of cattle.
- 0139.3.5 Skin or scald and scrape, eviscerate and split pork carcasses.
- 0139.3.6 Skin, fist and eviscerate lamb and mutton carcasses.
- 0139.3.7 Compute dressing percentage, percent shrink, return on offal and slaughter cost.
- 0139.3.8 Properly weigh and mark carcasses.

Standard 4: Processing (0139.S.4)

Students will prepare retail meat products.

Processing Objectives

Students will:

- 0139.4.1 Identify primal cuts of beef, pork and lamb.

- 0139.4.2 Break carcasses into primal cuts.
- 0139.4.3 Identify retail cuts of beef, pork and lamb.
- 0139.4.4 Identify common boneless cuts of boxed beef and pork.
- 0139.4.5 Cut primal cuts and boxed products into various retail cuts.
- 0139.4.6 List methods of value added processing (grinding, curing, smoking, pre-cooking) and packaging of beef pork and lamb

Standard 5: Retailing (0139.S.5)

Students will utilize merchandise product for customers.

Retailing Objectives

Students will:

- 0139.5.1 Prepare attractive displays of meat and meat products.
- 0139.5.2 Demonstrate knowledge and skills in customer relations.
- 0139.5.3 Exhibit an understanding of retail value; trim loss, shelf life and seasonal demand as related to pricing of products.

Standard 6: Technology Applications (0139.S.6)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0139.6.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in animal processing.
 - Locate, evaluate, and collect information from a variety of sources related to animal processing.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0139.6.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0139.6.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to animal processing.
- 0139.6.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of animal processing.

Standard 7: Process/Workplace Skills (0139.S.7)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0139.7.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0139.7.2 Explore careers available in animal processing.
- 0139.7.3 Use a variety of sources to investigate the educational requirements of various careers in agribusiness and related sciences.
- 0139.7.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0139.7.5 Demonstrate correct language usage in all oral and written work.
- 0139.7.6 Perform effectively in both leadership and non-leadership roles.
- 0139.7.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0139.7.8 Participate as a team member to complete a variety of assignments.

Standard 8: Laboratory Investigation (0139.S.8)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0139.8.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0139.8.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0139.8.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0139.8.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Animal Science And Production

WVEIS Code 0140

This agriculture science course is designed to give students a working knowledge of the commercial livestock industry, which includes beef, sheep, swine, horses, goats, dairy and poultry. The course provides an understanding of breeds, animal health, animal nutrition, anatomy and physiology, selection, and economic and marketing principles related to employment. Students will develop a working knowledge of land use and livestock production to maintain an economical level of production. Upon completion of this course students will have the skills needed for an entry-level position or entrance into a degree program.

Standard 1: Leadership (0140.S.1)

Students will develop leadership skills.

Leadership Objectives

Students will:

- 0140.1.1 Describe FFA and its components.
- 0140.1.2 Utilize record-keeping skills in work-based experience programs (SAE).
- 0140.1.3 Identify careers in the animal industry.
- 0140.1.4 Identify employability skills.
- 0140.1.5 Develop personal relation and communication skills.
- 0140.1.6 Describe employment and animal welfare ethics.

Standard 2: History and Selection of Animals (0140.S.2)

Students will provide background information and describe characteristics of animals.

History and Selection of Animals Objectives

Students will:

- 0140.2.1 Relate the history of domestic animals to modern animal production.
- 0140.2.2 Describe and classify small animals according to purpose/use.
- 0140.2.3 Identify breeds of animals.
- 0140.2.4 Relate the characteristics of breeds to methods of selection (beef, sheep, swine, horses, goats, dairy and poultry).

Standard 3: Handling and Restraint (0140.S.3)

Students will demonstrate safe handling and restraining techniques.

Handling and Restraint Objectives

Students will:

- 0140.3.1 Identify and use tools related to handling/restraint of animals.
- 0140.3.2 Identify methods and techniques used in modern husbandry practices.
- 0140.3.3 Describe techniques in grooming and showing livestock.
- 0140.3.4 Describe safety practices for managing and handling livestock.

Standard 4: Animal Health and Management (0140.S.4)

Students will demonstrate animal health and management skills.

Animal Health and Management Objectives

Students will:

- 0140.4.1 Determine the type of care and housing facilities needed for livestock.
- 0140.4.2 Describe mechanical injury and treatment requirements.
- 0140.4.3 Identify signs/symptoms of disease and parasites, as well as prevention and treatment.
- 0140.4.4 Utilize techniques in administering medicine and immunizing.

0140.4.5 Design and utilize a herd health program in livestock production.

Standard 5: Anatomy and Physiology (0140.S.5)

Students will utilize the fundamentals of anatomy and physiology in the commercial production of livestock.

Anatomy and Physiology Objectives

Students will:

- 0140.5.1 Identify the major parts and functions of the anatomy of various types of livestock.
- 0140.5.2 Identify the major parts and functions of the digestive system.
- 0140.5.3 Identify the major parts and functions of the reproductive system.
- 0140.5.4 Identify the functions of the skeletal, muscular, nervous, hormonal, respiratory, circulatory and excretory system as they relate to livestock management.
- 0140.5.5 Identify and explain modern livestock breeding techniques.
- 0140.5.6 Analyze and explain data utilizing genotypic information to form a superior livestock program.

Standard 6: Nutrition (0140.S.6)

Students will describe the role of nutrition in animal production.

Nutrition Objectives

Students will:

- 0140.6.1 Define terms associated with nutrition.
- 0140.6.2 List and describe the basic nutrients and their functions.
- 0140.6.3 Balance rations and determine the nutritional value of feeds and feedstuffs.
- 0140.6.4 Identify signs of nutritional deficiencies.
- 0140.6.5 Identify feeding and care requirements throughout life cycle and pregnancy of livestock.
- 0140.6.6 Identify and design various forage management programs for economical livestock production

Standard 7: Marketing (0140.S.7)

Students will demonstrate competencies in marketing livestock.

Marketing Objectives

Students will:

- 0140.7.1 Research and study various livestock marketing techniques.
- 0140.7.2 Identify transportation and safety methods for livestock handling.
- 0140.7.3 Research types of laws, regulations and licenses needed for modern livestock sales.
- 0140.7.4 Analyze costs of owning and operating a livestock business.

Standard 8: Technology Applications (0140.S.8)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0140.8.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in animal science and production.
 - Locate, evaluate, and collect information from a variety of sources related to animal science and production.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0140.8.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.

- 0140.8.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to animal science and production.
- 0140.8.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of animal science and production.

Standard 9: Process/Workplace Skills (0140.S.9)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0140.9.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0140.9.2 Explore careers available in animal science.
- 0140.9.3 Use a variety of sources to investigate the educational requirements of various careers in animal and science production.
- 0140.9.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0140.9.5 Demonstrate correct language usage in all oral and written work.
- 0140.9.6 Perform effectively in both leadership and non-leadership roles.
- 0140.9.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0140.9.8 Participate as a team member to complete a variety of assignments.

Standard 10: Laboratory Investigation (0140.10)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0140.10.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0140.10.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0140.10.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0140.10.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Aquaculture

WVEIS Code 0141

This course of study is designed to provide experiential knowledge, skills and entrepreneurial competencies needed to enter various occupations in aquaculture and other scientific fields within aquaculture. This course integrates curricula of biology, physics, earth science and chemistry in producing aquatic species.

Standard 1: Orientation to the Aquaculture Industry (0141.S.1)

Students will examine the role of aquaculture in state, national and international economies.

Aquaculture Industry Objectives

Students will:

- 0141.1.1 Explore the role of aquaculture in the past, present and future.
- 0141.1.2 Relate the importance of aquaculture to state, national, and international economies.
- 0141.1.3 Examine employment trends and cycles related to aquaculture.

Standard 2: Leadership Development in Aquaculture (0141.S.2)

Students will participate in activities to develop leadership in the aquaculture industry.

Leadership Development in Aquaculture Objectives

Students will:

- 0141.2.1 Present prepared and extemporaneous speeches on issues concerning the aquaculture industry.
- 0141.2.2 Participate in community service.
- 0141.2.3 Demonstrate problem solving and decision making skills.
- 0141.2.4 Conduct meetings using parliamentary law.

Standard 3: Production Systems in Aquaculture (0141.S.3)

Students will design, establish and maintain aquaculture systems.

Production Systems in Aquaculture Objectives

Students will:

- 0141.3.1 Identify components of an aquaculture system and calculate water volumes, flow rates, solubility, density, etc.
- 0141.3.2 Research appropriate species for closed and flow-through systems.
- 0141.3.3 Explain basic animal management requirements for warm and cold-water species.
- 0141.3.4 Investigate and discuss factors that influence site selection.
- 0141.3.5 Using a bill of materials, design and/or construct a closed system.

Standard 4: Developing Work-based Experiential Programs (Supervised Agricultural Experience Programs) in Aquaculture (0141.S.4)

Students will explore entrepreneurial and employment opportunities in aquaculture.

Aquaculture Objectives

Students will:

- 0141.4.1 Define and explain the different supervised experience programs that are available in aquaculture.
- 0141.4.2 Prepare a business plan for implementation.
- 0141.4.3 Explore careers associated within the aquaculture industry.
- 0141.4.4 Create and demonstrate the key aspects of a marketing plan.
- 0141.4.5 Demonstrate different ways a fish can be processed.

Standard 5: Anatomy and Physiology (0141.S.5)

Students will identify and explain functions and disorders of body systems in aquatic species.

Anatomy and Physiology Objectives

Students will:

- 0141.5.1 Identify and explain the functions of body systems in aquatic species.
- 0141.5.2 Explain the process of spawning.
- 0141.5.3 Distinguish common fish health problems in closed systems.
- 0141.5.4 Investigate the role of breeding and selection in genetic improvement.

Standard 6: Nutrition (0141.S.6)

Students will describe nutrition affecting aquatic species.

Nutrition Objectives

Students will:

- 0141.6.1 Identify and compare common types of feed.
- 0141.6.2 Calculate feed rates.
- 0141.6.3 Calculate feed conversion.
- 0141.6.4 Calculate feed efficiency.
- 0141.6.5 Describe the nutritional needs of fish at different stages of growth.

Standard 7: Water Chemistry and its Relationship to Aquaculture (0141.S.7)

Students will perform water quality procedures and relate results to performance of aquatic species.

Water Chemistry Objectives

Students will:

- 0141.7.1 Explain water quality parameters - pH, Oxygen level, nitrates, nitrites, etc.
- 0141.7.2 Demonstrate sampling and testing techniques.
- 0141.7.3 Design a wastewater management system.

Standard 8: Safety in Aquaculture Laboratories (0141.S.8)

Students will demonstrate principles of safety in aquaculture.

Aquaculture Laboratories Objectives

Students will:

- 0141.8.1 Maintain a safe working environment in the aquaculture laboratory.
- 0141.8.2 Demonstrate and apply laboratory safety in aquaculture settings.

Standard 9: Laboratory Practices and Procedures/Hands-on Learning (0141.S.9)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Practices and Procedures Objectives

Students will:

- 0141.9.1 Engage in active inquiries, investigations and hands-on activities for a minimum of 50 percent of the instructional time to develop conceptual understanding and laboratory skills.
- 0141.9.2 Properly and safely manipulate equipment, materials, chemicals, organisms and models.
- 0141.9.3 Conduct explorations in a variety of environments (e.g., laboratories and outdoor locations).
- 0141.9.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laserdiscs) to collect, analyze and/or report data, interact with simulations, and research.

Standard 10: Technology Applications in Aquaculture (0141.S.10)

Students will apply technology to investigate real-world problems.

Technology Applications in Aquaculture Objectives

Students will:

- 0141.10.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in aquaculture.
 - Locate, evaluate, and collect information from a variety of sources related to aquaculture.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0141.10.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics, and telecommunications.
- 0141.10.3 Use TV/satellite, VCR and Laserdiscs/DVD to retrieve information to complete assignments related to aquaculture.
- 0141.10.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of aquaculture.

Standard 11: Process/workplace Skills and Aquaculture (0141.S.11)

Students will demonstrate personal and group workplace skills.

Workplace Skills Objectives

Students will:

- 0141.11.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0141.11.2 Explore careers available in aquaculture.
- 0141.11.3 Use a variety of sources to investigate the educational requirements of various careers in aquaculture and related sciences.
- 0141.11.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0141.11.5 Demonstrate correct language usage in all oral and written work.
- 0141.11.6 Perform effectively in both leadership and non-leadership roles.
- 0141.11.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0141.11.8 Participate as a team member to complete a variety of assignments.

Computers In Agriculture

WVEIS Code 0142

This course is designed to expose students to computer programming, software and applications and graphical and electronic information technology as it relates to the agriculture industry. Students will be able to utilize computers and related technology in desktop publishing, record-keeping, agricultural production, agribusiness and telecommunications. Students will also relate these applications to potential occupations within the computer technology field.

Standard 1: Word Processing and Communications (0142.S.1)

Students will demonstrate skills involving word processing in agriculture.

Word Processing and Communications Objectives

Students will:

- 0142.1.1 Prepare documents using word processing software.
- 0142.1.2 Utilize keyboarding skills for preparing reports and letters.
- 0142.1.3 Improve writing skills through the use of grammatical aids.
- 0142.1.4 Utilize data management systems.

Standard 2: Spreadsheet Applications (0142.S.2)

Students will use agricultural data in computer-based spreadsheets.

Spreadsheet Applications Objectives

Students will:

- 0142.2.1 Use software programs to integrate mathematical functions into agricultural production and agribusiness systems.
- 0142.2.2 Manipulate numerical data as it relates to cost benefit analysis.
- 0142.2.3 Prepare budgets, financial statements, income reports and production records.
- 0142.2.4 Complete applications relating to work-based experiences (Supervised Agricultural Experience Programs).

Standard 3: Graphical Presentations (0142.S.3)

Students will utilize graphical presentation software.

Graphical Presentations Objectives

Students will:

- 0142.3.1 Utilize graphic based software for presentations.
- 0142.3.2 Prepare visual aids for communicative demonstrations.

Standard 4: Electronic Information Systems (0142.S.4)

Students will demonstrate skills involving electronic information systems.

Electronic Information Systems Objectives

Students will:

- 0142.4.1 Utilize telecommunications resources in writing documents, manipulating data and transmitting information.
- 0142.4.2 Retrieve data from agricultural networks.
- 0142.4.3 Investigate product-marketing principles using computer technology.
- 0142.4.4 Integrate computer technology into agricultural production systems through the use of remote control and remote sensor science.
- 0142.4.5 Explore Global Positioning Satellite applications in agriculture.

Standard 5: Agricultural Journalism and Desktop Publishing (0142.S.5)

Students will produce agricultural publications.

Agricultural Journalism and Desktop Publishing Objectives

Students will:

- 0142.5.1 Prepare newspaper and magazine articles for publishing.
- 0142.5.2 Manufacture flyers, programs and booklets using graphic software.
- 0142.5.3 Design a template for printing books, articles and programs.

Standard 6: Process/Workplace Skills (0142.S.6)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0142.6.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0142.6.2 Explore careers available in computer technology.
- 0142.6.3 Use a variety of sources to investigate the educational requirements of various careers in computer technology.
- 0142.6.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0142.6.5 Demonstrate correct language usage in all oral and written work.
- 0142.6.7 Perform effectively in both leadership and non-leadership roles.
- 0142.6.8 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0142.6.9 Participate as a team member to complete a variety of assignments.

Environmental Technology

WVEIS Code 0143

This class will cover various aspects of environmental science applications to prevent detrimental effects on our ecosystem. Units will include solid and hazardous waste, water purification, wastewater treatment, solid erosion control, nutrient management and environmental surveying.

Standard 1: Solid Waste (0143.S.1)

Students will identify solid waste.

Solid Waste Objectives

Students will:

- 0143.1.1 Analyze sources of solid waste.
- 0143.1.2 Examine hazards in solid waste materials and disposal.
- 0143.1.3 Compare and contrast methods of solid waste disposal.
- 0143.1.4 Explain and participate in recycling.
- 0143.1.5 Describe composting.
- 0143.1.6 Explore methods and benefits of composting.

Standard 2: Hazardous Waste (0143.S.2)

Students will identify hazardous waste materials.

Hazardous Waste Objectives

Students will:

- 0143.2.1 Identify types of hazardous waste.
- 0143.2.2 Describe ecotoxicology.
- 0143.2.3 Explain hazardous waste disposal.
- 0143.2.4 Explain safety procedures and simulate clean up of spills.

Standard 3: Water Purification (0143.S.3)

Students will identify water purification.

Water Purification Objectives

Students will:

- 0143.3.1 Describe the composition of water.
- 0143.3.2 Explain the importance of water.
- 0143.3.3 Identify sources of water.
- 0143.3.4 Investigate and discuss how water is stored and distributed.
- 0143.3.5 Research how water is used and managed.
- 0143.3.6 Name and distinguish various types of wetlands.
- 0143.3.7 Explore the benefits and function of wetlands.
- 0143.3.8 Analyze how human action affects wetlands.

Standard 4: Wastewater Treatment and Disposal (0143.S.4)

Students will identify wastewater treatments and disposals.

Wastewater Treatment and Disposal Objectives

Students will:

- 0143.4.1 Identify sources of wastewater.
- 0143.4.2 Describe hazards in wastewater.
- 0143.4.3 Compare and contrast ways of treating wastewater.
- 0143.4.4 Research the products of wastewater treatment, including the production and use of biosolids.
- 0143.4.5 Recognize and investigate the important biological, chemical, and biogeochemical processes

- in wastewater treatment.
- 0143.4.6 Explain the components and operation of a wastewater treatment system.

Standard 5: Soil Erosion Control (0143.S.5)

Students will identify soil erosion.

Soil Erosion Control Objectives

Students will:

- 0143.5.1 Identify and describe the physical properties of soil and their impact on soil erosion.
- 0143.5.2 Compare and contrast types of soil erosion.
- 0143.5.3 Illustrate soil conservation practices for urban and agricultural areas.
- 0143.5.4 Utilize a soil survey to make environmental decisions.
- 0143.5.5 Explain the best management practices to control sediment from urban areas, agriculture and forests.
- 0143.5.6 Examine soil erosion control devices.

Standard 6: Nutrition Management (0143.S.6)

Students will identify nutritional management of soil.

Nutrition Management Objectives

Students will:

- 0143.6.1 Investigate and discuss non-point source pollution.
- 0143.6.2 Utilize soil nutrient testing procedures to determine available nutrients.
- 0143.6.3 Utilize nutrient testing procedures to determine organic matter content.
- 0143.6.4 Complete a nutrient management plan.
- 0143.6.5 Calibrate a nutrient spreader for rate of application.
- 0143.6.6 Perform water-testing procedures and interpret results to determine impacts of non-point source pollution.

Standard 7: Environmental Surveying (0143.S.7)

Students will identify the trade of environmental surveying.

Environmental Surveying Objectives

Students will:

- 0143.7.1 Demonstrate basic surveying skills.
- 0143.7.2 Utilize topographical maps to make environmental decisions.
- 0143.7.3 Apply design principles to pond and wetland construction, sediment basins, and other similar structures.
- 0143.7.4 Identify and accurately utilize surveying equipment.

Standard 8: Leadership (0143.S.8)

Students will participate in related activities.

Leadership Objectives

Students will:

- 0143.8.1 Participate in WV Envirothon and other activities related to the curriculum.
- 0143.8.2 Utilize Internet World Wide Net to explore specialty areas in horticulture.

Standard 9: Laboratory Investigation (0143.S.9)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0143.9.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0143.9.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0143.9.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0143.9.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 10: Technology Applications (0143.S.10)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0143.10.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in environmental technology.
 - Locate, evaluate, and collect information from a variety of sources related to environmental technology.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0143.10.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0143.10.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to environmental technology.
- 0143.10.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of environmental technology.

Standard 11: Process/Workplace Skills (0143.S.11)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0143.11.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0143.11.2 Explore careers available in environmental technology.
- 0143.11.3 Use a variety of sources to investigate the educational requirements of various careers in environmental technology.
- 0143.11.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0143.11.5 Demonstrate correct language usage in all oral and written work.
- 0143.11.6 Perform effectively in both leadership and non-leadership roles.
- 0143.11.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0143.11.8 Participate as a team member to complete a variety of assignments.

Food Science and Processing

WVEIS Code 0144

This course is designed to provide students with knowledge, skills and competencies needed to enter various food science and food products processing careers. Major concepts covered are leadership, nutrition, food safety, and food products processing and marketing of food products.

Standard 1: Leadership (0144.S.1)

Students will demonstrate leadership skills.

Leadership Objectives

Students will:

- 0144.1.1 List food science and food products processing related careers.
- 0144.1.2 Participate in FFA activities.
- 0144.1.3 Complete a Supervised Agricultural Experience (SAE) Program.
- 0144.1.4 Present individual and group presentations on food products processing related topics.
- 0144.1.5 Conduct meetings using parliamentary law.

Standard 2: Nutrition (0144.S.2)

Students will explain basics of good nutrition and good health.

Nutrition Objectives

Students will:

- 0144.2.1 Identify six basic nutrients and related nutrient deficiencies.
- 0144.2.2 Read and interpret information on product labels.
- 0144.2.3 Demonstrate knowledge of food groups by classifying foods accordingly.
- 0144.2.4 Explain procedures involved in enhancing the nutritional value of food.
- 0144.2.5 Relate retail cost and nutritional value of food palatability.
- 0144.2.6 Demonstrate an awareness of the effects of food on physical health and well being.

Standard 3: Food Safety (0144.S.3)

Students will describe factors affecting food safety.

Food Safety Objectives

Students will:

- 0144.3.1 Identify common risks and safety hazards involved in storage, handling, processing and preparation of food products.
- 0144.3.2 Understand the influence of potable water on processing, storing and packaging food.
- 0144.3.3 Describe the effects of microbes on food spoilage during processing, handling, storage and food preparation.
- 0144.3.4 Describe FSIS and USDA inspection and grading standards relating to food products.
- 0144.3.5 Relate the importance of product testing to providing a safe and wholesome food supply (including drugs/hormones, pesticides and consumer quality issues.)

Standard 4: Food Products Processing (0144.S.4)

Students will explore different techniques of processing foods.

Food Products Processing Objectives

Students will:

- 0144.4.1 Analyze the effects of food processing techniques on the nutritional value of foods.
- 0144.4.2 Demonstrate food-processing techniques used in the dairy products industry. (fermentation, pasteurization and homogenization).
- 0144.4.3 Describe techniques used in cereal grain processing. (bleaching, grinding, milling and

- enriching).
- 0144.4.4 List processing techniques used in the meat industry. (cooking, curing, grinding).
 - 0144.4.5 Demonstrate an awareness of food processing techniques used in the fruit and vegetable industry (canning, freezing, heating.)
 - 0144.4.6 Dehydrate food items to produce less perishable products.
 - 0144.4.7 Describe and demonstrate food preservation techniques.
 - 0144.4.8 Identify bioengineered food items and describe microbiological processing techniques.

Standard 5: Marketing (0144.S.5)

Students will explore factors that influence food cost and consumption trends.

Marketing Objectives

Students will:

- 0144.5.1 Describe the relative cost of food in the U.S. as compared to other countries.
- 0144.5.2 Identify trends and cycles in food product markets.
- 0144.5.3 Relate pricing of products to trends and cycles in markets.
- 0144.5.4 Demonstrate an awareness of different packaging techniques and their effects on product quality.
- 0144.5.5 List transportation methods used in marketing products.

Standard 6: Technology Applications (0144.S.6)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0144.6.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in food science and processing.
 - Locate, evaluate, and collect information from a variety of sources related to food science and processing.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0144.6.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0144.6.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to food science and processing.
- 0144.6.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of food science and processing.

Standard 7: Process/Workplace Skills (0144.S.7)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0144.7.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0144.7.2 Explore careers available in food science and processing.
- 0144.7.3 Use a variety of sources to investigate the educational requirements of various careers in food science.
- 0144.7.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0144.7.5 Demonstrate correct language usage in all oral and written work.
- 0144.7.6 Perform effectively in both leadership and non-leadership roles.

- 0144.7.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0144.7.8 Participate as a team member to complete a variety of assignments.

Standard 8: Laboratory Investigation (0144.S.8)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0144.8.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0144.8.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0144.8.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0144.8.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Hydroponics

WVEIS Code 0145

This course emphasizes the scientific method in the production of hydroponic plants. The curriculum provides problem solving experiences and skills in plant propagation, plant growth and development in a soilless media.

Standard 1: Orientation to Hydroponics and Industry (0145.S.1)

Students will explore hydroponics technique and identify the progress in the industry.

Hydroponics and Industry Objectives

Students will:

- 0145.1.1 Describe the history and development of hydroponic growing techniques.
- 0145.1.2 Identify advantages and constraints of hydroponics.
- 0145.1.3 Compare and contrast traditional growing methods to soilless culture.

Standard 2: Classification of Hydroponic Plant Production System (0145.S.2)

Students will recognize the diversity of hydroponic systems and media.

Classification Objectives

Students will:

- 0145.2.1 Describe the difference between open and closed plant production system.
- 0145.2.2 Identify types and characteristics of soilless media.
- 0145.2.3 Describe solution, culture methods and nutrient film technique.

Standard 3: Plant Growth and Development (0145.S.3)

Students will describe plant structures and environmental requirements for plant growth.

Plant Growth and Development Objectives

Students will:

- 0145.3.1 Identify plant structures and functions.
- 0145.3.2 Describe environmental requirements for plant growth.

Standard 4: Leadership and Interpersonal Skill Development (0145.S.4)

Students will demonstrate leadership skills through personal, organizational and workplace experiences.

Leadership and Interpersonal Skill Development Objectives

Students will:

- 0145.4.1 Serve as a small group team leader.
- 0145.4.2 Identify leadership and decision making skills.
- 0145.4.3 Participate in committee and leadership development activities.
- 0145.4.4 Conduct community and school improvement projects.

Standard 5: Developing Work-Based Experiential Programs (0145.S.5)

Students will explore careers and plan a SAE.

SAE Objectives

Students will:

- 0145.5.1 Determine areas and careers of major interest in agriculture.
- 0145.5.2 Manage school-based hydroponics laboratory enterprises.
- 0145.5.3 Establish experience program record book procedures.

Standard 6: Laboratory Safety Skills (0145.S.6)

Students will practice and demonstrate safety in the laboratory.

Safety Skills Objectives

Students will:

- 0145.6.1 Establish a safe working environment.
- 0145.6.2 Identify safety policies and procedures.
- 0145.6.3 Demonstrate proper use of equipment.

Standard 7: Computer Applications in Hydroponics and Plant Science (0145.S.7)

Students will apply technology to investigate real-world problems.

Computer Applications Objectives

Students will:

- 0145.7.1 Use Internet for research applications in hydroponics.
- 0145.7.2 Identify how computer based systems may be used for hydroponics environmental control.
- 0145.7.3 Utilize keyboarding and word processing skills to prepare class reports.

Standard 8: Greenhouse Structures (0145.S.8)

Students will recognize environmental components for structure construction and operation.

Greenhouse Structures Objectives

Students will:

- 0145.8.1 Identify environmental controls (heating and cooling components) of a greenhouse.
- 0145.8.2 Explain the function of greenhouse structure components.
- 0145.8.3 Determine the appropriate site and location of a hydroponics greenhouse.

Standard 9: Producing Hydroponic Crops (0145.S.9)

Students will determine appropriate amendments and identify effective procedures for hydroponic crop management.

Hydroponic Crops Objectives

Students will:

- 0145.9.1 List requirements of hydroponic tomatoes and lettuce production systems.
- 0145.9.2 Identify other plants that may be produced hydroponically.
- 0145.9.3 Test, interpret and manage pH.
- 0145.9.4 Measure electrical conduction of nutrient solution.
- 0145.9.5 Mix and manage hydroponic solutions.
- 0145.9.6 Determine methods of biological insect control.
- 0145.9.7 Identify mineral deficiencies.

Leadership Development

WVEIS Code 0146

This course is designed to provide students with basic leadership skills. Instructional areas include leadership styles, goal setting, time management, public speaking, job skills and interpersonal relationships.

Standard 1: Leadership Styles (0146.S.1)

Students will describe various leadership styles.

Leadership Styles Objectives

Students will:

- 0146.1.1 Define leadership.
- 0146.1.2 Explain traits and styles.
- 0146.1.3 Explore different personality traits.
- 0146.1.4 Recognize informal leader.

Standard 2: Developing Formal Leadership Methods (0146.S.2)

Students will explain leadership methods.

Formal Leadership Objectives

Students will:

- 0146.2.1 Describe duties of officers in an organization.
- 0146.2.2 Define all different forms of motions.
- 0146.2.3 Identify proper conduct for meetings.

Standard 3: Public Speaking (0146.S.3)

Students will acquire skills in public speaking.

Public Speaking Objectives

Students will:

- 0146.3.1 Present two required speeches.
- 0146.3.2 Prepare an introduction for invited guest speakers.
- 0146.3.3 Observe invited guest speakers for different speaking styles.
- 0146.3.4 Become involved in a controlled debate.
- 0146.3.5 Conduct small group discussions on current events.

Standard 4: Community Service (0146.S.4)

Students will develop skills to participate in community service.

Community Service Objectives

Students will:

- 0146.4.1 Conduct community projects. Depending on the community the class can do many different projects with the Chamber of Commerce, Rotary, United Way, etc.
- 0146.4.2 Conduct school improvement projects. Work with the student council in developing projects that will improve the school grounds, buildings, etc.
- 0146.4.3 Conduct projects that deal with drug awareness, drinking and driving, etc.

Standard 5: Goal Setting (0146.S.5)

Students will use goal setting, time management and stress management.

Goal Setting Objectives

Students will:

- 0146.5.1 Explore goal setting (long term and short term).
- 0146.5.2 Describe methods of time management.
- 0146.5.3 Identify stress reduction methods.

Standard 6: Job Seeking Skills (0146.S.6)

Students will develop job-seeking skills.

Job Seeking Skills Objectives

Students will:

- 0146.6.1 Explore areas of proper dress in the work place.
- 0146.6.2 Prepare a cover letter and resume.
- 0146.6.3 Describe proper interview techniques for an oral interview.

Standard 7: Interpersonal Relations (0146.S.7)

Students will demonstrate interpersonal relationships for job success.

Interpersonal Relations Objectives

Students will:

- 0146.7.1 Explain and discuss a paradigm shift.
- 0146.7.2 Write thank you letters to the teachers before graduation.
- 0146.7.3 Explore conflict resolution.
- 0146.7.4 Hold mock social gathering with adults.
- 0146.7.5 Explore proper ethics and values.

Standard 8: Technology Application (0146.S.8)

Students will apply technology to investigate real-world problems.

Technology Application Objectives

Students will:

- 0146.8.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in leadership development.
 - Locate, evaluate, and collect information from a variety of sources related to leadership development.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0146.8.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0146.8.3 Use TV/Satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to leadership development.
- 0146.8.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of leadership development.

Outdoor Recreation

WVEIS Code 0147

This area of study is designed to provide students with knowledge and skills in outdoor recreation that will be useful in various occupations in the field. Major emphasis will be on careers, public relations and teamwork.

Standard 1: Leadership Development (0147.S.1)

Students will participate in activities to promote leadership development.

Leadership Development Objectives

Students will:

- 0147.1.1 Identify the year FFA was formed.
- 0147.1.2 Name the author of the creed.
- 0147.1.3 Identify the location of the state and national convention.
- 0147.1.4 Name the state and national FFA advisors.
- 0147.1.5 Name the degree levels in FFA.
- 0147.1.6 Identify parts of the emblem.
- 0147.1.7 Present a speech on outdoor recreation.

Standard 2: Career Development (0147.S.2)

Students will research career development in outdoor recreation.

Career Development Objectives

Students will:

- 0147.2.1 Identify regional career opportunities in outdoor recreation including. Park Ranger, Recreation Manager, Instructor, Conservation Officer, First Aid/Safety Expert, Entertainment Manager, Business Manager, Outdoor Guide, Youth Camp Operator, Campground Owner, Riding Stable Owner and Lifeguard.
- 0147.2.2 Profile outdoor recreation specialists.
- 0147.2.3 Develop teamwork skills and activities.
- 0147.2.4 Develop public relation skills.

Standard 3: Outdoor Safety (0147.S.3)

Students will participate in activities to promote outdoor safety.

Outdoor Safety Objectives

Students will:

- 0147.3.1 Obtain Red Cross first aid certificate.
- 0147.3.2 Obtain Red Cross adult CPR certificate.
- 0147.3.3 Identify potential outdoor safety hazards.
- 0147.3.4 Identify poisonous plants.
- 0147.3.5 Identify poisonous insects.
- 0147.3.6 Identify poisonous animals.
- 0147.3.7 Identify safety inspection procedures for outdoor recreation equipment.

Standard 4: Natural Resource and Recreation (0147.S.4)

Students will identify natural resource and recreation areas.

Natural Resource and Recreation Objectives

Students will:

- 0147.4.1 Describe geological formations.
- 0147.4.2 Recognize services required for recreational areas.

- 0147.4.3 Recognize facilities required for recreational areas.
- 0147.4.4 Identify endangered species of plants and animals.
- 0147.4.5 Identify wetlands and riparian zones.
- 0147.4.6 Describe local, state and federal laws related to recreational enterprises.

Standard 5: Business Opportunities and Promotions (0147.S.5)

Students will recognize business opportunities and promotions.

Business Opportunities and Promotions Objectives

Students will:

- 0147.5.1 Recognize income potential from various types of recreational enterprises.
- 0147.5.2 Identify business procedures required of recreational enterprises.
- 0147.5.3 Design advertising media to promote a recreational area effectively.

Standard 6: Laboratory Investigation (0147.S.6)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0147.6.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0147.6.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0147.6.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0147.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 7: Technology Application (0147.S.7)

Students will apply technology to investigate real-world problems.

Technology Application Objectives

Students will:

- 0147.7.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in outdoor recreation.
 - Locate, evaluate, and collect information from a variety of sources related to outdoor recreation.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0147.7.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0147.7.3 Use cameras and/or camcorders to record activities and progress of special projects in the area of outdoor recreation.

Standard 8: Process/Work Place Skills (0147.S.8)

Students will demonstrate personal and group workplace skills.

Process/Work Place Skills Objectives

Students will:

- 0147.8.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0147.8.2 Explore careers available in outdoor recreation.
- 0147.8.3 Use a variety of sources to investigate the educational requirements of various careers in

- biotechnology and related sciences.
- 0147.8.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
 - 0147.8.5 Demonstrate correct language usage in all oral and written work.
 - 0147.8.6 Perform effectively in both leadership and non-leadership roles.
 - 0147.8.7 Evaluate information for reliability, completeness, and applicability to various assignments.
 - 0147.8.8 Participate as a team member to complete a variety of assignments.

Poultry Science and Production

WVEIS Code 0148

This agricultural science course is designed to give students a working knowledge of the poultry industry, which includes chickens, turkeys and other avian species. The course provides an understanding of breeds, animal health, animal nutrition, anatomy and physiology, selection and economic and marketing principles related to employment. Students will develop a working knowledge of land use and poultry production to maintain an economical level of production. Upon completion course students will have the skills needed for an entry-level position or entrance into a degree program.

Standard 1: Orientation to the Poultry Industry (0148.S.1)

Students will explore different facets of the poultry industry.

Poultry Industry Objectives

Students will:

- 0148.1.1 Describe the importance of the poultry industry to the state and national economy.
- 0148.1.2 Identify different types of poultry enterprises.
- 0148.1.3 Relate consumption trends in poultry products.
- 0148.1.4 Identify and analyze career opportunities in the poultry industry.

Standard 2: Selection for Production (0148.S.2)

Students will use industry standards for poultry selection.

Selection for Production Objectives

Students will:

- 0148.2.1 List the classes of poultry and identify common breeds.
- 0148.2.2 Describe characteristics of birds that relate to productivity.
- 0148.2.3 Explain criteria to consider in selecting a breed for various types of production.
- 0148.2.4 Describe factors that influence chick purchase decisions.
- 0148.2.5 Describe characteristics associated with high egg production and procedures used in culling.
- 0148.2.6 Describe selection characteristics of parent and grandparent seed stock lines.

Standard 3: Nutrition and Management (0148.S.3)

Students will study factors that affect profitability.

Nutrition and Management Objectives

Students will:

- 0148.3.1 Describe factors that affect cost of poultry and egg production.
- 0148.3.2 Determine facility and equipment requirements for various poultry enterprises.
- 0148.3.3 Formulate rations for laying flocks, turkeys and broilers.
- 0148.3.4 Describe methods of disease and parasite control.
- 0148.3.5 Explain environmentally friendly methods of litter and dead bird disposal.
- 0148.3.6 Use computer programs to maintain inventory, expenses, income and other pertinent records.

Standard 4: Poultry Health and Management (0148.S.4)

Students will recognize best management practices for flock health.

Poultry Health and Management Objectives

Students will:

- 0148.4.1 Determine the type of care and housing facilities needed for poultry.
- 0148.4.2 Identify mechanical injury and treatment requirements.
- 0148.4.3 Identify signs/symptoms of disease and parasites, as well as prevention and treatment.

- 0148.4.4 Utilize techniques in administration of medicine and immunization.
- 0148.4.5 Design and utilize a flock health program in poultry production.

Standard 5: Anatomy and Physiology (0148.S.5)

Students will utilize the fundamentals of anatomy and physiology in the production of poultry.

Anatomy and Physiology Objectives

Students will:

- 0148.5.1 Identify the major parts and functions of the anatomy of various types of poultry.
- 0148.5.2 Identify the major parts and functions of the digestive system.
- 0148.5.3 Identify the major parts and functions of the reproductive system.
- 0148.5.4 Identify the functions of the skeletal, muscular, nervous, hormonal, respiratory, circulatory and excretory system as they relate to poultry management.
- 0148.5.5 Identify and explain modern poultry breeding techniques.
- 0148.5.6 Analyze and explain data utilizing genotypic information to form a superior poultry program.

Standard 6: Solid Waste (0148.S.6)

Students will explore strategies for handling poultry waste.

Solid Waste Objectives

Students will:

- 0148.6.1 Describe sources of solid waste associated with poultry industries.
- 0148.6.2 Explain hazards in solid waste materials and disposal.
- 0148.6.3 Describe ways of disposing of solid waste.
- 0148.6.4 Identify NRCS and SCS programs available for assistance in litter disposal.
- 0148.6.5 Explain recycling.
- 0148.6.6 Describe composting.
- 0148.6.7 Identify methods and benefits of composting.

Standard 7: Marketing (0148.S.7)

Students will demonstrate competencies in marketing livestock.

Marketing Objectives

Students will:

- 0148.7.1 Research and study various livestock marketing techniques.
- 0148.7.2 Identify transportation and safety methods for livestock handling.
- 0148.7.3 Research types of laws, regulations and licenses needed for modern livestock sales.
- 0148.7.4 Analyze costs of owning and operating a livestock business.

Standard 8: Leadership and Communication (0148.S.8)

Students will demonstrate leadership in the poultry industry.

Leadership and Communication Objectives

Students will:

- 0148.8.1 Present written and oral reasons in poultry judging events.
- 0148.8.2 Participate in FFA meetings and activities.
- 0148.8.3 Prepare and present speeches on issues involving the poultry industry using information available from magazines, trade journals, the Internet and other sources.

Standard 9: Technology Applications (0148.S.9)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0148.9.1 Use computers and the World Wide Web (WWW) to:
- Solve problems related to work-based experience programs in poultry production.
 - Locate, evaluate, and collect information from a variety of sources related to poultry production.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0148.9.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0148.9.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to poultry production.
- 0148.9.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of poultry production.

Standard 10: Process/Workplace Skills in Agribusiness (0148.S.10)

Students will demonstrate personal and group workplace skills.

Agribusiness Objectives

Students will:

- 0148.10.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0148.10.2 Explore careers available in agribusiness.
- 0148.10.3 Use a variety of sources to investigate the educational requirements of various careers in agribusiness and related sciences.
- 0148.10.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0148.10.5 Demonstrate correct language usage in all oral and written work.
- 0148.10.6 Perform effectively in both leadership and non-leadership roles.
- 0148.10.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0148.10.8 Participate as a team member to complete a variety of assignments.

Standard 11: Lab Investigation (0148.S.11)

Students will safely conduct laboratory investigations and exploratory learning.

Lab Investigation Objectives

Students will:

- 0148.11.1 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0148.11.2 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0148.11.3 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.
- 0148.11.4 Conduct a supervised agricultural experience program with appropriate records.

Small Animal Care and Management

WVEIS Code 0149

This course is designed to give students a working knowledge of the small animal care industry, which includes dogs, cats, birds, reptiles and other pets. The course provides an understanding of breeds, animal health, nutrition, training, anatomy and physiology, grooming, economic and marketing principles and related employment skills. Students will develop a thorough knowledge of small animals, their management and a keen business sense relating to small animals. Upon completion of this course, students will have the skills needed for an entry-level position or entrance into a degree program.

Standard 1: Leadership (0149.S.1)

Students will demonstrate leadership skills for success in the small animal industry.

Leadership Objectives

Students will:

- 0149.1.1 Identify FFA and its components.
- 0149.1.2 Utilize record-keeping skills in work-based experience programs (SAE).
- 0149.1.3 Identify appropriate career opportunities in the small animal care industry.
- 0149.1.4 Draft a resume, fill out a job application, and demonstrate job seek/keep skills.
- 0149.1.5 Develop personal relation and communication skills.
- 0149.1.6 Identify animal welfare ethics and other issues.
- 0149.1.7 Develop a working relationship with local veterinarians.

Standard 2: History and Selection of Animals (0149.S.2)

Students will provide background information and describe the desirable characteristics of domestic animals.

Animals Objectives

Students will:

- 0149.2.1 Relate the history of domestic animals to modern animal production.
- 0149.2.2 Describe and classify small animals according to purposes/uses.
- 0149.2.3 Identify breeds of small animals (dogs, cats, birds, reptiles, etc.).
- 0149.2.4 Relate the characteristics of breeds to methods of selection.
- 0149.2.5 Be able to differentiate between domestic and exotic animals.

Standard 3: Training, Handling and Restraint (0149.S.3)

Students will demonstrate safe handling and restraining techniques.

Training, Handling and Restraint Objectives

Students will:

- 0149.3.1 Identify and use tools related to training and handling/restraint of small animals.
- 0149.3.2 Identify methods and techniques used in restraint and training of small animals.
- 0149.3.3 Utilize basic commands and training methods.
- 0149.3.4 Identify AKC guidelines for instructing dogs.
- 0149.3.5 Utilize safety practices in training and handling.

Standard 4: Grooming and Clipping (0149.S.4)

Students will demonstrate skills in grooming and clipping.

Grooming and Clipping Objectives

Students will:

- 0149.4.1 Utilize safety practices in grooming and clipping small animals.

- 0149.4.2 Identify tools used in grooming.
- 0149.4.3 Describe grooming practices (bathing, clipping, nail trimming, combing/brushing).
- 0149.4.4 Use proper care in applying topical medications.

Standard 5: Anatomy and Physiology (0149.S.5)

Students will utilize the fundamentals of anatomy and physiology in caring for small animals.

Anatomy and Physiology Objectives

Students will:

- 0149.5.1 Identify the major parts and functions of the skeletal system.
- 0149.5.2 Identify the major parts and functions of the muscular system.
- 0149.5.3 Identify the major parts and functions of the nervous system.
- 0149.5.4 Identify the major parts and functions of the endocrine system.
- 0149.5.5 Identify the major parts and functions of the respiratory system.
- 0149.5.6 Identify the major parts and functions of the circulatory system.
- 0149.5.7 Identify the major parts and functions of the reproductive system.
- 0149.5.8 Identify the major parts and functions of the excretory system.
- 0149.5.9 Identify the major parts and functions of the digestive system.
- 0149.5.10 Explain the difference between ruminant and monogastric systems.
- 0149.5.11 Describe functions of other small animals systems (avian, rabbits, reptiles).

Standard 6: Animal Health and Management (0149.S.6)

Students will demonstrate competencies in animal health and management.

Animal Health and Management Objectives

Students will:

- 0149.6.1 Determine the type of care and housing facilities needed.
- 0149.6.2 Identify mechanical injury and basic first aid requirements.
- 0149.6.3 Identify signs/symptoms of disease, as well as prevention and treatment.
- 0149.6.4 Utilize techniques in administering medicine and immunizing.

Standard 7: Nutrition (0149.S.7)

Students will describe the role of nutrition in small animal care.

Nutrition Objectives

Students will:

- 0149.7.1 Define terms associated with nutrition.
- 0149.7.2 List and describe the basic nutrients and their functions.
- 0149.7.3 Analyze pet food labels and determine the nutritional value of feeds and feedstuffs.
- 0149.7.4 Identify signs of nutritional deficiencies.
- 0149.7.5 Identify feeding and care requirements throughout life cycle and pregnancy.

Standard 8: Marketing (0149.S.8)

Students will demonstrate competencies in marketing small animals.

Marketing Objectives

Students will:

- 0149.8.1 Explore types of markets available.
- 0149.8.2 Identify transportation methods.
- 0149.8.3 Research types of laws, regulations and licenses needed in local area.
- 0149.8.4 Analyze costs of owning and operating a small animal care business.

Standard 9: Technology Applications (0149.S.9)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0149.9.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in agribusiness.
 - Locate, evaluate, and collect information from a variety of sources related to agribusiness.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0149.9.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0149.9.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to agribusiness.
- 0149.9.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of agribusiness.

Standard 10: Process/Workplace Skills in Agribusiness (0149.S.10)

Students will demonstrate personal and group workplace skills.

Agribusiness Objectives

Students will:

- 0149.10.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0149.10.2 Explore careers available in agribusiness.
- 0149.10.3 Use a variety of sources to investigate the educational requirements of various careers in agribusiness and related sciences.
- 0149.10.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0149.10.5 Demonstrate correct language usage in all oral and written work.
- 0149.10.6 Perform effectively in both leadership and non-leadership roles.
- 0149.10.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0149.10.8 Participate as a team member to complete a variety of assignments.

Standard 11: Laboratory Investigation (0149.S.11)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0149.11.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0149.11.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0149.11.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0149.11.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Soil And Plant Science (Agronomy)

WVEIS Code 0150

This area of study is designed to provide students with scientific knowledge and experiences essential to careers in soil and plant science. The course includes major units in soil formation, soil properties, land classification, fertility, plant growth and the impact of agriculture on the environment.

Standard 1: Orientation to Soil and Plant Science (0150.S.1)

Students will soil and plant science.

Soil and Plant Science Objectives

Students will:

- 0150.1.1 Research career opportunities in soil and plant science.
- 0150.1.2 Describe the impact of agriculture on the environment.
- 0150.1.3 List and describe the function of federal, state and local entities and interest groups concerned with soil and plant science.
- 0150.1.4 Examine the role of soil and plants in the ecosystem.

Standard 2: Leadership Development (0150.S.2)

Students will participate in various FFA activities.

Leadership Development Objectives

Students will:

- 0150.2.1 Participate in meetings using parliamentary law.
- 0150.2.2 Use interpersonal skills in team problem solving.
- 0150.2.3 Prepare and deliver a brief presentation on an agronomic topic.

Standard 3: Provide Work-Based Experiential Learning Opportunities (0150.S.3)

Students will participate in a work-base experience program.

Work-Based Objectives

Students will:

- 0150.3.1 Explore opportunities for work-based experience through supervised experience programs.
- 0150.3.2 Define record keeping terms for supervised experience programs.
- 0150.3.3 Develop budgets for potential supervised experience programs.

Standard 4: Soil Origin and Development (0150.S.4)

Students will identify how soil is formed and surveyed.

Soil Origin and Development Objectives

Students will:

- 0150.4.1 Determine how soil is formed.
- 0150.4.1 Interpret information from soil surveys.

Standard 5: Physical Properties of Soil (0150.S.5)

Students will identify the various physical properties of soil samples.

Soil Objectives

Students will:

- 0150.5.1 Define and determine soil depth.
- 0150.5.2 Define and determine soil texture.

- 0150.5.3 Define and determine soil structure.
- 0150.5.4 Define and determine soil permeability.
- 0150.5.5 Define and determine drainage.
- 0150.5.6 Define and determine slope.

Standard 6: Classification of Soils Into Soil Series and Land Capability Classes (0150.S.6)

Students will identify the various classification of soil.

Classification of Soils Objectives

Students will:

- 0150.6.1 Classify soils by common physical properties.
- 0150.6.2 Describe soil series of the region.
- 0150.6.3 Determine land capability classes and recommend appropriate land management practices.

Standard 7: Plant Nutrition and Soil Fertility (0150.S.7)

Students will identify the various functions of plant nutrition and soil fertility.

Plant Nutrition and Soil Fertility Objectives

Students will:

- 0150.7.1 List and describe the functions of macro and micronutrients.
- 0150.7.2 Describe and identify plant nutrient deficiencies.
- 0150.7.3 Explain the function and management of soil pH.
- 0150.7.4 Describe and engage in the process of soil testing.
- 0150.7.5 Interpret and apply data generated by soil testing.
- 0150.7.6 List and compare sources of plant nutrients.
- 0150.7.7 Identify nutrient deficiencies and plant diseases.
- 0150.7.8 Conduct plant growth experiments.
- 0150.7.9 Use soil-testing equipment.

Standard 8: Plant Structures and their Functions (0150.S.8)

Students will identify the various plant structures and their functions.

Plant Structures Objectives

Students will:

- 0150.8.1 Explain basic plant production requirements.
- 0150.8.2 Identify the major parts of a plant.
- 0150.8.3 Describe the function of the major parts of a plant.
- 0150.8.4 Demonstrate knowledge of plant growth processes photosynthesis, respiration and transpiration.

Standard 9: Row Crop Management (0150.S.9)

Students will identify the various methods to row crop management.

Row Crop Management Objectives

Students will:

- 0150.9.1 Identify row crops common to the area.
- 0150.9.2 Describe cultural requirements and production practices of row crops.
- 0150.9.3 List and describe harvesting methods.

Standard 10: Forage Management (0150.S.10)

Students will identify the various methods to row crop management.

Forest Management Objectives

Students will:

- 0150.10.1 Identify forage crops common to the area.
- 0150.10.2 Describe cultural requirements and production practices of forage crops.
- 0150.10.3 List and describe harvesting methods.

Standard 11: Soil and Water Conservation (0150.S.11)

Students will identify the various methods of soil and water conservation.

Soil and Water Conservation Objectives

Students will:

- 0150.11.1 Define and provide examples of erosion.
- 0150.11.2 Explain agricultural practices to conserve soil and reduce pollution (stewardship).
- 0150.11.3 Predict impacts of erosion.
- 0150.11.4 Identify and describe best management practices to prevent soil erosion.
- 0150.11.5 Utilize the World Wide Web to explore specialty areas in soil and plant science.

Standard 12: Laboratory Investigation (0150.S.12)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0150.12.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0150.12.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0150.12.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0150.12.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 13: Technology Applications (0150.S.13)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0150.13.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in soil and plant science.
 - Locate, evaluate, and collect information from a variety of sources related to soil and plant science.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0150.13.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0150.13.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to soil and plant science.
- 0150.13.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of soil and plant science.

Standard 14: Process/Workplace Skills (0150.S.14)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0150.14.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0150.14.2 Explore careers available in soil and plant science.
- 0150.14.3 Use a variety of sources to investigate the educational requirements of various careers in soil and plant science.
- 0150.14.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0150.14.5 Demonstrate correct language usage in all oral and written work.
- 0150.14.6 Perform effectively in both leadership and non-leadership roles.
- 0150.14.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0150.14.8 Participate as a team member to complete a variety of assignments.

Food Science and Processing II – Retail Specialization WVEIS Code 0151

This course is designed to provide students with basic knowledge and skills in retail meat processing. Students will be able to exhibit these skills in the areas of sanitation and safety, livestock grades, processing, retailing/value added procedures, job seek/keep skills and microcomputer applications.

Standard 1: Leadership (0151.S.1)

Students will demonstrate skills necessary to be employed.

Leadership Objectives

Students will:

- 0151.1.1 Participate in FFA activities.
- 0151.1.2 Write, deliver and evaluate a speech and/or oral presentation.
- 0151.1.3 Explore careers in processing.
- 0151.1.4 Determine appropriate job seek/keep skills.
- 0151.1.5 Demonstrate knowledge of ethical conduct in the workplace.
- 0151.1.6 Communicate effectively with customers and suppliers.

Standard 2: Sanitation/Safety (0151.S.2)

Students will safely handle meat products.

Sanitation/Safety Objectives

Students will:

- 0151.2.1 List USDA sanitary practices relating to personal hygiene, sanitization of equipment and maintenance of facilities.
- 0151.2.2 Describe how HACCP is utilized in the meat industry to manage food hazard and maintain safe sanitary control.
- 0151.2.3 Explain safe methods in handling tools and equipment in processing.
- 0151.2.4 Identify proper temperatures and time periods for storage and handling of fresh and frozen meat and meat products.
- 0151.2.5 Identify proper storage and handling techniques for consumables and byproducts.
- 0151.2.6 Identify and demonstrate proper sanitary procedures for handling ready to eat products.

Standard 3: Livestock Grades (0151.S.3)

Students will discuss general classes of livestock and USDA Carcass Standards.

Livestock Grades Objectives

Students will:

- 0151.3.1 List common breeds, USDA classes of livestock.
- 0151.3.2 Demonstrate how to yield and quality grade hanging carcasses.
- 0151.3.3 Compare effects of quality and yield grades on wholesale and retail pricing.

Standard 4: Processing (0151.S.4)

Students will prepare retail meat products.

Processing Objectives

Students will:

- 0151.4.1 Identify wholesale (primal) cuts of beef, pork and lamb.
- 0151.4.2 Break carcasses into primal cuts.
- 0151.4.3 Prepare retail cuts of beef, pork and lamb.

- 0151.4.4 Identify boxed meat nomenclature for ordering and processing.
- 0151.4.5 Prepare common boneless cuts of boxed beef and pork.
- 0151.4.6 Cut wholesale (primal) cuts and boxed products into various retail cuts.

Standard 5: Retailing/Value Added Procedures (0151.S.5)

Students will utilize different techniques to merchandise products for customers.

Retailing/Value Added Procedures Objectives

Students will:

- 0151.5.1 Show methods of value added processing (grinding, tenderizing).
- 0151.5.2 Wrap and label for refrigeration and for freezing.
- 0151.5.3 Prepare sausages for both the fresh and smoked market.
- 0151.5.4 Safely use cure agents and proper procedure to cure and smoke meat products.
- 0151.5.5 Prepare attractive display of meats and meat products.
- 0151.5.6 Rotate stock to extend shelf life and profitability.
- 0151.5.7 Compute price markup and price product to reach store objective.
- 0151.5.8 Describe case rotation and preparing a lunch meat case in a retail outlet.
- 0151.5.9 Demonstrate knowledge and skills in customer relations.
- 0151.5.10 Take orders for special processing.
- 0151.5.11 Exhibit an understanding of retail value, trim loss, shelf life, and seasonal demand as related to pricing of products.
- 0151.5.12 Recommend cooking methods for cuts of meat.
- 0151.5.13 Explain use of prepackaged and gas flushed retail packaged meat.

Standard 6: Technology Applications (0151.S.6)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0151.6.1 Use computers and the World Wide Web (WWW) to: solve problems related to work-based experience programs in retail processing; locate, evaluate and collect information for a variety of sources related to preparing a retail case; develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0151.6.2 Demonstrate skills in word processing and use of database, spreadsheets, graphics and telecommunications.
- 0151.6.3 Use VCR and DVD to retrieve information to complete classroom assignments related to retail processing.
- 0151.6.4 Use camera and/or camcorder to record activities and progress of special projects on the area of retail processing.

Standard 7: Process/Workplace Skills (0151.S.7)

Students will demonstrate personnel and group work place skills.

Process/Workplace Skills Objectives

Students will:

- 0151.7.1 Use computers and other electronic technologies to access, gather, retrieve, organize, analyze and report data.
- 0151.7.2 Explore careers available in retail processing.
- 0151.7.3 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0151.7.4 Demonstrate correct language usage in oral and written work.
- 0151.7.5 Perform effectively in both leadership and nonleadership roles.
- 0151.7.6 Evaluate information for reliability, completeness, and applicability to various assignments.

0151.7.7 Participate as a team member to complete various assignments.

Standard 8: Laboratory Investigation (0151.S.8)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0151.8.1 Engage in active inquiries, investigations, and hands on activities a minimum of 50 percent of the time.
- 0151.8.2 Conduct investigation in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0151.8.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0151.8.4 Use computers and other electronic technologies to collect analyze, and or report data; interact with simulations, and research.

Environmental Technology II

WVEIS Code 0152

This class will cover various aspects of environmental science applications and issues. Units will include ecosystem management, chemical use in the environment, air quality, land use, and environmental issues. Other units will include a review of Environmental Technology, leadership development, workplace skills, and technology applications. Completion of Environmental Technology is recommended.

Standard 1: Environmental Technology Review (0152.S.1)

Students will review concepts of environmental technology.

Environmental Technology Review Objectives

Students will:

- 0152.1.1 Describe methods of solid waste disposal.
- 0152.1.2 Explain safety procedures in handling wastes.
- 0152.1.3 Define water and explain its importance.
- 0152.1.4 Identify and describe sources and hazards of wastewater.
- 0152.1.5 Describe soil conservation practices.
- 0152.1.6 Demonstrate use of soil and water testing equipment and procedures.

Standard 2: Ecosystem Management (0152.S.2)

Students will identify and describe the management of various types of ecosystems.

Ecosystem Management Objectives

Students will:

- 0152.2.1 Review basic ecological concepts such as; ecosystems, food web, food chain, producer, consumer, decomposer, etc.
- 0152.2.2 Locate and describe the ecosystems within the United States.
- 0152.2.3 Give examples of plant and animal associations and their adaptations to their ecosystems.
- 0152.2.4 Describe how ecosystems are impacted by human activity.
- 0152.2.5 Explain how ecosystems are valued by humans.
- 0152.2.6 Explain sustainability as it relates to ecosystem management.
- 0152.2.7 Observe the various ecosystems on the school grounds or vicinity.
- 0152.2.8 Develop an ecosystem management plan.

Standard 3: Air Quality (0152.S.3)

Students will identify air pollutants.

Air Quality Objectives

Students will:

- 0152.3.1 Name major air pollutants and describe their effects on humans and the environment.
- 0152.3.2 Describe the sources of major air pollutants.
- 0152.3.3 Discuss how air pollutants are regulated and controlled.
- 0152.3.4 Evaluate the effect of air pollution and acid precipitation.

Standard 4: Land Use (0152.S.4)

Students will explain land use issues.

Land Use Objectives

Students will:

- 0152.4.1 Define "urban sprawl."
- 0152.4.2 Compare past and present land uses.

- 0152.4.3 Evaluate alternative uses of land.
- 0152.4.4 Analyze soil properties that affect land use for agricultural, residential, and industrial purposes.
- 0152.4.5 Use a soil survey to determine possible land uses.
- 0152.4.6 Describe the rights and responsibilities of land owners.

Standard 5: Chemical Use in the Environment (0152.S.5)

Students will identify appropriate uses of chemicals in the environment.

Chemical Use in the Environment Objectives

Students will:

- 0152.5.1 Define "chemicals."
- 0152.5.2 Compare and contrast household and agricultural chemicals.
- 0152.5.3 Interpret information from a chemical label.
- 0152.5.4 Calculate chemical application rates.
- 0152.5.5 Calibrate chemical application equipment.
- 0152.5.6 Identify safe procedures for chemical use and handling.
- 0152.5.7 Analyze cost and benefits of chemical use.
- 0152.5.8 Perform soil and water testing procedures and interpret results to determine chemical residues left in the environment.
- 0152.5.9 Identify federal regulations regarding the use and disposal of chemicals.

Standard 6: Environmental Issues (0152.S.6)

Students will identify and analyze current environmental issues.

Environmental Issues Objectives

Students will:

- 0152.6.1 Identify current environmental issues.
- 0152.6.2 Analyze environmental issues from political and scientific perspectives.
- 0152.6.3 Assess public sensitivity to environmental issues.
- 0152.6.4 Describe the government's role in environmental policy decisions.
- 0152.6.5 Conduct an "Ag. Issues Forum" to debate the various perspectives of an environmental issue.

Standard 7: Leadership (0152.S.7)

Students will participate in related activities.

Leadership Objectives

Students will:

- 0152.7.1 Participate in the WV Envirothon and other activities related to the curriculum (Ag. Issues Forum, Food For America, Project PALS, Grasslands Management CDE, Land Judging and Homesite Evaluation, etc.).
- 0152.7.2 Utilize the Internet to explore specific areas in Environmental Technology.

Standard 8: Laboratory Investigation (0152.S.8)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0152.8.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0152.8.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).

- 0152.8.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0152.8.4 Use computers and other electronic technologies (e.g., computer, GPS, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 9: Technology Applications (0152.S.9)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0152.9.1 Use computers and the World Wide Web (WWW) to: solve problems related to work-based experience programs in environmental technology; locate, evaluate and collect information for a variety of sources related to environmental technology; develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0152.9.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0152.9.3 Use TV/satellite, VCR and Laserdiscs/DVD to retrieve information to complete classroom assignments related to environmental technology.
- 0152.9.4 Use camera and/or camcorder to record activities and progress of special projects in the area of environmental technology.

Standard 10: Process/Workplace Skills (0152.S.10)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0152.10.1 Use computers and other electronic technologies to access, gather, retrieve, organize, analyze and report data.
- 0152.10.2 Explore careers available in environmental technology.
- 0152.10.3 Use a variety of sources to investigate the educational requirements of various careers in environmental technology
- 0152.10.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0152.10.5 Demonstrate correct language usage in oral and written work.
- 0152.10.6 Perform effectively in both leadership and nonleadership roles.
- 0152.10.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0152.10.8 Participate as a team member to complete various assignments.
- 0152.10.9 Develop a resume and job seeking/keeping skills.

Agricultural Environmental Science

WVEIS Code 0153

This area of study is designed to provide students with core skill and competencies needed for pursuing careers in environmental science and natural resources management. Students will utilize problem-solving techniques and participate in laboratory activities to develop understanding of course concepts.

Standard 1: Ecology and Ecosystem Management (Introduction to Environmental Science) (0153.S.1)

Students will explain basic ecological concepts.

Ecology and Ecosystem Management Objectives

Students will:

- 0153.1.1 Explain the basics of ecology (history, food chains, niches, biomes, etc.).
- 0153.1.2 Explain concepts in environmental management.

Standard 2: Leadership in Environmental Science (0153.S.2)

Students will show leadership skills necessary for success in environmental science.

Leadership in Environmental Science Objectives

Students will:

- 0153.2.1 Define the function and history of the FFA.
- 0153.2.2 Demonstrate parliamentary procedure skills to conduct a meeting.
- 0153.2.3 Perform individual leadership skills in preparing and presenting a speech.
- 0153.2.4 Prepare and identify components of a program of activities.

Standard 3: Computer Applications (0153.S.3)

Students will display skill involving computer application in environmental science.

Computer Applications Objectives

Students will:

- 0153.3.1 Utilize keyboarding skills to operate environmental science software.
- 0153.3.2 Search the Internet to secure environmental science information.

Standard 4: Water Resources (0153.S.4)

Students will understand the importance of water and need to protect its quality.

Water Resources Objectives

Students will:

- 0153.4.1 Test, interpret, and analyze water test data.
- 0153.4.2 Explain impact of agricultural practices on groundwater.
- 0153.4.3 Identify the components of the hydrologic cycle.
- 0153.4.4 Interpret water supply and demand charts.
- 0153.4.5 Identify sources of water pollution.
- 0153.4.6 Test water samples using water testing equipment.
- 0153.4.7 Identify best management practices for water quality.
- 0153.4.8 Explain the role and impact of water quality legislation.
- 0153.4.9 Explain the interactions between fresh and saltwater.
- 0153.4.10 Identify wetland types.
- 0153.4.11 Explain criteria for a wetland.

- 0153.4.12 Collect plant wetland plant species.
- 0153.4.13 Understand relationship between soils and wetlands.
- 0153.4.14 Use soil survey and maps to identify and delineate a wetland.

Standard 5: Soils and the Environment (0153.S.5)

Students will demonstrate soil science skills.

Soils and the Environment Objectives

Students will:

- 0153.5.1 Test, interpret, and analyze soil test data.
- 0153.5.2 Take soil samples.
- 0153.5.3 Identify sources of soil pollution.
- 0153.5.4 Understand geology and soil formation factors.
- 0153.5.5 Identify best management practices of soil erosion and sedimentation.
- 0153.5.6 Identify environmental uses of soil (sewage lagoons, landfills, etc).
- 0153.5.7 Interpret and analyze soil survey information.

Standard 6: Forests (0153.S.7)

Students will understand the importance of the forest ecosystem.

Forests Objectives

Students will:

- 0153.6.1 Explain the role forests have in the environment.
- 0153.6.2 Identify forest regions in the U.S. and world.
- 0153.6.3 Identify the major forest ownership categories of forest land.
- 0153.6.4 Identify environmental tree diseases and forest insects.
- 0153.6.5 Explain the impact and role of forest fires.
- 0153.6.6 Identify tree harvest methods and explain their impact on the environment.
- 0153.6.7 Use various pieces of forestry equipment (Biltmore stick, increment borer, GPS, etc.).
- 0153.6.8 Interpret and analyze forestry data using topographic and aerial maps.

Standard 7: Environmental Grasslands and Crop Production (0153.S.8)

Students will demonstrate basic environmental grasslands and crop production skills.

Environmental Grasslands and Crop Production Objectives

Students will:

- 0153.7.1 Identify major food crops of the world.
- 0153.7.2 Collect and identify major grass species.
- 0153.7.3 Explain the nutritional needs of crops.
- 0153.7.4 Explain the aspects of organic gardening.
- 0153.7.5 Create a school compost pile.
- 0153.7.6 Collect and identify leguminous plants.
- 0153.7.7 Describe the value of grass and leguminous plants.

Standard 8: Energy Sources and Uses (0153.S.8)

Students will identify different energy sources and explain their uses.

Energy Sources and Uses Objectives

Students will:

- 0153.8.1 Explain the importance of energy conservation.
- 0153.8.2 Identify non-renewable energy sources (coal, crude oil, and natural gas) and explain their uses.

- 0153.8.3 Identify alternative fuel sources (methanol, ethanol, etc.).
- 0153.8.4 Visit a local power plant for a tour.

Standard 9: Integrated Pest Management (0153.S.9)

Students will demonstrate basic integrated pest management skills.

Integrated Pest Management Objectives

Students will:

- 0153.9.1 Explain the role of IPM in the world today.
- 0153.9.2 Identify and understand the major types of pest control (chemical, biological, cultural).
- 0153.9.3 Collect and identify agricultural pests; insect and weed species.
- 0153.9.4 Conduct an IPM field activity to determine the need for pesticides.
- 0153.9.5 Analyze and interpret pesticide labels.

Standard 10: Waste Management (0153.S.10)

Students will discuss the importance of managing various waste products.

Waste Management Objectives

Students will:

- 0153.10.1 Explain the impact of fertilizer and animal manure on the environment.
- 0153.10.2 Calculate actual nutrient amounts in commercial fertilizer.
- 0153.10.3 Identify best management practices of using fertilizer and animal manure (nutrient management, soil testing, etc.).
- 0153.10.4 Identify the alternatives of disposing of human waste.
- 0153.10.5 Explain the procedure for nutrient and pathogen testing of human waste.
- 0153.10.6 Tour a local waste water treatment plant.
- 0153.10.7 Identify various ways that solid waste can be handled (incinerated, landfill, etc.).
- 0153.10.8 Conduct a recycling project.
- 0153.10.9 Relate the role of toxic chemical laws.
- 0153.10.10 Identify poisonous plants.
- 0153.10.11 Identify household hazardous waste.

Standard 11: Air Pollution, Noise and Global Temperature (0153.S.11)

Students will discuss air and noise pollution and global warming issues.

Air Pollution, Noise and Global Temperature Objectives

Students will:

- 0153.11.1 Identify sources of air pollution.
- 0153.11.2 Identify compounds in air pollution.
- 0153.11.3 Describe the impact of air pollution on global warming and acid rain.
- 0153.11.4 Test, interpret, and analyze rain water sample data.
- 0153.11.5 Describe the impact of noise on human hearing.
- 0153.11.6 Explain the role agriculture holds in global warming.
- 0153.11.7 Identify factors affecting global temperature.
- 0153.11.8 Explain seasonal and orbital variations on global temperature.
- 0153.11.9 Explain El Nino and La Nina.
- 0153.11.10 Explain the greenhouse effect.
- 0153.11.11 Identify greenhouse gases.

Standard 12: Biodiversity (0153.S.12)

Students will understand the role of biodiversity in the environment.

Biodiversity Objectives

Students will:

- 0153.12.1 Understand the effects of plant and animal species loss to biodiversity.
- 0153.12.2 Explain the impact of human activities on biodiversity.
- 0153.12.3 Identify areas of the world rich in biodiversity.
- 0153.12.4 Explain genetic diversity and human food supply.
- 0153.12.5 Write a press release on the importance of biodiversity.
- 0153.12.6 Visit a zoo or wildlife facility to observe the diversity.

Standard 13: Human Population and Sustainable Living (0153.S.13)

Students will define the human population issue and the role of sustainable living.

Human Population and Sustainable Living Objectives

Students will:

- 0153.13.1 Explain the dynamics of population growth.
- 0153.13.2 Analyze information on the human population growth issue.
- 0153.13.3 Explain the role of agriculture and population growth.
- 0153.13.4 Define the concept of sustainability.
- 0153.13.5 Explain different ways to be a responsible environmentalist.

Standard 14: Careers in the Environment (0153.S.14)

Students will research careers options in the environment.

Careers in the Environment Objectives

- 0153.14.1 Set life and career goals.
- 0153.14.2 Identify occupations and careers in the environment.
- 0153.14.3 Research colleges that offer environmental programs of study.

Forestry I

WVEIS Code 0182

This area of study is designed to provide students with basic knowledge and skills in forestry and related occupations. Major instructional concepts included in this area of study are: safety principles in forestry, tree identification, forest protection, basic forest measurement and silvicultural practices.

Standard 1: Leadership Develop (0182.S.1)

Students will demonstrate leadership skills by developing an awareness of the FFA.

Leadership Develop Objectives

Students will:

- 0182.1.1 Identify the year FFA was formed.
- 0182.1.2 Name the author of the creed.
- 0182.1.3 Identify the location of the state and national convention.
- 0182.1.4 Name the state and national FFA advisor.
- 0182.1.5 Name the degree levels in FFA.
- 0182.1.6 Identify parts of the emblem.

Standard 2: Safety Principles in Forestry (0182.S.2)

Students will identify and utilize appropriate safety equipment and regulations.

Safety Principles in Forestry Objectives

Students will:

- 0182.2.1 Wear appropriate safety gear.
- 0182.2.2 Maintain a safe working environment.
- 0182.2.3 Identify safety hazards of fire line construction and mop-up.

Standard 3: Identify Economic Trees in West Virginia (0182.S.3)

Students will demonstrate the skill of tree identification with various methods.

Economic Trees in West Virginia Objectives

Students will:

- 0182.2.1 Identify the following trees: Red Oak, White Ash, White Oak, Basswood, Chestnut Oak, Walnut, Black Oak, Hickory, Scarlet Oak, White Pine, Red Maple, Spruce, Sugar Maple, Hemlock, Black Cherry, Black Locust, Black Birch, Cucumber, Yellow Poplar, Virginia Pine
- 0182.2.2 Identify by leaves.
- 0182.2.3 Identify by bark.
- 0182.2.4 Identify by taste and smell.
- 0182.2.5 Identify by twigs.
- 0182.2.6 Identify by fruit.
- 0182.2.7 Understand tree morphology.

Standard 4: Forest Fire Fighting Procedures (0182.S.4)

Students will demonstrate correct methods and use of proper equipment to control forest fires.

Forest Fire Objectives

Students will:

- 0182.4.1 Construct fire line using hand tools.
- 0182.4.2 Describe the proper use of fire rake, shovel, drip torch, Pulaski and backpack pump.
- 0182.4.3 Extinguish remaining fire spots after main fire is contained (mop-up).
- 0182.4.4 Determine direction for fire line construction.

- 0182.4.5 Repair and service equipment after fire is extinguished.
- 0182.4.6 Use backpack pump to fight fire directly.

Standard 5: Forest Measurement Techniques (0182.S.5)

Students will identify and demonstrate forest measurement techniques.

Forest Measurement Techniques Objectives

Students will:

- 0182.5.1 Set up instrument for surveying.
- 0182.5.2 Use compass to maintain direction.
- 0182.5.3 Make linear measurements using surveyor's chain with compass.
- 0182.5.4 Make linear measurements by pacing with compass.
- 0182.5.5 Calculate the number of acres in a timber tract.
- 0182.5.6 Use hand/staff compass to determine bearing or Azimuth.
- 0182.5.7 Identify units of measurement (mile, rod, chain and acre).

Standard 6: Silviculture Treatment for Timber Stand Improvement (0182.S.6)

Students will identify silvicultural procedures.

Silviculture Treatment Objectives

Students will:

- 0182.6.1 Determine major forest type and primary uses.
- 0182.6.2 Determine proper spacing using D+6 rule.
- 0182.6.3 Use increment borer to determine age and growth rate.
- 0182.6.4 Select and utilize pruning and thinning methods for a timber stand.
- 0182.6.5 Fell and limb trees.

Standard 7: Laboratory Investigations/Hands-On Learning (0182.S.7)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigations Objectives

Students will:

- 0182.7.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0182.7.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0182.7.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0182.7.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations and research.

Forestry II

WVEIS Code 0183

Major instructional concepts included in this area of study are: leadership development, chainsaw operation and safety, timber cruising skills and integration of wildlife habitat management in forestry.

Standard 1: Chainsaw Safety (0183.S.1)

Students will demonstrate proper safety techniques for chainsaw usage.

Chainsaw Safety Objectives

Students will:

- 0183.1.1 Identify and use safety clothing and equipment.
- 0183.1.2 Use proper starting techniques.
- 0183.1.3 Identify proper safety rules with 100% accuracy.
- 0183.1.4 Identify and correct hazardous operational conditions.

Standard 2: Chainsaw Maintenance (0183.S.2)

Students will demonstrate proper chainsaw maintenance.

Chainsaw Maintenance Objectives

Students will:

- 0183.2.1 Properly sharpen chain.
- 0183.2.2 Determine and adjust chain for proper tension.
- 0183.2.3 Demonstrate proper cleaning and storage of chainsaw.
- 0183.2.4 Replace sprocket on chainsaw.
- 0183.2.5 Replace bar on chainsaw.
- 0183.2.6 Replace broken chain link.
- 0183.2.7 Clean and service carburetor and air cleaner.
- 0183.2.8 Replace chain clutch as needed.
- 0183.2.9 Adjust carburetor for maximum efficiency.
- 0183.2.10 Mix fuel and oil in proper proportions.

Standard 3: Determine Volume of Standing Timber (0183.S.3)

Students will correctly calculate the volume of standing timber using various tools and scales.

Volume of Standing Timber Objectives

Students will:

- 0183.3.1 Define and calculate board foot and cord wood volumes.
- 0183.3.2 Measure standing trees at diameter breast height using tree stick and diameter tape.
- 0183.3.3 Determine number of logs per tree using tree stick or clinometers.
- 0183.3.4 Record volume number of individual trees using tally sheet method.
- 0183.3.5 Calculate volume of saw logs using Doyle, Scribner and International 1/4" rule.
- 0183.3.6 Calculate volume of pulpwood by cords.

Standard 4: Wildlife Habitat Management (0183.S.4)

Students will demonstrate proper techniques to develop wild life habitat through forestry practices.

Wildlife Habitat Management Objectives

Students will:

- 0183.4.1 Monitor and improve water quality.
- 0183.4.2 Improve habitat for bird, fish and game.
- 0183.4.3 Understand the importance of the forest, field and edge.

0183.4.4 Identify potential den and mast trees.

Standard 5: Laboratory Investigations – Hands-On Learning (0183.S.5)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigations Objectives

Students will:

- 0183.5.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0183.5.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0183.5.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0183.5.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 6: Technology Applications in Forestry (0183.S.6)

Students will apply technology to investigate real-world problems.

Technology Applications in Forestry Objectives

Students will:

- 0183.6.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in forestry.
 - Locate, evaluate, and collect information from a variety of sources related to forestry.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0183.6.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0183.6.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to forestry.
- 0183.6.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of forestry.

Forestry III

WVEIS Code 0184

This area of study provides instructional concepts in the following areas: personal leadership development, advanced dendrology, safety training, operation and maintenance of forestry equipment and silvicultural applications.

Standard 1: Personal Leadership Skills Development (0184.S.1)

Students will conduct research in the forest industry and make presentations.

Personal Leadership Skills Development Objectives

Student will:

- 0184.1.1 Describe the parts of a good speech.
- 0184.1.2 Explain how to present a desirable speech.
- 0184.1.3 Correctly conduct research in topics concerning forestry.
- 0184.1.4 Deliver a speech on a forestry topic.

Standard 2: Advanced Dendrology Skills (0184.S.2)

Students will demonstrate advanced skills in tree identification.

Advanced Dendrology Skills Objectives

Students will:

- 0184.2.1 Identify by flowers.
- 0184.2.2 Identify by growth characteristics.
- 0184.2.3 Identify by site conditions.
- 0184.2.4 Identify by distribution.

Standard 3: Safety Training in Forestry (0184.S.3)

Students will demonstrate safety practices with equipment used in forestry.

Safety Training Objectives

Students will:

- 0184.3.1 Demonstrate safety with hand tools.
- 0184.3.2 Demonstrate safety with chainsaws.
- 0184.3.3 Demonstrate safety with tractors.
- 0184.3.4 Demonstrate safety on the fire line.

Standard 4: Operation and Maintenance of Forestry Equipment (0184.S.4)

Students will demonstrate operation and maintenance of equipment used in forestry.

Forestry Equipment Objectives

Students will:

- 0184.4.1 Demonstrate the proper use and maintenance of hand tools.
- 0184.4.2 Demonstrate the proper use and maintenance of chainsaws.
- 0184.4.3 Demonstrate the proper use and maintenance of tractors.
- 0184.4.4 Lubricate all grease fittings using proper grease at periodic intervals with appropriate equipment.

Standard 5: Silvicultural Applications for Timber Stands (0184.S.5)

Students will apply silviculture practices in timber stands.

Timber Stands Objectives

Students will:

- 0184.5.1 Demonstrate forest reproduction techniques.
- 0184.5.2 Demonstrate the technique of girdling in the process of removing undesirable trees.
- 0184.5.3 Define clear-cut.

Standard 6: Laboratory Investigations/Hands-on Learning (0184.S.6)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigations Objectives

Students will:

- 0184.6.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0184.6.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0184.6.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0184.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 7: Technology Applications in Forestry (0184.S.7)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0184.7.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in forestry.
 - Locate, evaluate, and collect information from a variety of sources related to forestry.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0184.7.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0184.7.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to forestry.
- 0184.7.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of forestry.

Forestry IV

WVEIS Code 0185

Forestry IV provides instructional concepts in the following areas: parliamentary procedure, advanced leadership skills, safety in fire fighting, forest surveying and wood product utilization.

Standard 1: Parliamentary Procedure (0185.S.1)

Students will demonstrate parliamentary procedure.

Parliamentary Procedure Objectives

Students will:

- 0185.1.1 Identify proper procedures for conducting a meeting.
- 0185.1.2 Write and present a committee report.
- 0185.1.3 Identify components of a program of activities.

Standard 2: Safety Procedures in Fire Line Construction (0185.S.2)

Students will demonstrate procedures to safely construct a fire line.

Fire Line Construction Objectives

Students will:

- 0185.2.1 Explain fire line safety.
- 0185.2.2 Explain fire line construction.
- 0185.2.3 Explain forest fire mop-up.
- 0185.2.4 Explain the use of topographic maps in locating access roads and trails.
- 0185.2.5 Explain the use of topographic maps in fire location.
- 0185.2.6 Repair, service and store equipment.

Standard 3: Use of Forest Surveying Equipment (0185.S.3)

Students will utilize equipment necessary to survey a forest.

Forest Surveying Equipment Objectives

Students will:

- 0185.3.1 Interpret surface features using aerial photography and topographic maps.
- 0185.3.2 Conduct a boundary survey using a hand compass and pacing.
- 0185.3.3 Visit a courthouse and conduct a title search.
- 0185.3.4 Plot bearings from deeds.
- 0185.3.5 Calculate percent slope using a clinometer.
- 0185.3.6 Orientate topographic map using hand compass.
- 0185.3.7 Utilize a GPS receiver to locate and mark points of reference.

Standard 4: Utilization of Best Management Practices (0185.S.4)

Students will describe the best management practices in forest road construction.

Best Management Practices Objectives

Students will:

- 0185.4.1 Lay out roads in compliance with West Virginia forest standards.
- 0185.4.2 Describe maintenance procedures for drainage systems (culverts, ditches, etc.) in controlling soil erosion.
- 0185.4.3 Describe the process of installing culverts, water breaks and Awoods@ bridges.
- 0185.4.4 Design skid roads.
- 0185.4.5 Monitor water quality.
- 0185.4.6 Reseed skid trails and log landings.

Standard 5: Wood Products Utilization (0185.S.5)

Students will process, measure and market forest products.

Wood Products Utilization Objectives

Students will:

- 0185.5.1 Demonstrate competency in felling, bucking and skidding selected trees.
- 0185.5.2 Scale logs and lumber.
- 0185.5.3 Explore and explain various marketing opportunities for forest products.

Standard 6: Laboratory Investigations – Hands-On Learning (0185.S.6)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigations Objectives

Students will:

- 0185.6.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0185.6.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0185.6.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0185.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 7: Technology Applications in Forestry (0185.S.7)

Students will apply technology to investigate real-world problems.

Forestry Objectives

Students will:

- 0185.7.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in forestry.
 - Locate, evaluate, and collect information from a variety of sources related to forestry.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0185.7.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0185.7.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to forestry.
- 0185.7.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of forestry.

Forestry V

WVEIS Code 0186

This course provides instruction in the following areas: forestry equipment use, timber cruising systems and application of best management practices to forestry.

Standard 1: Forestry Equipment: Identification and Use (0186.S.1)

Students will demonstrate safe use of forestry equipment.

Forestry Equipment Objectives

Students will:

- 0186.1.1 Identify and use the following: Tree Scale Stick, Increment Bore, Drip Torch, Fire Rake, Clinometers, Hand Compass, Soil Tube, Jacobs Staff, Staff Compass, Chaps, Hard Hat/Face, Shield, Pulaski, Tree Marking Gun, Wedge Prism, Stereoscope, Log Rule, Data Recorder, Plastic Flagging, Chainsaw, Ear Protection, Dot Grid, Dibble or Tree Planter

Standard 2: Conduct a Timber Cruise (0186.S.2)

Students will demonstrate skills needed to conduct a timber cruise using various equipment.

Timber Cruise Objectives

Students will:

- 0186.2.1 Mark boundaries and corners of tract.
- 0186.2.2 Use compass to direct cruising operation.
- 0186.2.3 Measure distance between plot center (by pacing).
- 0186.2.4 Record trees using tally sheet method.
- 0186.2.5 Use wedge prism (BAF 10 or BAF 20).
- 0186.2.6 Calculate board foot volumes using double log scale.

Standard 3: Application of Best Management Practices (0186.S.3)

Students will apply best management practices in a forestry setting.

Application of Best Management Practices Objectives

Students will:

- 0186.3.1 Lay out roads in compliance with West Virginia forest standards.
- 0186.3.2 Describe maintenance procedures for drainage systems (culverts, ditches, etc.) in controlling soil erosion.
- 0186.3.3 Understand the importance of installing culverts, water breaks and "woods" bridges.
- 0186.3.4 Design skid roads.
- 0186.3.5 Demonstrate competency in felling, bucking and skidding selected trees.
- 0186.3.6 Scale logs and lumber.
- 0186.3.7 Monitor water quality.
- 0186.3.8 Reseed skid trails and log landings.

Standard 4: Laboratory Investigations – Hands-On Learning (0186.S.4)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigations Objectives

Students will:

- 0186.4.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0186.4.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0186.4.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.

- 0186.4.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 5: Technology Applications in Forestry (0186.S.5)

Students will apply technology to investigate real-world problems.

Technology Applications in Forestry Objectives

Students will:

- 0186.5.1 Use computers and the World Wide Web (WWW) to:
- Solve problems related to work-based experience programs in forestry.
 - Locate, evaluate, and collect information from a variety of sources related to forestry.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0186.5.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0186.5.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to forestry.
- 0186.5.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of forestry.

Standard 6: Process/Workplace Skills in Forestry (0186.S.6)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0186.6.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0186.6.2 Explore careers available in forestry.
- 0186.6.3 Use a variety of sources to investigate the educational requirements of various careers in forestry.
- 0186.6.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0186.6.5 Demonstrate correct language usage in all oral and written work.
- 0186.6.6 Perform effectively in both leadership and non-leadership roles.
- 0186.6.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0186.6.8 Participate as a team member to complete a variety of assignments.

Forestry Science And Ecology

WVEIS Code 0187

This area of study is designed to provide both college bound students and work bound students with the basic skills and knowledge needed in the forestry industry. Major instructional concepts include the scientific aspects of dendrology, silviculture, integrated wildlife management and ecology. Additionally, the student will study safety, surveying and measuring timber.

Standard 1: Leadership Development (0187.S.1)

Students will demonstrate leadership skills by developing an awareness of the FFA.

Leadership Development Objectives

Students will:

- 0187.1.1 Identify the year FFA was formed.
- 0187.1.2 Name the author of the creed.
- 0187.1.3 Identify the location of the state and national convention.
- 0187.1.4 Name the state and national FFA advisor.
- 0187.1.5 Name the degree levels in FFA.
- 0187.1.6 Identify parts of the emblem.

Standard 2: Safety (0187.S.2)

Students will identify and utilize appropriate safety procedures associated with forestry.

Safety Objectives

Students will:

- 0187.2.1 Wear appropriate safety gear.
- 0187.2.2 Maintain a safe working environment.
- 0187.2.3 Identify and use safety clothing and equipment.
- 0187.2.4 Identify proper safety rules with 100% accuracy.
- 0187.2.5 Identify and correct hazardous operational conditions.

Standard 3: Fire Line Safety (0187.S.3)

Students will demonstrate appropriate safety practices involved in creating a fire line.

Fire Line Safety Objectives

Student will:

- 0187.3.1 Identify fire fighting tools.
- 0187.3.2 Explain fire line safety.
- 0187.3.3 Explain fire line construction.
- 0187.3.4 Explain forest fire mop-up.
- 0187.3.5 Explain the use of topographic maps in location access roads and trails.
- 0187.3.6 Explain the use of topographic maps in fire location.

Standard 4: Forestry Equipment (0187.S.4)

Students will identify equipment associated with forestry and explain their use.

Forestry Equipment Objectives

Students will:

- 0187.4.1 Identify by sight: Tree Scale Stick, Increment Bore, Drip Torch, Fire Rake, Clinometers, Hand Compass, Soil Tube, Jacobs Staff, Staff Compass, Chaps, Hard Hat/Face, Shield, Pulaski, Tree Marking Gun, Wedge Prism, Stereoscope, Log Rule, Data Recorder, Plastic Flagging, Chainsaw, Ear Protection, Dot Grid, Dibble or Tree Planter
- 0187.4.2 Explain the use of each tool.

Standard 5: Dendrology (0187.S.5)

Students will demonstrate appropriate tree identification techniques.

Dendrology Objectives

Students will:

- 0187.5.1 Identify by leaves.
- 0187.5.2 Identify by bark.
- 0187.5.3 Identify by twigs.
- 0187.5.4 Identify by fruit.

Standard 6: Measurements (0187.S.6)

Students will demonstrate various methods of measurements involving forestland and product measurements.

Measurements Objectives

Students will:

- 0187.6.1 Organize and set up instruments for surveying.
- 0187.6.2 Use compass to maintain direction.
- 0187.6.3 Make linear measurements using surveyor's chain with compass.
- 0187.6.4 Make linear measurements by pacing with compass.
- 0187.6.5 Calculate the number of acres in a timber tract.
- 0187.6.6 Use hand/staff compass to determine bearing or Azimuth.
- 0187.6.7 Identify units of measurement (mile, rod, chain and acre.)
- 0187.6.8 Define and calculate board foot and cord wood volumes.
- 0187.6.9 Measure standing trees at diameter breast height using tree stick and diameter tape.
- 0187.6.10 Determine number of logs per tree using tree stick or clinometer.
- 0187.6.11 Record volume number of individual trees using tally sheet method.
- 0187.6.12 Calculate volume of saw logs using Doyle, Scribner and International 1/4" rule.
- 0187.6.13 Calculate volume of pulpwood by cords.
- 0187.6.14 Interpret surface features using aerial photography and topographic maps.
- 0187.6.15 Conduct a boundary survey using hand compass and pacing.
- 0187.6.16 Calculate percent slope using a clinometer.
- 0187.6.17 Orientate topographic map using hand compass.
- 0187.6.18 Mark boundaries and corners of tract.
- 0187.6.19 Use compass to direct cruising operation.
- 0187.6.20 Measure distance between plot center (by pacing).
- 0187.6.21 Record trees using tally sheet method.
- 0187.6.22 Use wedge prism (BAF 10 or BAF 20).
- 0187.6.23 Calculate board foot volumes using double log scale.

Standard 7: Silviculture (0187.S.7)

Students will utilize various silviculture practices.

Silviculture Objectives

Students will:

- 0187.7.1 Determine major forest type and primary uses.
- 0187.7.2 Determine proper spacing using D+6 rule.
- 0187.7.3 Use increment borer to determine age and growth rate.
- 0187.7.4 Recognize insect and disease damage and mark damaged area for salvage.
- 0187.7.5 Identify forest reproduction techniques.
- 0187.7.6 Demonstrate the technique of girdling in the process of removing undesirable trees.
- 0187.7.7 Define clear-cutting.

Standard 8: Wildlife (0187.S.8)

Students will demonstrate correct wildlife management skills.

Wildlife Objectives

Students will:

- 0187.8.1 Monitor and improve water quality.
- 0187.8.2 Improve habitat for bird, fish and game.
- 0187.8.3 Understand the importance of the forest, field and edge.
- 0187.8.4 Identify potential den and mast trees.

Standard 9: Best Management Practices (0187.S.9)

Students will demonstrate an awareness of best management practices used in forestry.

Best Management Practices Objectives

Students will:

- 0187.9.1 Describe maintenance procedures for drainage systems (culverts, ditches, etc.) in controlling soil erosion.
- 0187.9.2 Understand the importance of installing culverts, water breaks and "woods" bridges.
- 0187.9.3 Design skid roads.
- 0187.9.4 Monitor water quality.

Natural Resource Management I

WVEIS Code 0188

This agricultural science course is designed to provide students with science concepts and skills in natural resource management that will be useful in various occupations in the field. Major emphasis will be on the scientific concepts involving air, water, aquatic life, wildlife management and recreation. Interaction of ecosystems and their relationship to human populations will be studied. This field of study will prepare students for entry-level occupations in the natural resources area.

Standard 1: Natural Resource and the Environment (0188.S.1)

Students will describe the relationship between natural resources and the environment.

Natural Resource and the Environment Objectives

Students will:

- 0188.1.1 Identify exhaustible and inexhaustible resources.
- 0188.1.2 Explain the importance of natural resources.
- 0188.1.3 Describe the interaction of people with the environment.

Standard 2: Air and Quality (0188.S.2)

Students will explain the importance of air and maintaining its quality.

Air and Quality Objectives

Students will:

- 0188.2.1 Identify air pollutants and their sources.
- 0188.2.2 Describe the effect of air pollution on humans, other living things and materials.
- 0188.2.3 Sample, monitor and analyze air quality for physical and chemical properties.
- 0188.2.4 Examine wind (air) as an alternative energy source.

Standard 3: Water Quality (0188.S.3)

Students will explain the importance of water and maintaining its quality.

Water Quality Objectives

Students will:

- 0188.3.1 Identify sources of water and water pollutants.
- 0188.3.2 Explain the effect of water pollution on the ecosystem.
- 0188.3.3 Describe the hydroponical cycle.
- 0188.3.4 Identify point and non-point source pollution.
- 0188.3.5 Describe wetlands, their use, importance and preservation.
- 0188.3.6 Identify uses of water in agriculture.
- 0188.3.7 Explain methods of managing wastewater.
- 0188.3.8 Determine composition of wastewater using water-testing equipment.
- 0188.3.9 Explain methods of protecting water sources.

Standard 4: Aquatic Life (0188.S.4)

Students will demonstrate aquatic life and natural resource management skills.

Aquatic Life Objectives

Students will:

- 0188.4.1 Identify game fish species and other aquatic wildlife.
- 0188.4.2 Explain water quality requirements for aquatic wildlife.
- 0188.4.3 Explain fishing laws and regulations.
- 0188.4.4 Describe fish hatchery techniques.

- 0188.4.5 Check for pond oxygen deficiency and prescribe remedial programs.
- 0188.4.6 Explain stratification and fish adaptability.
- 0188.4.7 Identify a management plan for a designated stream, lake or pond.

Standard 5: Wildlife (0188.S.5)

Students will demonstrate of wildlife management skills.

Wildlife Objectives

Students will:

- 0188.5.1 Identify and classify species of birds and wildlife animals.
- 0188.5.2 List governmental agencies concerned with wildlife conservation.
- 0188.5.3 Outline a plan for stimulating native and introduced game populations.
- 0188.5.4 Outline a plan for hatching game bird eggs.
- 0188.5.5 Identify common diseases of game birds and animals.
- 0188.5.6 Identify practices that can be used to protect wildlife.
- 0188.5.7 Evaluate wildlife food and cover crops.
- 0188.5.8 Estimate animal populations on given areas of land.

Standard 6: Outdoor Recreation (0188.S.6)

Students will demonstrate competencies in outdoor recreation management.

Outdoor Recreation Objectives

Students will:

- 0188.6.1 List demands by the public for different types of outdoor recreation experiences.
- 0188.6.2 Recognize types of natural resources recreational areas and the service and facilities required.
- 0188.6.3 Recognize the income potential from various types of recreational enterprises.
- 0188.6.4 Identify business procedures required of a recreational enterprise.
- 0188.6.5 Describe local, state and federal laws pertaining to given enterprises.
- 0188.6.6 Design advertising media to promote a recreation area effectively.

Standard 7: Leadership (0188.S.7)

Students will demonstrate leadership skills in natural resource management.

Leadership Objectives

Students will:

- 0188.7.1 Participate in FFA meetings and activities.
- 0188.7.2 Utilize record keeping skills in work-based experience programs (SAE).

Standard 8: Laboratory Investigations (0188.S.8)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigations Objectives

Students will:

- 0188.8.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0188.8.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0188.8.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0188.8.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 9: Technology Applications (0188.S.9)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0188.9.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in natural resource management.
 - Locate, evaluate, and collect information from a variety of sources related to natural resource management.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0188.9.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0188.9.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to natural resource management.
- 0188.9.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of natural resource management.

Standard 10: Process/Workplace Skills (0188.S.10)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0188.10.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0188.10.2 Explore careers available in natural resource management.
- 0188.10.3 Use a variety of sources to investigate the educational requirements of various careers in natural resource management.
- 0188.10.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0188.10.5 Demonstrate correct language usage in all oral and written work.
- 0188.10.6 Perform effectively in both leadership and non-leadership roles.
- 0188.10.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0188.10.8 Participate as a team member to complete a variety of assignments.

Natural Resource Management II

WVEIS Code 0189

This agricultural science course is designed to provide students with advanced science concepts and skills in natural resource management. Major emphasis will be on soil, forestry, and land use planning including solid waste and hazardous waste disposal and soil fertility. This field of study prepares students for entry-level occupations in the area of natural resources management.

Standard 1: Occupations in Natural Resources (0189.S.1)

Students will describe the occupations related to natural resources.

Occupations in Natural Resources Objectives

Students will:

- 0189.1.1 Identify occupations in natural resource management.
- 0189.1.2 Determine requirements for occupational entry in natural resource management fields.
- 0189.1.3 Identify typical activities performed by natural resource workers.

Standard 2: Soils (0189.S.2)

Students will explain soils and their role in natural resource management.

Soils Objectives

Students will:

- 0189.2.1 Identify factors that affect soil formation and describe the significance of each.
- 0189.2.2 Make "feel" tests of wet and dry soil samples and classify each as sandy, loamy or clayey.
- 0189.2.3 Determine percentage of sand, loam and clay in soil samples and classify according to texture.
- 0189.2.4 Classify samples of topsoil in one of the three color groups.
- 0189.2.5 Determine pH values of soil.
- 0189.2.6 Classify soils with respect to permeability.
- 0189.2.7 Determine moisture content of soil.
- 0189.2.8 Recognize causes of soil erosion.
- 0189.2.9 Categorize soils into their land use capability classes.
- 0189.2.10 Identify appropriate erosion control measures for soils.
- 0189.2.11 Read soil maps and interpret terms and symbols.
- 0189.2.12 Develop a conservation land use plan for a farm.

Standard 3: Soil Fertility (0189.S.3)

Students will perform competencies related to maintaining soil fertility.

Soil Fertility Objectives

Students will:

- 0189.3.1 Collect soil samples, complete data forms and submit to a laboratory for analysis.
- 0189.3.2 Test soil for acidity or alkalinity and prescribe remedial measures.
- 0189.3.3 Make plant tissue analyses.
- 0189.3.4 Explain analysis data on a fertilizer tag.
- 0189.3.5 Identify macronutrients and their deficiency symptoms.

Standard 4: Forestry (0189.S.4)

Students will explain the role of forestry principles in natural resource management.

Forestry Objectives

Students will:

- 0189.4.1 Relate benefits of forest resources to land, human and economic requirements.

- 0189.4.2 Recognize and name forest products.
- 0189.4.3 Identify tree parts and their functions.
- 0189.4.4 Identify common tree species.
- 0189.4.5 Plant tree seedlings using approved practices.
- 0189.4.6 Identify common tree pests and diseases.
- 0189.4.7 Prescribe control measures for pests and diseases.
- 0189.4.8 Describe the effect of forest fires on the forest floor.
- 0189.4.9 Identify fire suppression tools and equipment and state their functions.

Standard 5: Land Use Planning (0189.S.5)

Students will describe the principles of land use planning.

Land Use Planning Objectives

Students will:

- 0189.5.1 Outline steps in the land use planning process.
- 0189.5.2 Assemble information pertinent to developing a comprehensive plan.
- 0189.5.3 Describe functions of comprehensive plans and zoning ordinances.
- 0189.5.4 Obtain distances by pacing and using steel tapes.
- 0189.5.5 Use appropriate equipment to conduct a basic survey.
- 0189.5.6 Give legal descriptions of selected plots of land.
- 0189.5.7 Run a traverse with the surveyor's staff compass.

Standard 6: Minerals (0189.S.6)

Students will explain the role of minerals in natural resource management.

Minerals Objectives

Students will:

- 0189.6.1 Identify and classify samples of rocks and minerals common to the state.
- 0189.6.2 Describe formation of coal in the earth's crust.
- 0189.6.3 List functions of common minerals.
- 0189.6.4 Describe procedures in locating, extracting and processing minerals.
- 0189.6.5 Describe the impact of mining on the environment.
- 0189.6.6 Identify methods of mineral conservation.
- 0189.6.7 Identify a plan for restoration of an area that has been disturbed by mineral extraction.

Standard 7: Solid Waste (0189.S.7)

Students will describe the concepts of solid waste management.

Solid Waste Objectives

Students will:

- 0189.7.1 Describe kinds and sources of solid waste.
- 0189.7.2 Explain hazards in solid waste materials and disposal.
- 0189.7.3 Describe methods of solid waste disposal.
- 0189.7.4 Explain recycling.
- 0189.7.5 Describe composting.
- 0189.7.6 Explore methods and benefits of composting.

Standard 8: Hazardous Waste (0189.S.8)

Students will describe the concepts of hazardous waste management.

Hazardous Waste Objectives

Students will:

- 0189.8.1 Explain hazardous waste.
- 0189.8.2 Describe ecotoxicology.
- 0189.8.3 Explain disposing of hazardous waste.
- 0189.8.4 Explain safety procedures and clean-up of spills.

Standard 9: Leadership (0189.S.9)

Students will demonstrate leadership skills in natural resource management.

Leadership Objectives

Students will:

- 0189.9.1 Participate in FFA meetings and activities.

Standard 10: Supervised Agricultural Experience Program (SAE) (0189.S.10)

Students will conduct a supervised agricultural experience program.

SAE Objectives

Students will:

- 0189.10.1 Conduct an experience program in the natural resource management area.
- 0189.10.2 Maintain appropriate records on the experience program.

Standard 11: Laboratory Investigations (0189.S.11)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigations Objectives

Students will:

- 0189.11.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0189.11.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0189.11.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0189.11.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 12: Technology Applications (0189.S.12)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0189.12.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in natural resource management.
 - Locate, evaluate, and collect information from a variety of sources related to natural resource management.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0189.12.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0189.12.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to natural resource management.
- 0189.12.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of natural resource management.

Standard 13: Process/Workplace Skills (0189.S.13)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0189.13.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0189.13.2 Explore careers available in natural resource management.
- 0189.13.3 Use a variety of sources to investigate the educational requirements of various careers in biotechnology and related sciences.
- 0189.13.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0189.13.5 Demonstrate correct language usage in all oral and written work.
- 0189.13.6 Perform effectively in both leadership and non-leadership roles.
- 0189.13.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0189.13.8 Participate as a team member to complete a variety of assignments.

Wildlife Management

WVEIS Code 0190

This course provides instruction and training in leadership, history of fish and wildlife, wildlife management concepts, water and water quality, habitat management, life history and wildlife values as a natural resource.

Standard 1: Leadership and Communication Development (0190.S.1)

Students will demonstrate leadership skills through personal, organizational and workplace experiences.

Leadership and Communication Development Objectives

Students will:

- 0190.1.1 Identify FFA history.
- 0190.1.2 Demonstrate proper use of parliamentary procedure.
- 0190.1.3 Participate in FFA activities.
- 0190.1.4 Prepare and deliver a brief presentation on a wildlife or natural resource topic.

Standard 2: History of Wildlife Management (0190.S.2)

Students will describe the importance of wildlife management and its impact on conservation.

History of Wildlife Management Objectives

Students will:

- 0190.2.1 Define and describe wildlife trends and their impact on management.
- 0190.2.2 Identify wildlife legalities and ethics.
- 0190.2.3 Define natural resources conservation.

Standard 3: Concepts of Wildlife Management (0190.S.3)

Students will describe the relationships between wildlife, humans and the ecosystem.

Concepts of Wildlife Management Objectives

- 0190.3.1 Define succession stages related to wildlife management.
- 0190.3.2 Describe carrying capacity as related to wildlife.
- 0190.3.3 Define horizontal and vertical structuring.
- 0190.3.4 Explain ecological principles and their application to wildlife management.

Standard 4: Habitat Management Practices (0190.S.4)

Students will determine the relationship between wildlife and the environment with approved practices in managing wildlife habitat.

Habitat Management Practices Objectives

Students will:

- 0190.4.1 Explain ecological principles applied to fish and wildlife.
- 0190.4.2 Design a wildlife management plan.
- 0190.4.3 Identify forest management practices for improving habitat.
- 0190.4.4 Identify agricultural management practices for improvement of habitat.
- 0190.4.5 Define and describe wetlands and their use.
- 0190.4.6 Identify government assistance available for habitat improvement.
- 0190.4.7 Construct and erect wildlife feeders/nest boxes.

Standard 5: Animal Life Histories (0190.S.5)

Students will use technology to identify the characteristics of wildlife and the relationship between species.

Animal Life Histories Objectives

Students will:

- 0190.5.1 Identify life cycles of wildlife species.
- 0190.5.2 Describe interrelationship of wildlife species.
- 0190.5.3 Identify common relationships between humans and wildlife.
- 0190.5.4 Search the Internet to secure wildlife information.

Standard 6: Water and Water Quality (0190.S.6)

Students will determine the relationships between water and the environment and the recommended practices for conserving these resources.

Water Objectives

Students will:

- 0190.6.1 Identify sources of water and water pollutants.
- 0190.6.2 Explain the effects to water pollution on the ecosystem.
- 0190.6.3 Identify point and non-point source pollution and describe possible controls.
- 0190.6.4 Describe wetlands, their use, importance and preservation.
- 0190.6.5 Explain methods of protecting water sources.

Standard 7: Wildlife Values as a Resource (0190.S.7)

Students will describe the benefit of wildlife as a resource to society.

Wildlife Values Objectives

Students will:

- 0190.7.1 Identify commercial value of fish and wildlife resources and economic benefit to people.
- 0190.7.2 Define recreational values of fish and wildlife.
- 0190.7.3 Describe social values of fish and wildlife.
- 0190.7.4 Identify esthetic values of fish and wildlife resources.
- 0190.7.5 Describe scientific and educational values of fish and wildlife.
- 0190.7.6 Evaluate negative impact of wild animals on humans.

Standard 8: Develop a Work-Based Experiential Program (SAE) in Wildlife Management (0190.S.8)

Students will explore careers and learn the rationale for and plan a SAE.

SAE Objectives

Students will:

- 0190.8.1 Define and explain supervised experience programs in agricultural and natural resources.
- 0190.8.2 Explore opportunities for work-based learning in natural resources.
- 0190.8.3 Define record keeping terms for supervised experience programs.
- 0190.8.4 Establish a supervised experience program in agriculture or natural resources.

Grounds Maintenance

WVEIS Code 0201

This course is designed to provide students with basic knowledge, skills and attitudes necessary for successful entry into a grounds maintenance occupation.

Standard 1: Leadership and Communication Development (0201.S.1)

Students will demonstrate leadership skills through personal, organizational and workplace activities.

Leadership and Communication Development Objectives

Students will:

- 0201.1.1 Participate in FFA activities and programs.
- 0201.1.2 Prepare and deliver short speeches.
- 0201.1.3 Identify interview and employment readiness skills.
- 0201.1.4 Prepare a resume.

Standard 2: Grounds Maintenance Tools and Equipment (0201.S.2)

Students will practice and demonstrate safety with ground maintenance tools, equipment and activities.

Grounds Maintenance Tools and Equipment Objectives

Students will:

- 0201.2.1 Identify tools and equipment used in grounds maintenance.
- 0201.2.2 Perform maintenance and service operations on tools and equipment.
- 0201.2.3 Use tools and equipment safely under job site conditions.
- 0201.2.4 Identify and safely use potentially hazardous fuels.

Standard 3: Control Pests in Lawns, Flowers and Shrubs (0201.S.3)

Students will explain the practices of safe pesticide use and the concept of integrated pest management.

Control Pests in Lawns, Flowers and Shrubs Objectives

Students will:

- 0201.3.1 Identify, calibrate and safely use equipment.
- 0201.3.2 Identify and use personal safety clothing and equipment.
- 0201.3.3 Identify common pests, diseases and appropriate control techniques including integrated pest management (IPM).
- 0201.3.4 Read and demonstrate understanding of pesticide labels.

Standard 4: Plant and Maintain Lawns, Flower Beds, and Shrubs (0201.S.4)

Students will demonstrate practices pertaining to the establishment and maintenance of lawns, flower beds and shrubs.

Plant and Maintain Lawns, Flower Beds, and Shrubs Objectives

Students will:

- 0201.4.1 Identify safe and appropriate mowing techniques.
- 0201.4.2 Use an edger following safety procedures.
- 0201.4.3 Aerate and dethatch turf.
- 0201.4.4 Irrigate lawn, flowers and shrubs.
- 0201.4.5 Take soil samples using correct procedures.
- 0201.4.6 Analyze soil test results and determine fertilizer needs.
- 0201.4.7 Apply fertilizer and lime to various areas.
- 0201.4.8 Prune shrubs according to recommended practices.
- 0201.4.9 Mulch landscape plants.
- 0201.4.10 Provide appropriate winter protection for plants.

Standard 5: Construct and Maintain Grounds Structures (0201.S.5)

Students will build and maintain permanent structures within a landscaped design.

Grounds Structures Objectives

Students will:

- 0201.5.1 Mix and pour concrete.
- 0201.5.2 Build and maintain wood structures.
- 0201.5.3 Seal asphalt walks and driveways.

Standard 6: Developing Work-Based Experiential Program (SAE) (0201.S.6)

Students will explore careers and plan a SAE.

SAE Objectives

Students will:

- 0201.6.1 Explore opportunities for supervised agricultural experience programs.
- 0201.6.2 Establish a supervised agricultural experience program in grounds maintenance.
- 0201.6.3 Maintain records of experience program activities, expenses and earnings.

Horticulture

WVEIS Code 0212

Horticulture includes art, science and technology. This field of study explains concepts of plant growth and how plants are used in our environment for aesthetics, ecosystems and as plant products for human consumption. Students will gain skills for entry-level employment or entrance into an advanced training/degree program.

Standard 1: Leadership Development (0212.S.1)

Students will participate in various FFA activities.

Leadership Development Objectives

Students will:

- 0212.1.1 Demonstrate an awareness of FFA and its components.
- 0212.1.2 Utilize record-keeping skills in work-based experience programs.
- 0212.1.3 Develop and exhibit communication skills.
- 0212.1.4 Draft and complete a resume, complete a job application, and demonstrate job seek/keep skills.
- 0212.1.5 Demonstrate personal and social skills.
- 0212.1.6 Research career opportunities in the greenhouse management industry.

Standard 2: Plant Classification and Identification (0212.S.2)

Students will identify the different plant classification.

Plant Classification and Identification Objectives

Students will:

- 0212.2.1 Develop an understanding of the natural classification system for the plant kingdom.
- 0212.2.2 Identify plant species and explore their benefit to people.
- 0212.2.3 Identify and research plants that are important to the greenhouse industry.
- 0212.2.4 Describe the plant processes involved with plant growth and development.
- 0212.2.5 List plant growth regulators and document their effects on plants.
- 0212.2.6 Explain how essential elements become available for plant use.
- 0212.2.7 Identify and document the effects of environmental factors on plant growth.
- 0212.2.8 Compare and contrast types of plant-growing media.
- 0212.2.9 Determine appropriate amendments for optimum plant growth.
- 0212.2.10 Explain and utilize soil and water conservation practices.

Standard 3: Plant Processes and Propagation (0212.S.3)

Students will identify the levels of plants processes and propagation.

Plant Processes and Propagation Objectives

Students will:

- 0212.3.1 Perform methods of propagating plants.
- 0212.3.2 Manipulate total environment from juvenile to mature plant.
- 0212.3.3 Demonstrate knowledge of plant growth and propagation processes including photosynthesis, respiration, transpiration and pollination.

Standard 4: Pest Management (0212.S.4)

Students will identify proper pesticide use and pest management.

Pest Management Objectives

Students will:

- 0212.4.1 Explain and apply the concepts of integrated pest management.

- 0212.4.2 Identify safety guidelines for tools, equipment and pesticide use.
- 0212.4.3 Identify pests and evaluate control methods according to label interpretation.
- 0212.4.4 Recognize, calibrate and operate pesticide application equipment.
- 0212.4.5 Research and discuss the environmental and health concerns relating to pesticide usage.
- 0212.4.6 Demonstrate knowledge of and interpret federal and state pesticide laws.

Standard 5: Selected Specialty Areas in Horticulture (0212.S.5)

Students will identify the various specialty areas in horticulture.

Specialty Areas in Horticulture Objectives

Students will:

- 0212.5.1 Explore professions in floriculture and understand the scope of job opportunities.
- 0212.5.2 Demonstrate various techniques and procedures commonly used in the floriculture industry.
- 0212.5.3 Explore professions in greenhouse management and understand the scope of job opportunities.
- 0212.5.4 Demonstrate various techniques and procedures commonly used in the greenhouse management industry.
- 0212.5.5 Explore professions in nursery production and understand job requirements.
- 0212.5.6 Demonstrate techniques and procedures used in the nursery production industry.
- 0212.5.7 Research careers in the landscape and turf industry.
- 0212.5.8 Perform basic landscape design, plantings and maintenance techniques.
- 0212.5.9 Utilize Internet World Wide Web to explore specialty areas in horticulture.

Standard 6: Laboratory Investigation (0212.S.6)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0212.6.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0212.6.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0212.6.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0212.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 7: Technology Applications (0212.S.7)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0212.7.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in horticulture.
 - Locate, evaluate, and collect information from a variety of sources related to horticulture.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0212.7.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0212.7.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to horticulture.
- 0212.7.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of horticulture.

Standard 8: Process/Workplace Skills (0212.S.8)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0212.8.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0212.8.2 Explore careers available in horticulture.
- 0212.8.3 Use a variety of sources to investigate the educational requirements of various careers in horticulture.
- 0212.8.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0212.8.5 Demonstrate correct language usage in all oral and written work.
- 0212.8.6 Perform effectively in both leadership and non-leadership roles.
- 0212.8.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0212.8.8 Participate as a team member to complete a variety of assignments.

Floriculture

WVEIS Code 0213

Floriculture introduces students to careers in the floral industry and provides basic instruction in the techniques of floral design and merchandising.

Standard 1: Leadership and Communication Development (0213.S.1)

Students will demonstrate leadership skills through personal, organizational and workplace experiences.

Leadership and Communication Development Objectives

Students will:

- 0213.1.1 Describe FFA and its components.
- 0213.1.2 Utilize record-keeping skills in work-based experience programs (SAE).
- 0213.1.3 Identify appropriate career opportunities in the floriculture industry.
- 0213.1.4 Draft and prepare a resume, fill out a job application, demonstrate employability skills.
- 0213.1.5 Develop personal relation and communication skills.
- 0213.1.6 Demonstrate an awareness of employment and floriculture industry ethics.

Standard 2: Principles of Design (0213.S.2)

Students will utilize principles of design to critique floral designs.

Principles of Design Objectives

Students will:

- 0213.2.1 Utilize floriculture principles, elements and theory of design.
- 0213.2.2 Identify basic designs and arrangements associated with floriculture principles of design.
- 0213.2.3 Understand the concepts and use of color.

Standard 3: Cut Flowers and Greens (0213.S.3)

Students will identify and maintain commonly used cut flowers and foliage.

Cut Flowers and Greens Objectives

Students will:

- 0213.3.1 Identify and classify flowers and foliage.
- 0213.3.2 Understand the techniques to maintain optimum flower and foliage quality.

Standard 4: Floral Materials and Supplies (0213.S.4)

Students will identify and manipulate materials and supplies used in floral design.

Floral Materials and Supplies Objectives

Students will:

- 0213.4.1 Identify the basic mechanics and supplies used in floral design.
- 0213.4.2 Identify materials to wire flowers for corsages, arrangements and wreaths.
- 0213.4.3 Demonstrate construction of bows.

Standard 5: Selected Specialty Areas (0213.S.5)

Students will design the appropriate product according to the occasion.

Selected Specialty Areas Objectives

Students will:

- 0213.5.1 Design boutonnieres and corsages.
- 0213.5.2 Understand concepts in floral design of holiday arrangements.
- 0213.5.3 Identify designs for weddings and receptions.

- 0213.5.4 Recognize practice in sympathy floral designs.
- 0213.5.5 Dry and preserve flowers and foliage to make a dried flower presentation.
- 0213.5.6 Explain appropriate indoor planting schemes, construction and maintenance.

Standard 6: Floral Operations and Management (0213.S.6)

Students will develop strategies and understand the components used in floral operations and management.

Floral Operations and Management Objectives

Students will:

- 0213.6.1 Develop skills in retail sales using various selling techniques.
- 0213.6.2 Develop a visual merchandising plan to project the right image.
- 0213.6.3 Identify the components and the importance of a floral delivery system.
- 0213.6.4 Identify professional trade organizations organized to assist the retail florist.

Greenhouse Technology

WVEIS Code 0214

This area of study is designed to provide both college bound students and work bound students with the basic skills and knowledge needed in the greenhouse management industry. Major instructional concepts provide students with individual goals and objectives including: plant environments, classification, plant processes, growing media, plant nutrients, propagation, growth, pests and management procedures, nursery and landscape techniques, structures operation and maintenance and advanced greenhouse practice and technologies.

Standard 1: Leadership Development (0214.S.1)

Students will participate in various FFA activities.

Leadership Development Objectives

Students will:

- 0214.1.1 Demonstrate an awareness of FFA and its components.
- 0214.1.2 Utilize record-keeping skills in work-based experience programs.
- 0214.1.3 Develop and exhibit communication skills.
- 0214.1.4 Draft and complete a resume, complete a job application, and demonstrate job seek/keep skills.
- 0214.1.5 Demonstrate personal and social skills.
- 0214.1.6 Research career opportunities in the greenhouse management industry.

Standard 2: Greenhouse Structure, Operation and Maintenance (0214.S.2)

Students will identify different greenhouse structures, operations and maintenance.

Greenhouse Structure, Operation and Maintenance Objectives

Students will:

- 0214.2.1 Identify different greenhouse parts and compare types of structures and coverings.
- 0214.2.2 Demonstrate safety and proper manipulation of greenhouse equipment.
- 0214.2.3 Diagram operational systems in the greenhouse operation.
- 0214.2.4 Analyze suitable greenhouse locations and recommend interior layout.

Standard 3: Plant Classification and Identification (0214.S.3)

Students will identify the different plant classification.

Plant Classification and Identification Objectives

Students will:

- 0214.3.1 Demonstrate an understanding of the natural classification system for the plant kingdom.
- 0214.3.2 Identify and research plants that are important to the greenhouse industry.

Standard 4: Environmental Control and Plant Growth (0214.S.4)

Students will identify the different environmental elements and plant growth.

Environmental Control and Plant Growth Objectives

Students will:

- 0214.4.1 Describe the plant processes involved with plant growth and development.
- 0214.4.2 List plant growth regulators and document their effects on plants.
- 0214.4.3 Explain how essential elements become available for plant use.
- 0214.4.4 Identify and document the effects of environmental factors on plant growth.

Standard 5: Greenhouse Media and Containers (0214.S.5)

Students will identify the greenhouse media effects and the different types of containers.

Greenhouse Media and Containers Objectives

Students will:

- 0214.5.1 Research the components of media and amendments.
- 0214.5.2 Demonstrate the effect of various greenhouse media and proper media preparation on plant growth.
- 0214.5.3 Compare and contrast basic types and sizes of containers used in greenhouse management.

Standard 6: Plant Processes and Propagation (0214.S.6)

Students will identify the levels of plants processes and propagation.

Plant Processes and Propagation Objectives

Students will:

- 0214.6.1 Perform methods of propagating plants.
- 0214.6.2 Manipulate total environment from juvenile to mature plant.
- 0214.6.3 Demonstrate knowledge of plant growth and propagation processes including photosynthesis, respiration, transpiration and pollination.

Standard 7: Identifying and Controlling Disease, Insects, and Weeds (0214.S.7)

Students will identify and control disease, insects and weeds with proper pesticide usage.

Disease, Insects, and Weeds Objectives

Students will:

- 0214.7.1 Identify and exhibit guidelines for pesticide use.
- 0214.7.2 Practice integrated pest management procedures.
- 0214.7.3 Describe and evaluate control methods, chemical formulations and equipment used to control pests in the greenhouse.

Standard 8: Greenhouse Business Management (0214.S.8)

Students will identify the various types of managing a greenhouse business.

Greenhouse Business Management Objectives

Students will:

- 0214.8.1 Explore and discuss the various types of records kept in a greenhouse business.
- 0214.8.2 Use computers to solve problems related to greenhouse management.
- 0214.8.3 Describe the methods and determine the values and limitations of effective advertising.
- 0214.8.4 Develop a plan for profitable sales techniques.
- 0214.8.5 Record receipts and expenditures.

Standard 9: Laboratory Investigation (0214.S.9)

Students will safely conduct laboratory investigations and exploratory learning.

Laboratory Investigation Objectives

Students will:

- 0214.9.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 0214.9.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 0214.9.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 0214.9.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser

discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 10: Technology Applications (0214.S.10)

Students will apply technology to investigate real-world problems.

Technology Applications Objectives

Students will:

- 0214.10.1 Use computers and the World Wide Web (WWW) to:
 - Solve problems related to work-based experience programs in greenhouse technology.
 - Locate, evaluate, and collect information from a variety of sources related to greenhouse technology.
 - Develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
- 0214.10.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 0214.10.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to greenhouse technology.
- 0214.10.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of greenhouse technology.

Standard 11: Process/Workplace Skills (0214.S.11)

Students will demonstrate personal and group workplace skills.

Process/Workplace Skills Objectives

Students will:

- 0214.11.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 0214.11.2 Explore careers available in greenhouse technology.
- 0214.11.3 Use a variety of sources to investigate the educational requirements of various careers in greenhouse technology.
- 0214.11.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 0214.11.5 Demonstrate correct language usage in all oral and written work.
- 0214.11.6 Perform effectively in both leadership and non-leadership roles.
- 0214.11.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 0214.11.8 Participate as a team member to complete a variety of assignments.

Landscape Design And Installation

WVEIS Code 0215

This course will prepare students to design appropriate landscapes for home, business and other facilities. After the design plan is formulated, the students will implement the plan.

Standard 1: Leadership and Interpersonal Skill Development (0215.S.1)

Students will demonstrate leadership skills through personal, organizational and workplace experiences.

Leadership and Interpersonal Skill Development Objectives

Students will:

- 0215.1.1 Participate in FFA activities.
- 0215.1.2 Write, deliver and evaluate a speech and/or presentation.
- 0215.1.3 Explore careers in the landscape industry.
- 0215.1.4 Determine appropriate job seeking and keeping skills.
- 0215.1.5 Describe ethical conduct.
- 0215.1.6 Utilize record-keeping skills in work-based experience programs (SAE).

Standard 2: Basic Landscape Design (0215.S.2)

Students will recognize and demonstrate basic principles of planning and implementing the landscape design.

Basic Landscape Design Objectives

Students will:

- 0215.2.1 Determine environmental requirements for landscape plant materials.
- 0215.2.2 Recognize the appropriate plants for landscape use.
- 0215.2.3 Interpret landscape symbols for a landscape plan.
- 0215.2.4 Operate computer assisted design programs.
- 0215.2.5 Demonstrate knowledge of drafting skills needed in a landscape plan.

Standard 3: Safe Use and Operation of Horticulture Tools and Equipment. (0215.S.3)

Students will practice and demonstrate safety with landscape tools, equipment and activities.

Horticulture Tools and Equipment Objectives

Students will:

- 0215.3.1 Identify and properly use horticulture tools and equipment.
- 0215.3.2 Follow appropriate safety procedures and policies.
- 0215.3.3 Interpret and follow safety information from equipment manuals.
- 0215.3.4 Maintain and adjust safety devices.
- 0215.3.5 Service tools and equipment as to manufactures specifications.
- 0215.3.6 Operate equipment under job site conditions.

Standard 4: Implementation of the Landscape Design (0215.S.4)

Students will apply principles of landscape design.

Landscape Design Objectives

Students will:

- 0215.4.1 Prepare an area to be landscaped.
- 0215.4.2 Construct walkways and landscape structures.
- 0215.4.3 Install balled and burlapped, containerized and bare root plantings.
- 0215.4.4 Install herbaceous landscape plants.
- 0215.4.5 Place edging materials.

- 0215.4.6 Mulch a landscape site.
- 0215.4.7 Install turf areas.
- 0215.4.8 Place planting to provide appropriate lighting.

Landscape Maintenance

WVEIS Code 0216

Landscape maintenance is designed to expose students to proper techniques for maintaining a well-designed landscape. The students will understand the importance of landscape maintenance from the added aesthetic and financial value of the property.

Standard 1: Leadership and Interpersonal Skill Development (0216.S.1)

Students will demonstrate leadership skills through personal, organizational, and workplace experiences.

Leadership and Interpersonal Skill Development Objectives

Students will:

- 0216.1.1 Participate in FFA activities and programs.
- 0216.1.2 Identify communication skills.
- 0216.1.3 Identify interview and employment readiness skills.
- 0216.1.4 Draft a resume.

Standard 2: Demonstrate Safe Use and Operation of Horticulture Tools and Equipment (0216.S.2)

Students will practice and demonstrate safety with landscape tools, equipment and activities.

Horticulture Tools and Equipment Objectives

Students will:

- 0216.2.1 Identify and properly use horticulture tools and equipment.
- 0216.2.2 Follow appropriate safety procedures and policies.
- 0216.2.3 Interpret and follow safety information from equipment manuals.
- 0216.2.4 Maintain and adjust safety devices.
- 0216.2.5 Service tools and equipment as to manufacturer's specifications (including winterizing).
- 0216.2.6 Operate equipment under job site conditions.
- 0216.2.7 Identify and demonstrate the safe use of potentially hazardous materials (fuels, lubricants, etc.)

Standard 3: Using Pest Management Techniques (0216.S.3)

Students will describe safe pesticide use and the concept of integrated pest management.

Pest Management Techniques Objectives

Students will:

- 0216.3.1 Identify, calibrate, and properly use equipment.
- 0216.3.2 Identify and use personal safety equipment and protective clothing.
- 0216.3.3 Identify pests and the appropriate control techniques.
- 0216.3.4 Introduce Integrated Pest Management (IPM) techniques.
- 0216.3.5 Interpret pesticide labels and proper use as instructed.
- 0216.3.6 Identify and maintain an insect, disease, and weed control program.

Standard 4: Demonstrate Proper Landscape Maintenance Techniques (0216.S.4)

Students will maintain the landscape.

Landscape Maintenance Objectives

Students will:

- 0216.4.1 Determine and follow appropriate lawn care practices.
- 0216.4.2 Aerate and dethatch turf areas.
- 0216.4.3 Determine and implement irrigation needs for turf and landscaped areas.
- 0216.4.4 Identify appropriate soil testing procedures.

- 0216.4.5 Over-seed, lime, and fertilize as deemed necessary.
- 0216.4.6 Determine and implement proper pruning timelines and practices.
- 0216.4.7 Maintain landscape edging materials.
- 0216.4.8 Mulch landscape planting.
- 0216.4.9 Maintain landscape structures.
- 0216.4.10 Describe appropriate winter protection.
- 0216.4.11 Utilize record-keeping skills in work-based experience programs (SAE).

Turf Management

WVEIS Code 0217

This area of study is designed to provide students with scientific concepts and skills necessary to properly analyze problems in the turf management industry. Major concepts include pest management, cultural practices and scientific methods of evaluating turf problems.

Standard 1: Leadership and Communication Development (0217.S.1)

Students will demonstrate leadership skills through personal, organizational and workplace activities.

Leadership and Communication Development Objectives

Students will:

- 0217.1.1 Describe FFA.
- 0217.1.2 Identify appropriate career opportunities in the turfgrass industry.
- 0217.1.3 Prepare a resume', complete a job application, and demonstrate job seek/keep skills.
- 0217.1.4 Develop personal relations communication skills.
- 0217.1.5 Identify career opportunities in turf management.
- 0217.1.6 Identify income potential in turf management.

Standard 2: Growth and Physiology (0217.S.2)

Students will describe the process of plant growth.

Growth and Physiology Objectives

Students will:

- 0217.2.1 Identify major plant parts.
- 0217.2.2 Identify adaptation zones.
- 0217.2.3 Identify warm and cool season species of turfgrass.
- 0217.2.4 Identify turf growth patterns.

Standard 3: Cultural Practices (0217.S.3)

Students will demonstrate practices pertaining to the establishment and maintenance of turfgrass.

Cultural Practices Objectives

Students will:

- 0217.3.1 Identify appropriate mowing techniques for given areas.
- 0217.3.2 Describe the 1/3 rule.
- 0217.3.3 Explain soil-sampling procedures.
- 0217.3.4 Identify soil testing techniques and procedures.
- 0217.3.5 Calculate fertilizer application rates.
- 0217.3.6 Explain fertilizer application techniques.
- 0217.3.7 Explain the two major irrigation techniques.
- 0217.3.8 Calculate irrigation rates.
- 0217.3.9 Identify verticutting, rolling, top dressing and aeration.
- 0217.3.10 Explain turf establishment procedures.

Standard 4: Pest Management (0217.S.4)

Students will demonstrate safe pesticide use and describe the concept of integrated pest management.

Pest Management Objectives

Students will:

- 0217.4.1 Identify common turf insects.
- 0217.4.2 Identify common turf weeds.
- 0217.4.3 Identify common turf diseases.

- 0217.4.4 Identify control practices for pests.
- 0217.4.5 Describe the use of biological controls in integrated pest management.
- 0217.4.6 Calculate pesticide application rates.
- 0217.4.7 Describe safe chemical handling and safety equipment.
- 0217.4.8 Identify controls for large pests.

Standard 5: Equipment and Safety (0217.S.5)

Students will practice and demonstrate safety with turf tools, equipment, and activities.

Equipment and Safety Objectives

Students will:

- 0217.5.1 Identify principles of equipment and personal safety.
- 0217.5.2 Demonstrate ability to operate turf equipment.
- 0217.5.3 Explain basic equipment maintenance.
- 0217.5.4 Identify correct mower sharpening procedures.

Standard 6: Developing Work-Based Experiential Program (SAE) (0217.S.6)

Students will explore careers and plan a SAE.

SAE Objectives

Students will:

- 0217.6.1 Explore opportunities for Supervised Agricultural Experience Programs.
- 0217.6.2 Establish a Supervised Agricultural Experience Program in grounds maintenance.
- 0217.6.3 Maintain records of experience program activities, expenses and earnings.

Accounting Principles I

WVEIS Code 1401

This course prepares students with the basic principles of the accounting cycle. Students study the basic principles, concepts and practices of the accounting cycle which includes financial statements, banking, payroll, business ownerships and an accounting career orientation.

Standard 1: Accounting Careers (1401.S.1)

Investigate accounting as a career.

Career Objectives

Students will:

- 1401.1.1 Define the purpose of accounting and the role it plays in our economy.
- 1401.1.2 Use appropriate accounting terminology.
- 1401.1.3 Discuss entry-level accounting positions and their education requirements.
- 1401.1.4 Identify confidentiality concepts and policies.
- 1401.1.5 Identify characteristics of professional and ethical conduct.

Standard 2: Accounting Cycle (1401.S.2)

Analyze accounting procedures, as applied to the accounting cycle.

Procedures Objectives

Students will:

- 1401.2.1 Demonstrate the effects of transactions on the accounting equation.
- 1401.2.2 Identify and use source documents.
- 1401.2.3 Prepare a chart of accounts using proper numerical sequencing.
- 1401.2.4 Demonstrate the purpose of a general journal and how it relates to a ledger.
- 1401.2.5 Post general journal entries to the general ledger and update the account balances.
- 1401.2.6 Prepare a trial balance.
- 1401.2.7 Prepare/create financial statements.
- 1401.2.8 Calculate and record end-of-period adjustments.
- 1401.2.9 Prepare post-closing trial balance.
- 1401.2.10 Use specialized accounting software, or spreadsheets, to maintain accounting records.
- 1401.2.11 Identify the differences between computerized and manual accounting procedures.

Standard 3: The Accounting Cycle for Specialized Procedures (1401.S.3)

Students will implement specialized accounting procedures as applied to the accounting cycle.

The Accounting Cycle Objectives

Students will:

- 1401.3.1 Differentiate between the different types of business ownerships.
- 1401.3.2 Differentiate between a service and a merchandising business.
- 1401.3.3 Analyze transactions relating to the purchase of merchandise and record in special journals.
- 1401.3.4 Analyze transactions relating to sale of merchandise and record in special journals.
- 1401.3.5 Analyze financial statements.

Standard 4: Payroll and Banking Procedures (1401.S.4)

Analyze payroll and banking procedures.

Payroll and Banking Procedures Objectives

Students will:

- 1401.4.1 Define methods used to determine gross earnings.
- 1401.4.2 Explain the purpose of deductions and withholdings.

- 1401.4.3 Compute gross earnings, deductions and net pay for an employee.
- 1401.4.4 Record and post transactions associated with payroll activities.
- 1401.4.5 Create and maintain employee earnings records.
- 1401.4.6 Demonstrate generation of payroll checks.
- 1401.4.7 Demonstrate the ability to write business checks and complete check stubs and check registers.
- 1401.4.8 Demonstrate the ability to prepare bank deposits slips.
- 1401.4.9 Identify and demonstrate the three types of check endorsements.
- 1401.4.10 Reconcile a bank statement, prepare journal entries, and post.
- 1401.4.11 Demonstrate an understanding for replenishing of and preparing journal entries for the petty cash fund.

Accounting Principles II

WVEIS Code 1403

This course provides students the opportunity to develop advanced knowledge of accounting procedures and techniques utilized in problem solving and in making financial decisions and analysis. Students study the advanced principles, concepts and practices of the accounting cycle that includes financial statements, banking, payroll, partnerships, corporation, cost accounting, inventory, and tax accounting.

Standard 1: Accounting Procedures (1403.S.1)

Demonstrate accounting procedures.

Accounting Procedures Objectives

Students will:

- 1403.1.1 Use accounting terminology.
- 1403.1.2 Understand and maintain ethical standards in the preparation of financial statements.
- 1403.1.3 Interpret characteristics of professional conduct.
- 1403.1.4 Use specialized accounting software, or spreadsheets, to maintain accounting procedures.
- 1403.1.5 Demonstrate competence in the structure and sequence of the accounting cycle utilizing manual and automated systems.
- 1403.1.6 Analyze computer generated reports.

Standard 2: Accounting Procedures for Assets, Liabilities, and Equity (1403.S.2)

Implement accounting procedures for assets, liabilities, and equity.

Assets, Liabilities, and Equity Procedures Objectives

Students will:

- 1403.2.1 Analyze cash and accounts receivable transactions and record in appropriate journals.
- 1403.2.2 Analyze investment transactions and record in appropriate journals.
- 1403.2.3 Calculate inventories using various methods and record in appropriate journals.
- 1403.2.4 Analyze plant and intangible asset transactions and record in appropriate journals.
- 1403.2.4 Analyze current liabilities transactions and record in appropriate journals.
- 1403.2.5 Analyze long-term liabilities transactions and record in appropriate journals.
- 1403.2.6 Analyze equity transactions for various forms of business ownership and record in appropriate journals.
- 1403.2.7 Generate financial and end-of-period statements.
- 1403.2.8 Analyze and interpret financial statements.
- 1403.2.9 Update accounts through adjusting and closing entries.
- 1403.2.10 Explain and record adjusting and reversing entries for accrued revenue and expenses.
- 1403.2.11 Complete account procedures for prepaid expenses and unearned revenue.
- 1403.2.12 Analyze, compute and record transactions related to uncollectible accounts.
- 1403.2.13 Manage the computations and recordings of transactions related to notes receivable and notes payable.
- 1403.2.14 Identify concepts and practices related to accounting for plant assets.
- 1403.2.15 Calculate and record depreciation of plant assets.
- 1403.2.16 Analyze the concept of cash flow management.

Standard 3: Specialized Accounting Procedures (1403.S.3)

Utilize specialized accounting procedures and applications.

Specialized Accounting Procedures Objectives

Students will:

- 1403.3.1 Implement procedures for departmental or branch accounting systems.
- 1403.3.2 Analyze and implement various methods for budgetary planning and control.
- 1403.3.3 Analyze and implement cost accounting procedures for manufacturing accounting.
- 1403.3.4 Analyze financial statements for a manufacturing concern to make cost decisions.
- 1403.3.5 Examine accounting issues faced by different types of industries such as services, manufacturing, and distribution.
- 1403.3.6 Analyze income statements and balance sheets for a business.
- 1403.3.7 Differentiate between the three basic types of businesses (services, merchandising and manufacturing).
- 1403.3.8 Interpret the differences between sole proprietorships, partnerships, and corporations
- 1403.3.9 Understand the accounting principles for not-for-profit and government entities.
- 1403.3.10 Demonstrate an understanding between personal and business taxation at various levels.

Banking and Finance

WVEIS Code 1405

This course will help maximize a student's earning potential, develop strategies for managing financial resources, and gain insight into different methods of investing.

Standard 1: Careers in Banking and Finance (1405.S.1)

Explain banking and finance traits.

Banking and Finance Career Objectives

Students will:

- 1405.1.1 Use appropriate terminology
- 1405.1.2 Maintain ethical character traits, such as honesty, integrity, compassion, respect, responsibility citizenship and justice.

Standard 2: Budgets (1405.S.2)

Identify the need for and develop a budget.

Budgeting Objectives

Students will:

- 1405.2.1 Compare and contrast lifestyles and effects on a budget
- 1405.2.2 Identify steps in planning a budget
- 1405.2.3 Develop a budget based on goals, income, expenses, and savings
- 1405.2.4 Enumerate problems incurred without a budget

Standard 3: Saving and Investing (1405.S.3)

Differentiate between saving and investing.

Saving and Investing Objectives

Students will:

- 1405.3.1 Enumerate reasons for saving
- 1405.3.2 Describe differences between saving and investing
- 1405.3.4 List guidelines for investing
- 1405.3.5 Identify common choices for investing
- 1405.3.6 Explain uses of technology in the investment industry
- 1405.3.7 Determine opportune times for investing
- 1405.3.8 Interpret stock quotations
- 1405.3.9 Complete mock stock purchases
- 1405.3.10 Compute net gain/loss

Standard 4: Banking (1405.S.4)

Explain functions of banks and regulations of the banking industry.

Banking Objectives

Students will:

- 1405.4.1 Describe functions and characteristics of money
- 1405.4.2 Identify the source of value to the US Dollar and its area of storage
- 1405.4.3 Explain main functions of banks
- 1405.4.4 Identify government regulations of the banking industry

- 1405.4.5 Compute simple & compound interest
- 1405.4.6 Explain importance of maintaining confidentiality
- 1405.4.7 Write checks, maintain a checkbook balance, and compute a bank reconciliation statement

Standard 5: Federal Reserve System (1405.S.5)

Analyze the Federal Reserve System and monetary policy.

Federal Reserve System Objectives

Students will:

- 1405.5.1 Define Federal Reserve System
- 1405.5.2 Describe the responsibilities of the Federal Reserve System
- 1405.5.3 Define monetary policy
- 1405.5.4 Locate the Federal Reserve banks and branches on a US map
- 1405.5.5 Differentiate between the U.S. Mint and the U.S. Bureau of Engraving
- 1405.5.6 Explain banks use of magnetic ink character recognition and electronic funds transfer

Basic Keyboarding

WVEIS Code 1407

This area of study is designed as a one-semester course to provide learners with keyboarding skills required for success in academic and occupational areas. Concepts in this area include keyboard operation, formatting skills, computer skills, appropriate work habits, and career awareness.

Standard 1: Work Habits (1407.S.1)

Exhibit good work habits.

Work Habits Objectives

Students will:

- 1407.1.1 Follow oral and written instructions in the completion of assigned tasks and work efficiently to meet deadlines.
- 1407.1.2 Exhibit the attitudes and work habits necessary for good interpersonal and employee/employer relations in the workforce.
- 1407.1.3 Keep the area in and around the workstation organized by properly assembling supplies and information necessary to complete assigned tasks.
- 1407.1.4 Illustrate desirable work ethics.

Standard 2: Keyboarding Operational Skills (1407.S.2)

Demonstrate proper keyboard operation skills.

Proper Keyboarding Skills Objectives

Students will:

- 1407.2.2 Apply information processing concepts.
- 1407.2.3 Correctly manipulate document formatting tools.
- 1407.2.4 Master operation of the alphabet, punctuation, number, and symbol keys by touch.
- 1407.2.5 Exhibit proofreading skills by visually checking for errors utilizing the manual method or computer proofreading tools (i.e., spell check, grammar check, thesaurus.)
- 1407.2.6 Increase keyboarding speed and accuracy.

Standard 3: Basic Production Skills (1407.S.3)

Apply basic production skills.

Basic Production Skill Objectives

Students will:

- 1407.3.1 Develop language arts skills through composition at the keyboard utilizing capitalization, punctuation, and word division rules, number usage and spelling.
- 1407.3.2 Using correct grammar, key simple business/personal communications in error free form.
- 1407.3.3 Demonstrate basic production and editing skills in keyboarding and formatting copy for short reports, simple tables, memorandums, personal/business communications from arranged, rough-draft, handwritten, incomplete or unedited copy.
- 1407.3.4 Illustrate basic formatting skills on enumeration and outlines.
- 1407.3.5 Identify and correctly use proofreader's marks.
- 1407.3.6 Apply horizontal and vertical centering to text.
- 1407.3.7 Maintain a minimum speed of 40 words per minute with no more than three errors on a three-minute timed writing.
- 1407.3.8 Prepare envelopes using USPS style and insert correctly folded letters.
- 1407.3.9 Practice problem solving and decision-making skills.

Standard 4: Basic Computer Skills (1407.S.4)

Demonstrate basic computer skills.

Basic Computer Skill Objectives

Students will:

- 1407.4.1 Identify hardware components.
- 1407.4.2 Demonstrate the proper care and use of hardware and software.
- 1407.4.3 Demonstrate proficiency in using operating system commands.
- 1407.4.4 Demonstrate the functions and common features of word processing software.
- 1407.4.5 Use document processing terminology.

Standard 5: Investigate careers. (1407.S.5)

Investigate careers utilizing keyboarding skills.

Investigate Careers Objective

Students will:

- 1407.5.1 Integrate the relevance of keyboarding skills to all occupational areas.

Business Communication

WVEIS Code 1409

This area of study will focus on the application of communication skills through a variety of informal and formal experiences. The performance-based course will emphasize effective interpersonal and team building skills. Technology will be used to create and deliver presentations, to enhance problem-solving situations, and to practice critical thinking and decision-making. Job interview, research paper, or a senior project will culminate this course. Strongly Recommended: At least a AC@ average in English courses previously completed.

Standard 1: Oral Communications (1409.S.1)

Communicate orally in a clear, courteous, concise, and responsible manner on personal and professional levels.

Oral Communication Objectives

Students will:

- 1409.1.1 Use standard oral English usage.
- 1409.1.2 Organize thoughts to reflect logical, positive, and tactful thinking before speaking.
- 1409.1.3 Participate in group discussion and role playing for problem solving.
- 1409.1.4 Ask/Answer impromptu questions with confidence to elicit information in the exchange of ideas in a formal/informal setting (e.g., interview or formal classroom discussion).
- 1409.1.5 Discuss and demonstrate steps in creating and using proper techniques in making a formal oral presentation.
- 1409.1.6 Use proper telephone techniques and etiquette to gather and record information.
- 1409.1.7 Demonstrate an awareness and acceptance of international, regional, and multicultural speech.

Standard 2: Composing Correspondence (1409.S.2)

Compose correspondence that uses Standard English usage, acceptable format, and proper mechanics.

Composing Correspondence Objectives

Students will:

- 1409.2.1 Compose a variety of business letters, memorandums, reports, and electronic messages using correct style, format, and content that promotes a positive response utilizing the "You" approach to business writing.
- 1409.2.2 Use acceptable steps in the writing process.
- 1409.2.3 Identify factors affecting the readability for specific audiences.
- 1409.2.4 Proofread business documents to ensure that they are clear, correct, concise, complete, consistent, and courteous.
- 1409.2.5 Avoid use of language bias (e.g., gender, religion, physically challenged, or race, etc.).
- 1409.2.6 Use a variety of references, resources, and graphics (both electronic and printed) for the purpose of writing business documents.
- 1409.2.7 Analyze and respond in writing to routine business problems both individually and collaboratively.

Standard 3: Listening and Observation Skills (1409.S.3)

Use active listening and observation skills to understand the positions of others, and use verbal and nonverbal cues from others to communicate effectively in return.

Active Listening and Observations Using Verbal/Nonverbal Objectives

Students will:

- 1409.3.1 Listen objectively, assess, and respond/record major points of a speaker's message including nonverbal messages.
- 1409.3.2 Identify and overcome major barriers to listening.
- 1409.3.3 Discuss the value of silence in communication as a nonverbal cue.
- 1409.3.4 Direct courteous attention to and synthesize information from multiple speakers within a group to obtain key facts and respond in an effective manner.
- 1409.3.5 Give examples of how nonverbal messages have different meanings in various cultures.
- 1409.3.6 Demonstrate a command of interactive listening techniques.
- 1409.3.7 Receive, interpret, and respond to verbal messages and other cues, such as body language, in ways that are appropriate.
- 1409.3.8 Demonstrate the ability to follow through on oral instructions in completing jobs.

Standard 4: Reading Strategies (1409.S.4)

Demonstrate use of reading strategies.

Reading Strategies Objectives

Students will:

- 1409.4.1 Distinguish between fact and opinion in written materials and electronic media (e.g., Internet).
- 1409.4.2 Analyze the integrity of printed or oral information.
- 1409.4.3 Explain career-specific terminology.
- 1409.4.4 Interpret business correspondence, professional articles, and supporting graphic material.
- 1409.4.5 Interpret information from manuals, computer printouts, and other electronic sources.
- 1409.4.6 Select an appropriate reading method for a particular situation (e.g., skimming, scanning, speed reading, and in-depth reading).
- 1409.4.7 Identify and discuss the intent of printed propaganda and its impact on decision-making.

Standard 5: Basic Social Communication Skills (1409.S.5)

Apply basic social communication skills in personal and professional situations that prepare a student to be adaptable in a global business environment.

Basic Social Communication Objectives

Students will:

- 1409.5.1 Analyze personal self-concept and design a program for improvement.
- 1409.5.2 Explain the role that self-concept plays in one's personal and professional life.
- 1409.5.3 Select appropriate business attire and demonstrate good grooming and personal hygiene.
- 1409.5.4 Display a positive attitude in personal and professional settings.
- 1409.5.5 Understand and develop an appropriate work ethic.
- 1409.5.6 Apply team skills in a business environment.
- 1409.5.7 Apply the principles of group dynamics in structured activities.
- 1409.5.8 Demonstrate appropriate responses to passive, assertive, and aggressive behavior.
- 1409.5.9 Select appropriate communication techniques to avoid, minimize, or prevent conflicts.
- 1409.5.10 Respect the customer-client confidentiality.

Standard 6: Communications in a Career (1409.S.6)

Integrate all forms of communication in the successful pursuit of a career.

Career Communication Objectives

Students will:

- 1409.6.1 Complete systematic career and job analysis.

- 1409.6.2 Compose formal letters of application, create an appropriate resume, complete application forms, and compose follow-up letters for job opportunities.
- 1409.6.3 Participate in and analyze mock interviews in various situations.
- 1409.6.4 Discuss and demonstrate the importance of appropriate dress in an interview situation.
- 1409.6.5 Discuss the significance of nonverbal communications in the interviewing process.
- 1409.6.6 List and discuss qualities that employers expect in potential employees.
- 1409.6.7 Use correct strategies for accepting or rejecting an employment offer.
- 1409.6.8 Discuss alternative sources for job searches.
- 1409.6.9 Discuss appropriate oral and written steps in leaving a job (resignation, downsizing, exit interview).
- 1409.6.10 Discuss potential problems with signing employment contract and effective salary negotiation strategies.

Business Computer Applications I

WVEIS Code 1411

This area of study is designed to provide the learner with the opportunity to understand and apply integrated software to business applications. The students will achieve basic proficiency in word processing, spreadsheet, desktop publishing, computerized presentations, Internet and/or database applications.

Standard 1: System Careers and Ethical Issues (1411.S.1)

Identify information system careers and ethical issues.

Careers and Ethical Issues of Information Systems Careers Objectives

Students will:

- 1411.1.1 Research educational requirements and skill experience for careers in information systems.
- 1411.1.2 Research how changing technology affects working environments and life styles.
- 1411.1.3 Demonstrate ethical procedures in the management of information systems.

Standard 2: Computer Hardware/Software Identification (1411.S.2)

Identify computer hardware and software.

Computer Hardware/Software Identification Objectives

Students will:

- 1411.2.1 Describe hardware components of a computer system.
- 1411.2.2 Demonstrate proper handling and care of software and hardware.
- 1411.2.3 Differentiate between system software and application software.
- 1411.2.4 Identify the difference between hardware and software.
- 1411.2.5 Develop an understanding of the concept of integrated software.
- 1411.2.6 Specify the difference between stand-alone computers and networked systems.

Standard 3: Utilizing Integrated Software Applications (1411.S.3)

Develop skills needed to apply integrated software applications to business procedures.

Applying Integrated Software Applications to Business Procedures Objectives

Students will:

- 1411.3.1 Demonstrate proper keyboarding techniques.
- 1411.3.2 Develop proper usage of word processing, database, and/or spreadsheet software terminology.
- 1411.3.3 Apply integrated software to perform input, processing, output and revision of various business documents.
- 1411.3.4 Employ the word processing function of an integrated package to complete a document requiring the use of commands to create, format, edit, save and print.
- 1411.3.5 Utilize the spreadsheet function of an integrated package to perform mathematical and logical operations and/or use the database function of an integrated package for file and database management (sort, combine and merge, etc.).
- 1411.3.6 Demonstrate proper use of multimedia software.
- 1411.3.7 Investigate Internet usage and electronic mail.
- 1411.3.8 Prioritize and complete assigned tasks using integrated software.
- 1411.3.9 Proofread and revise assigned projects to produce correct final output.
- 1411.3.10 Develop office scheduling and organizing skills (calendars, appointments and addresses).

Business Computer Applications II

WVEIS Code 1413

This area of study is designed to develop entry-level skills appropriate to an area of specialization in information systems. Students will achieve proficiency in the use of software packages in the areas of database, word processing, spreadsheets and presentation/desktop publishing.

Standard 1: Computer Applications Concepts and Resources (1413.S.1)

Review computer application concepts and resources common to the work environment.

Common Applications Objectives

Students will:

- 1413.1.1 Demonstrate proper keyboarding techniques.
- 1413.1.2 Identify and demonstrate components and the proper care of hardware and software.
- 1413.1.3 Select appropriate application software.
- 1413.1.4 Explain the various types of operating systems.
- 1413.1.5 Be familiar with a variety of reference materials (such as manuals, on-line help, vendor bulletin boards, etc.) for finding solutions and learning software programs.
- 1413.1.6 Be familiar with periodicals dealing with emerging state-of-the-art computer hardware and software.
- 1413.1.7 Demonstrate ability in using a computer operating system.

Standard 2: Proficiency in Computer Applications (1413.S.2)

Achieve proficiency utilizing computer applications.

Application Objectives

Students will:

- 1413.2.1 Transfer text, images and data between software programs.
- 1413.2.2 Develop advanced computer skills with specific software applications.
- 1413.2.3 Identify communications software for specific tasks/hardware.
- 1413.2.4 Identify and demonstrate accessing, navigating and using on-line services.
- 1413.2.5 Send and receive electronic mail (e-mail and faxes).
- 1413.2.6 Compose, manipulate, proofread, edit and print word processing documents.
- 1413.2.7 Plan, create, store, query, retrieve, sort, update, add and delete records using database software.
- 1413.2.8 Plan, create, store, manipulate, retrieve, sort, update, and, search, sort, delete, chart and print data using spreadsheet software.
- 1413.2.9 Create, format, import data, scanned images and graphics to produce presentations of desktop publishing products.
- 1413.2.10 Prepare multimedia presentations by creating, designing, importing (data, graphics, scanned images, sound and video), formatting and editing.

Business Computer Literacy

WVEIS Code 1415

This area of study is designed as a one semester course to reinforce proper keyboarding techniques, develop basic computer concepts and terminology skills, develop an understanding of ethical computer practices, explore the diverse educational uses of the Internet and introduce the use of (document) word processing, database, and/or spreadsheet computer applications.

Standard 1: Proper Keyboarding Techniques (1415.S.1)

Demonstrate proper keyboarding techniques on the computer.

Proper Keyboarding Technique Objectives

Students will:

- 1415.1.1 Demonstrate proper keyboarding techniques using the touch system.
- 1415.1.2 Develop skill on the keyboard using quick key commands found in application software.

Standard 2: Computer Careers, Uses, and Ethics (1415.S.2)

Identify computer careers, computer uses, and computer ethics.

Computer Careers, Uses, and Ethics Objectives

Students will:

- 1415.2.1 Identify careers found in the computer industry.
- 1415.2.2 Distinguish among the uses of computers for industry, business, and personal use including the benefits found in navigating the Internet.
- 1415.2.3 Demonstrate ethical procedures for the operation and management of a computer.
- 1415.2.4 Explain the impact of computers on society.
- 1415.2.5 Explain the computer's capabilities and limitations.

Standard 3: Basic Terminology and Concepts (1415.S.3)

Communicate basic computer terminology and concepts.

Basic Terminology and Concepts Objectives

Students will:

- 1415.3.1 Describe and identify computer hardware components by name.
- 1415.3.2 Define differences in word processing, database, and spreadsheet applications.
- 1415.3.3 Name commonly used programming languages and identify user groups of each.
- 1415.3.4 Explain the types of computers and examples for each.
- 1415.3.5 Communicate with others using computer vocabulary.

Standard 4: Hardware/Software Proficiency for Copy Production (1415.S.4)

Achieve basic proficiency in operating the computer in order to produce final copy and demonstrate correct usage of the hardware and software.

Basic Proficiency Operation Objectives (Hardware, Software, and Final Copy Production)

Students will:

- 1415.4.1 Define steps for the information processing cycle; input, processing output, storage.
- 1415.4.2 Explain procedures for handling different forms of media for saving and retrieving information.
- 1415.4.3 Demonstrate turning on and shutting down the computer properly and uses of the warm boot and cold boot commands.
- 1415.4.4 Distinguish between major operating systems currently on the market.
- 1415.4.5 Use the computer as a tool to perform simple information processing applications appropriate

to the student's level and background.

Standard 5: Proficiency Utilizing Software (1415.S.5)

Achieve basic computer proficiency utilizing computer applications software.

Proficiency Utilizing Application Software Objectives

Students will:

- 1415.5.1 Demonstrate the basic functions and common features of word processing software and create word processing documents.
- 1415.5.2 Demonstrate the basic functions and common features of database software and create a database.
- 1415.5.3 Demonstrate the basic functions and common features of spreadsheet software and create a spreadsheet.
- 1415.5.4 Review other forms of software used for entertainment, research, communications, and educational interests.
- 1415.5.5 Manipulate, proofread, and edit all documents produced according to approved standards.

Business Law

WVEIS Code 1417

This course focuses on the impact of law as it relates to business and individuals. Students will examine criminal and civil law with a concentration on consumer, contract, property, and employment laws while assessing ethics as they relate to each.

Standard 1: Ethics (1417.S.1)

Examine ethics related to business law.

Relationship of Ethics to Business Law Objectives

Students will:

- 1417.1.1 Identify ethical character traits, such as honesty, integrity, compassion, respect, responsibility, citizenship, and justice.
- 1417.1.2 Distinguish the various ways in which ethical decisions can be made.
- 1417.1.3 Describe why laws are needed.
- 1417.1.4 Explain the relationship between law and ethics and why they sometimes conflict.
- 1417.1.5 Compare and contrast the five major sources of today's law. (Federal and state constitutions, English common law, statutes, court decisions, and administrative law).

Standard 2: Criminal, Civil and Business Law (1417.S.2)

Identify the elements of criminal, civil and business law including trial procedures.

Elements of Criminal and Civic Law Objectives

Students will:

- 1417.2.1 Describe and define different types of crimes.
- 1417.2.2 Determine defenses to criminal acts.
- 1417.2.3 Distinguish between a tort and a crime.
- 1417.2.4 Differentiate between and give examples of negligence and intentional torts.
- 1417.2.5 Explain the concepts of the reasonable person test and proximate cause.
- 1417.2.6 Explain the concept of strict/absolute liability.
- 1417.2.7 Enumerate the steps in a civil and a criminal trial.
- 1417.2.8 Describe crimes affecting business.
- 1417.2.9 Explain civil rights when being accused of a crime.
- 1417.2.10 Distinguish between different types of courts.
- 1417.2.11 Explain duties of jurors and witnesses.

Standard 3: Contracts (1417.S.3)

Analyze contracts.

Contract Objectives

Students will:

- 1417.3.1 Identify the elements of a contract (offer, acceptance, genuine agreement, consideration, capacity, and legality).
- 1417.3.2 Discuss the requirements of an offer and acceptance and how the offer can be terminated/discharged.
- 1417.3.3 Explain a minor's right to avoid a contract and identify people who lack contractual capacity.
- 1417.3.4 List the essential information that should be included in writing under the statute of frauds.
- 1417.3.5 Explain the parole evidence rule.
- 1417.3.6 Describe breach of contract and the remedies available when a contract is breached.

Standard 4: Consumer Law (1417.S.4)

Analyze consumer law.

Consumer Law Objectives

Students will:

- 1417.4.1 Identify legislation that regulates consumer credit, such as Fair Credit Reporting Act, Fair Credit Billing Act, Equal Credit Opportunity Act, Fair Credit Collection Practices Act, Consumer Credit Protection Act and E-Commerce.
- 1417.4.2 Discuss consumer protection legislation, such as the Federal Trade Commission Act, the Consumer Product Safety Act, and the Consumer Leasing Act.
- 1417.4.3 Explain the importance of the Uniform Commercial Code (UCC) as it relates to the consumer.
- 1417.4.4 Identify various types of warranties and describe how each of the warranties may be excluded or modified.
- 1417.4.5 Describe and discuss the various aspects of bankruptcy, such as Liquidation, Reorganization, and Reorganization of Debts.

Standard 5: Real and Personal Property (1417.S.5)

Explain legal rules that apply to real and personal property.

Real and Personal Property Objectives

Students will:

- 1417.5.1 Distinguish among liens, licenses, and easements and explain the differences.
- 1417.5.2 List the major estates in land and describe the major features of each.
- 1417.5.3 List and describe the forms of co-ownership of real property.
- 1417.5.4 Illustrate the methods of transferring title (deeding) to real and personal property.
- 1417.5.5 Describe the kinds of rental relationships that landlords and tenants may create.
- 1417.5.6 Recognize the advantages and disadvantages of financing/leasing a car.
- 1417.5.7 Describe the principal kinds of automobile insurance.
- 1417.5.8 Name and describe the principal types of bailments.
- 1417.5.9 Contrast the rights and duties in bailments.
- 1417.5.10 Compare the law of patents, copyrights, and trademarks.

Standard 6: Employment Law (1417.S.6)

Analyze employment law.

Employment Law Objectives

Students will:

- 1417.6.1 Describe the employer-employee relationship and the rights and duties of each.
- 1417.6.2 Explain the doctrine of employment-at-will and describe the wrongful discharge exceptions to employment-at-will.
- 1417.6.3 Describe the collective bargaining process and other union activities.
- 1417.6.4 List and explain major legislation affecting the employer-employee relationship.
- 1417.6.5 Explain the relationship of Title VII of the Civil Rights Act to employment.

Standard 7: Personal Law (1417.S.7)

Analyze legal rules that apply to domestic situations.

Personal Law Objectives

Students will:

- 1417.7.1 Understand the rights and responsibilities of minors.
- 1417.7.2 Explain the relationship between school and minors.

- 1417.7.3 Explain marriage contracts.
- 1417.7.4 Distinguish between legal rights and obligations of marriage
- 1417.7.5 Describe the legal aspects of parenthood.
- 1417.7.6 Discuss considerations for termination of a marriage.
- 1417.7.7 Understand the legal ramifications of death.

Business Math

WVEIS Code 1419

Business math prepares students for using mathematical skills as related to business.

Standard 1: Computation Skills (1419.S.1)

Develop computational skills needed to solve business and consumer problems.

Computation Skills Objectives (Business Problems and Consumer Problems)

Students will:

- 1419.1.1 Solve problems that involve whole numbers, decimals, and fractions.
- 1419.1.2 Solve problems that involve percents, ratios, and proportions.
- 1419.1.3 Interpret tables, charts, and graphs.

Standard 2: Analyze and Solve Business Problems (1419.S.2)

Analyze and solve business problems for such areas as payroll records, taxation, personal cash management, credit management, depreciation, inventory records, purchases, sales, and financial statements.

Analyze and Solve a variety of Business Problems Objectives

Students will:

- 1419.2.1 Calculate earnings using different wage plans.
- 1419.2.2 Determine payroll deductions and compute net pay.
- 1419.2.3 Complete a signature card, deposit slip, maintain checkbook and prepare reconciliation statement.
- 1419.2.4 Identify the types of savings and checking accounts currently available.
- 1419.2.5 Identify and state how certified checks and cashier's checks are used.
- 1419.2.6 List the types of endorsements and state when to use them.
- 1419.2.7 Prepare a budget for personal money management.
- 1419.2.8 Compute individual income taxes.
- 1419.2.9 Identify an installment contract and a promissory note and calculate interest and maturity value.
- 1419.2.10 Determine the balance due for installment purchases.
- 1419.2.11 Determine finance/additional charges, periodic payment, total cost, and the Annual Percentage Rate (APR) on an installment contract.
- 1419.2.12 Identify purchase cost, salvage value, useful life, depreciation base, and book value.
- 1419.2.13 Compute depreciation by the following methods: straight-line, sum-of-the-years-digits, declining balance, and unit-of-production.
- 1419.2.14 Compute a physical inventory value by using FIFO, LIFO, specific identification and average cost methods.
- 1419.2.15 Compute the net profit or loss.
- 1419.2.16 Determine the dollar amount of cost, markup, or sales price when one of the three variables is unknown.
- 1419.2.17 Determine the dollar amount of markdowns, regular selling price, or reduced price when one of the three variables is unknown.
- 1419.2.18 Complete a sales invoice with sales information and sales tax.
- 1419.2.19 Identify each element of the fundamental accounting equation. (Assets = Liabilities + Owner's Equity)
- 1419.2.20 State and describe the debit and credit theory.
- 1419.2.21 Interpret a balance sheet and income statement.
- 1419.2.22 Distribute partnership income (revenue) or loss by different methods.
- 1419.2.23 Calculate commissions.

1419.2.24 Calculate insurance premiums.

1419.2.25 Examine differences between term and whole life insurance policies.

Business Recordkeeping

WVEIS Code 1421

This course prepares the student with entry level skills which enable them to process business forms and financial records.

Standard 1: Careers in Personal Recordkeeping (1421.S.1)

Analyze personal recordkeeping as a career.

Personal Recordkeeping Career Objectives

Students will:

- 1421.1.1 Define the purpose of personal record keeping and the role it plays in our economy.
- 1421.1.2 Use appropriate personal record keeping terminology.
- 1421.1.3 Research entry-level personal record keeping positions and their educational requirements.
- 1421.1.4 Identify ethical character traits, such as honesty, integrity, compassion, respect, responsibility, citizenship and justice.

Standard 2: Personal Recordkeeping Practices (1421.S.2)

Demonstrate personal recordkeeping practices.

Personal Recordkeeping Practices Objectives

Students will:

- 1421.2.1 Enter and correct data on business forms.
- 1421.2.2 Verify data processing computer output.
- 1421.2.3 Demonstrate a numeric filing system.
- 1421.2.4 Demonstrate an alphabetic filing system.
- 1421.2.5 Identify the differences between computerized and manual data processing procedures.
- 1421.2.6 Compare and demonstrate the differences between personal, family, and business budgets.
- 1421.2.7 Identify the purposes and procedures in handling credit/loan functions.

Standard 3: Monetary Funds (1421.S.3)

Demonstrate the handling of monetary funds.

Handling Monetary Funds Objectives

Students will:

- 1421.3.1 Prepare a proof of cash.
- 1421.3.2 Demonstrate how to give correct change.
- 1421.3.3 Demonstrate the ability to properly record cash receipt transactions.

Standard 4: Banking Procedures (1421.S.4)

Develop banking procedures.

Banking Procedures Objectives

Students will:

- 1421.4.1 Demonstrate the ability to write business checks and complete check stubs and check registers.
- 1421.4.2 Demonstrate the ability to prepare bank deposits slips.
- 1421.4.3 Identify and demonstrate the three types of check endorsements.

1421.4.4 Prepare a bank reconciliation statement.

Standard 5: Petty Cash Records (1421.S.5)

Prepare petty cash records.

Petty Cash Objectives

Students will:

1421.5.1 Prepare a petty cash voucher and attach receipts.

1421.5.2 Record in the petty cash book business expenses, cash shortages and overages, and replenishment of the petty cash fund.

Standard 6: Payroll Procedures (1421.S.6)

Demonstrate payroll procedures.

Payroll Procedures Objectives

Students will:

1421.6.1 Demonstrate procedures used to determine gross earnings.

1421.6.2 Compute gross earnings, deductions, and net pay for an employee and record them on the payroll register.

1421.6.3 Record payroll information into individual earning records.

1421.6.4 Prepare tax and payroll deduction forms.

Standard 7: Daily Business Forms (1421.S.7)

Prepare and use daily business forms.

Daily Business Forms Objectives

Students will:

1421.7.1 Prepare sales slips.

1421.7.2 Prepare statements of account.

1421.7.3 Prepare purchase requisitions.

1421.7.4 Prepare purchase orders.

1421.7.5 Prepare invoices.

Standard 8: Accounting Forms (1421.S.8)

Prepare and use accounting forms.

Basic Accounting Forms Objectives

Students will:

1421.8.1 Prepare a purchase journal.

1421.8.2 Prepare accounts payable and accounts receivable ledgers.

1421.8.3 Prepare a cash payments journal.

1421.8.4 Prepare a cash receipts journal.

1421.8.5 Prepare a general journal.

Computerized Presentations

WVEIS Code 1423

This area of study is designed to develop intermediate/advanced-level skills utilizing presentation software. Students will achieve proficiency and expert level skills and will have the opportunity to receive specialized certification by taking an examination. This is a one-semester course.

Standard 1: Presentation Development (1423.S.1)

Create a presentation.

Presentation Development Objectives

Students will:

- 1423.1.1 Create from a template.
- 1423.1.2 Create from an existing presentation.
- 1423.1.3 Delete slides.

Standard 2: Textual (1423.S.2)

Add textual information to presentations.

Textual Objectives

Students will:

- 1423.2.1 Enter text in a slide and outline view.
- 1423.2.2 Enter bulleted information.
- 1423.2.3 Change the text alignment.

Standard 3: Visual Elements (1423.S.3)

Add visual elements to presentations.

Visual Element Objectives

Students will:

- 1423.3.1 Add formatting.
- 1423.3.2 Build a graph.
- 1423.3.3 Draw an object.
- 1423.3.4 Rotate and fill an object.
- 1423.3.5 Scale and size an object.
- 1423.3.6 Add a table.
- 1423.3.7 Add shapes.
- 1423.3.8 Animate objects.
- 1423.3.9 Add transitions.
- 1423.3.10 Add an organization chart.
- 1423.3.11 Set custom options.
- 1423.3.12 Check styles.

Standard 4: Customizing Presentations (1423.S.4)

Customize presentations by bringing in data from other resources.

Customize Presentation Objectives

Students will:

- 1423.4.1 Add clip art.
- 1423.4.2 Insert an Excel chart.

- 1423.4.3 Import text from Word.
- 1423.4.4 Add scanned images.
- 1423.4.5 Add sound and movie.
- 1423.4.6 Export an outline to Word.

Standard 5: Modifying Presentations (1423.S.5)

Modify a presentation.

Modifying Presentation Objectives

Students will:

- 1423.5.1 Change the sequence of a slide.
- 1423.5.2 Find and replace text.
- 1423.5.3 Modify the slide master.
- 1423.5.4 Modify sequence in outline mode.
- 1423.5.5 Change tabs.
- 1423.5.6 Change fonts.
- 1423.5.7 Change the alignment of text.

Standard 6: Distribution (1423.S.6)

Prepare for distribution.

Distribution Objectives

Students will:

- 1423.6.1 Use spelling and grammar check.
- 1423.6.2 Add speaker notes.
- 1423.6.3 Set automatic slide timing.

Standard 7: Enhancing Presentations (1423.S.7)

Customize a presentation.

Enhancing Presentation Objectives

Students will:

- 1423.7.1 Create a custom background.
- 1423.7.2 Customize a color scheme.
- 1423.7.3 Customize clip art and other objects.
- 1423.7.4 Recolor and edit objects.
- 1423.7.5 Apply a template from another presentation.
- 1423.7.6 Add links to other slides within the presentation.
- 1423.7.8 Hide slides.

Standard 8: Presentation Delivery (1423.S.8)

Deliver presentations.

Presentation Delivery Objectives

Students will:

- 1423.8.1 Start a slide show on any slide.
- 1423.8.2 Use on screen navigation tools.
- 1423.8.3 Generate meeting notes
- 1423.8.4 Electronically incorporate meeting features.
- 1423.8.5 Print slides in a variety of formats.
- 1423.8.6 Print color presentations.
- 1423.8.7 Export to overhead.

- 1423.8.8 Export to 35mm slides.
- 1423.8.9 Present with presentation conferencing.
- 1423.8.10 Save presentation for use on another computer.
- 1423.8.11 Save for Internet use.

Cooperative Office Education

WVEIS Code 1425

Cooperative Office Education is an on-the-job training for students that contributes to the over-all instructional program. The instruction, through written agreement between school and employers, is a combination of study in school with employment in the appropriate field. The related classroom instruction and on-the-job experiences are planned and supervised by employers and teacher coordinators to complete the student's education as to his/her career objective.

Standard 1: Human Relations Skills (1425.S.1)

Demonstrate human relations skills required for success in the workplace.

Human Relations Skills Objectives

Students will:

- 1425.1.1 Demonstrate honesty and integrity.
- 1425.1.2 Use proper business ethics in all business activities.
- 1425.1.3 Demonstrate respect for customers, co-workers, and management.
- 1425.1.4 Demonstrate initiative in completing job duties.
- 1425.1.5 Maintain a positive attitude and positive relationship with customers, co-workers, and management.
- 1425.1.6 Adapt to changes in job responsibilities.
- 1425.1.7 Appreciate diversity in the workplace.
- 1425.1.8 Exhibit self-control when working with customers, co-workers and management.
- 1425.1.9 Use appropriate assertiveness.
- 1425.1.10 Exhibit empathy for customers, co-workers and management.
- 1425.1.11 Use feedback from others for personal growth.
- 1425.1.12 Practice proper business etiquette.
- 1425.1.13 Identify procedures to respond to sexual harassment.

Standard 2: Business Communications (1425.S.2)

Demonstrate appropriate business communication skills.

Communications Objectives

Students will:

- 1425.2.1 Use correct grammar and vocabulary in written and oral communications.
- 1425.2.2 Listen to and follow directions.
- 1425.2.3 Explain policies and procedures to customers and clients.
- 1425.2.4 Perform proper telephone techniques appropriately.
- 1425.2.5 Demonstrate the proper procedure for job termination.

Standard 3: Basic Work Skills (1425.S.3)

Demonstrate mastery of basic work skills for a chosen occupation.

Basic Work Skills Objectives

Students will:

- 1425.3.1 Maintain punctuality, appropriate attendance, and dependability.
- 1425.3.2 Work independently without direct supervision.
- 1425.3.3 Stay with an assigned task until successful completion.
- 1425.3.4 Utilize time management principles when completing assignments.
- 1425.3.5 Apply organizational skills in daily activities.
- 1425.3.6 Participate as a team member when completing a work project.
- 1425.3.7 Produce quality work.

- 1425.3.8 Accept accountability for one's performance.
- 1425.3.9 Perform basic mathematical functions.
- 1425.3.10 Operate the most common electronic equipment with speed and accuracy.
- 1425.3.11 Maintain appropriate records for use on the job and in class.
- 1425.3.12 Demonstrate leadership skills when completing a project or task.
- 1425.3.13 Exhibit decision-making skills.
- 1425.3.14 Solve problems individually and as a team member.
- 1425.3.15 Participate in company meetings and activities.

Standard 4: Basic Safety Techniques (1425.S.4)

Apply and demonstrate basic safety techniques.

Basic Safety Techniques Objectives

Students will:

- 1425.4.1 Practice basic safety rules.
- 1425.4.2 Handle company equipment properly and safely.
- 1425.4.3 Demonstrate safety procedures for handling and lifting heavy materials.
- 1425.4.4 Follow procedures in the case of an accident, including reporting procedures.
- 1425.4.5 Follow security procedures.
- 1425.4.6 Practice proper safety procedures for handling and storing hazardous materials.
- 1425.4.7 Recognize and report hazardous conditions.
- 1425.4.8 Read and interpret operating instructions before using equipment.
- 1425.4.9 Explain and practice procedures for safe evacuation.
- 1425.4.10 Identify A, B, and C fires and how to extinguish them.
- 1425.4.11 Identify proper agencies for safety procedures (fire department, police department, OSHA, hospital).

Database Management

WVEIS Code 1427

This area of study is designed to develop skills in database application software. Students will achieve proficiency and expert level skills and will have the opportunity to receive a specialized certification. (One semester class)

Standard 1: Create Databases (1427.S.1)

Create databases.

Create Database Objectives

Students will:

- 1427.1.1 Plan a database.
- 1427.1.2 Create a table.
- 1427.1.3 Enter data into a table.
- 1427.1.4 Modify data in a table.
- 1427.1.5 Enter data into a form.
- 1427.1.6 Navigate through a table.
- 1427.1.7 Delete data from a table.

Standard 2: Forms (1427.S.2)

Create and utilize forms.

Create Form Objectives

Students will:

- 1427.2.1 Create a simple form.
- 1427.2.2 Modify a form.
- 1427.2.3 Create controls on a form.
- 1427.2.4 Modify controls.
- 1427.2.5 Add a record using a form.
- 1427.2.6 Show related records on a form.

Standard 3: Modify databases (1427.S.3)

Modify pre-created databases.

Database Modification Objectives

Students will:

- 1427.3.1 Open a database.
- 1427.3.2 Modify field properties.
- 1427.3.3 Modify field layout.
- 1427.3.4 Modify the presentation of a database.

Standard 4: View Information (1427.S.4)

Utilize view techniques.

View Information Objectives

Students will:

- 1427.4.1 Present information in chart.
- 1427.4.2 View information in a form.
- 1427.4.3 View multiple records.
- 1427.4.2 Switch between views.

Standard 5: Organize Information (1427.S.5)

Organize data information in single and multiple fields

Organize Data Fields Objectives

Students will:

- 1427.5.1 Sort data on single fields.
- 1427.5.2 Sort data on multiple fields.

Standard 6: Locate Information (1427.S.6)

Locate records and work with queries.

Record and Query Objectives

Students will:

- 1427.6.1 Find a specific record.
- 1427.6.2 Create a simple query.
- 1427.6.3 Create a query with multiple criteria.
- 1427.6.4 Add filters (selection and form).
- 1427.6.5 Remove filters.

Standard 7: Refine Results of a Query (1427.S.7)

Refine query results by adding, removing, sorting, joining and removing tables.

Refine Query Objectives

Students will:

- 1427.7.1 Add fields to a query.
- 1427.7.2 Remove fields from a query.
- 1427.7.3 Sort a query.
- 1427.7.4 Join tables in a query.
- 1427.7.5 Remove joins in a query.
- 1427.7.6 Save a query.

Standard 8: Analyze Data (1427.S.8)

Analyze data.

Analyze Data Objectives

Students will:

- 1427.8.1 Build summary queries.
- 1427.8.2 Calculate fields.
- 1427.8.3 Set crosstab queries.

Standard 9: Create Sub Forms (1427.S.9)

Create sub forms by adding records and merging tables.

Create Sub Form Objectives

Students will:

- 1427.9.1 Identify appropriate use for sub forms.
- 1427.9.2 Add a record with a main form.
- 1427.9.3 Add records with sub forms.
- 1427.9.4 Merge two tables into a form.

Standard 10: Building a Relational Database (1427.S.10)

Build relational databases.

Relational Database Objectives

Students will:

1427.10.1 Identify relationships.

1427.10.2 Relate tables.

Standard 11: Integrate Applications (1427.S.11)

Integrate information from other applications.

Application Integration Objectives

Students will:

1427.11.1 Import data.

1427.11.2 Link data.

1427.11.3 Add pictures to records.

Standard 12: Utilize Web Capability (1427.S.12)

Utilize the web for hyperlinks and building forms.

Web Capability Objectives

Students will:

1427.12.1 Create hyperlinks.

1427.12.2 Build order forms for Internet use.

Standard 13: Maintain Data Integrity (1427.S.13)

Maintain data integrity.

Data Integrity Objectives

Students will:

1427.13.1 Identify criteria for data integrity.

1427.13.2 Validate text.

1427.13.3 Set required properties.

1427.13.4 Set validation rules.

1427.13.5 Set look up fields.

1427.13.6 Use expressions in calculated controls.

Standard 14: Build Forms for Other Users (1427.S.14)

Create and modify forms.

Building Form Objectives

Students will:

1427.14.1 Title a form.

1427.14.2 Modify form design.

1427.14.3 Improve accuracy in a form.

1427.14.4 Enhance design of a form.

Standard 15: Produce Reports (1427.S.15)

Create, label, modify, and manipulate data in reports.

Producing Reports Objectives

Students will:

- 1427.15.1 Create a report.
- 1427.15.2 Modify a report.
- 1427.15.3 Label a report.
- 1427.15.4 Customize headers and footers.
- 1427.15.5 Make a calculation on a report.
- 1427.15.6 Group data in a report.
- 1427.15.7 Sort data in a report.
- 1427.15.8 Add custom pages.

Standard 16: Print. (1427.S.16)

Print forms, queries and reports.

Print Objectives

Students will:

- 1427.16.1 Print a report.
- 1427.16.2 Print a form.
- 1427.16.3 Print the result of a query.

Desktop Publishing

WVEIS Code 1429

This course will introduce students to a variety of ways that people use tools and resources to communicate. Students will explore various applications in desktop publishing through hands-on activities and experiences which may include brochures, pamphlets, newsletters, letterheads, tables (graphs, charts, etc.), memo forms, advertisements, banners, business cards, web pages, etc.

Standard 1: Basic Desktop Publishing Concepts (1429.S.1)

Identify desktop publishing concepts.

Basic Desktop Publishing Concepts Objectives

Students will:

- 1429.1.1 Define and use desktop publishing terminology.
- 1429.1.2 Identify desktop publishing concepts, i.e. audience appeal, design, layout, and marketing.
- 1429.1.3 Review and practice basic word processing skills, i.e. mouse, opening, editing, formatting, saving, printing.
- 1429.1.4 Identify and analyze desktop publishing career opportunities.

Standard 2: Desktop Software (1429.S.2)

Demonstrate skills utilizing desktop software.

Utilizing Desktop Software Objectives

Students will:

- 1429.2.1 Define publication software, start the program, view the publication software window, open and save a publication, enter text in a frame, view and print a publication and exit the program.
- 1429.2.2 Plan and design a publication, create a publication with the Wizard, replace frame text, import a graphic and text, import an object from a drawing program (Paintbrush), add a sidebar, add a pull quote, use the Wizard tools, and group/ ungroup objects.
- 1429.2.3 Use layout guides, use ruler guides, work with a frame, add bullets and numbering, check spelling, use graphics (clip art folder), paint formats, and add a table.
- 1429.2.4 Insert and resize clip art, copy and move an object, crop an image, align and group images, layer objects, rotate art, use drawing tools, and fill drawn shapes.
- 1429.2.5 Define styles, modify and apply a style, change a format into a style, create columns, adjust text overflows, add >Continued on/from= notices, add drop caps, and create reversed text.
- 1429.2.6 Add a page, delete a page, work with a background, create a header and footer, add page numbers, work with stories, use tabs, and create a booklet.
- 1429.2.7 Add border art, create an object shadow, design word art, create a bleed, create a watermark, wrap text around a frame, rotate a text frame, create a Web page.
- 1429.2.8 Use a digital camera and a scanner to import visuals into publications.

Standard 3: Legal and Ethical (1429.S.3)

Determine legal and ethical aspects of desktop publishing.

Legal and Ethical Objectives

Students will:

- 1429.3.1 Identify copyright and patent laws pertaining to scanned images and documents, electronic clip art, scanned photography, trademarks, and information (graphics and text) downloaded from the Internet.
- 1429.3.2 Identify licensing agreements associated with desktop publishing software.

Digital Imaging/Multimedia

WVEIS Code 1431

This course will introduce students to the basics of producing digital images for multimedia purposes. Students will explore various methods of producing images through hands-on activities and experiences which will include: operating a digital camera and a scanner, using imaging software to improve photos or to create special effects, creating simple animations, manipulating video images, and producing multimedia images.

Standard 1: Basic Computer Concepts (1431.S.1)

Identify basic computer concepts

Basic Computer Concepts Objectives

Students will:

- 1431.1.1 Define and use digital imaging terminology
- 1431.1.2 Explore careers requiring digital imaging skills
- 1431.1.3 Explore basic concept of Web navigation

Standard 2: Digital Cameras

Operate digital cameras

Digital Cameras Operation Objectives

Students will:

- 1431.2.1 Identify features of different types of digital cameras
- 1431.2.2 Take pictures and transfer images to the computer using different types of digital cameras
- 1431.2.3 Manipulate and organize images transferred from digital cameras

Standard 3: Operate Scanner

Operate scanners.

Scanner Operations Objectives

Students will:

- 1431.3.1 Identify different types of scanners and scanning software programs
- 1431.3.2 Scan images using different types of scanners and software programs
- 1431.3.3 Transfer images to computer software.

Standard 4: Utilizing Imaging Software

Utilize imaging software.

Imaging Software Objectives

Students will:

- 1431.4.1 Identify different types of imaging software
- 1431.4.2 Identify different types of file formats
- 1431.4.3 Produce digital photographs
- 1431.4.4 Understand layers and create photos using layers
- 1431.4.5 Incorporate color techniques and enhance images
- 1431.4.6 Add type to an image
- 1431.4.7 Create special effects with filters
- 1431.4.8 Create multimedia photos

Standard 5: Create Animations (1431.S.5)

Create animations.

Create Animations Objectives

Students will:

- 1431.5.1 Identify animation software
- 1431.5.2 Place images to create animations
- 1431.5.3 Create frames from images to animate
- 1431.5.4 Enhance animations
- 1431.5.5 Create multimedia animations

Standard 6: Digital Video Images (1431.6)

Create and manipulate digital video images.

Digital Video Images Objectives

Students will:

- 1431.6.1 Identify features and operate video digital camera
- 1431.6.2 Use digital video software to cut, edit, apply effects and transitions to video clips
- 1431.6.3 Create multimedia video clips

Standard 7: Computer Generated Drawings (1431.S.7)

Create computer generated drawings.

Computer Created Generated Drawings Objectives

Students will:

- 1431.7.1 Identify different types of computer drawing software
- 1431.7.2 Identify and use major components of a drawing program
- 1431.7.3 Create graphics for multimedia uses; such as buttons and banners for Web pages, letterheads, business cards, flyers

Standard 8: Legal and Ethical Imaging (1431.S.8)

Analyze legal and ethical aspects of creating digital images.

Legal and Ethical Aspects of Creating Digital Images Objectives

Students will:

- 1431.8.1 Identify and understand the concepts of plagiarism and copyright violations
- 1431.8.2 Discuss ethical and unethical behavior when producing digital images
- 1431.8.3 Discuss laws related to production and distribution of digital images
- 1431.8.4 Identify the legal issues related to the production and distribution of digital images

Document (Word) Processing

WVEIS Code 1433

This course will provide students the opportunity to obtain life long document processing skills through hands on learning situations utilizing a variety of software functions. Classroom experiences also provide for skill development in visual and oral communication.

Standard 1: Basic Concepts and Office Operations (1433.S.1)

Acquire basic concepts and office operations procedures.

Basic Concepts and Office Procedural Operations Objectives

Students will:

- 1433.1.1 Load, access and exit operating system and software.
- 1433.1.2 Use file and disk management procedures such as deleting, copying, backing up files, and formatting disks.
- 1433.1.3 Develop work habits for maintenance of storage media and computer hardware.
- 1433.1.4 Define and use document (word) processing terminology.
- 1433.1.5 Demonstrate the utilization of different word processing software packages.
- 1433.1.6 Perform skills for each phase of the word processing cycle.
- 1433.1.7 Identify document processing supply needs.
- 1433.1.8 Use a software manual as a reference for finding solutions and learning software packages.
- 1433.1.9 Develop work habits and attitudes that will enhance future career endeavors.

Standard 2: Document Production (1433.S.2)

Produce error free documents utilizing a variety of hardware and software.

Error free Documents Utilizing a Variety of Hardware and Software Objective

Students will:

- 1433.2.1 Create documents representing a variety of formats such as letters, reports, tables and memos.
- 1433.2.2 Proofread (manually and electronically) complex business documents.
- 1433.2.3 Insert, delete, move, and copy text and data.
- 1433.2.4 Customize word processing software defaults.
- 1433.2.5 Troubleshoot a word processing problem by obtaining assistance from help screens and printed manuals.
- 1433.2.6 Create and execute macros.
- 1433.2.7 Sort data in ascending and descending order.
- 1433.2.8 Create and merge a primary file with a secondary file.
- 1433.2.9 Utilize on screen forms and templates.
- 1433.2.10 Integrate spreadsheet, database, and word processing applications in documents.
- 1433.2.11 Use transfer skills to understand and compare different word processing software.
- 1433.2.12 Use rough draft handwritten sources to input material.
- 1433.2.13 Practice decision making skills for document processing procedures and priorities.
- 1433.2.14 Compose and produce error free documents.
- 1433.2.15 Recognize and use proofreader's marks.

Standard 3: Electronic Communications (1433.S.3)

Develop the skills necessary to communicate electronically.

Electronic Communications Objectives

Students will:

- 1433.3.1 Access data from news groups, home pages, and other online resources
- 1433.3.2 Upload and download electronic data.

1433.3.3 Identify emerging trends in document processing.

Standard 4: Career Employment Skills (1433.S.4)

Develop skills relating to career employment.

Career Employment Skills Objectives

Students will:

- 1433.4.1 Explore career options.
- 1433.4.2 Compose a letter of application.
- 1433.4.3 Create or update a resume.
- 1433.4.4 Compose an interview follow up letter.

Economics of Business

WVEIS Code 1435

This course focuses on the impact of economics as it relates to businesses and individuals. Because businesses are part of the overall economy, the success of any individual business is strongly affected by events in the economy as a whole. In addition, the economy as a whole is affected by the actions of the individual members within it.

Standard 1: Economic Principles (1435.S.1)

Describe the importance of economic principles in today's society.

Economic Principles in Today's Society Objectives

Students will:

- 1435.1.1 Identify opportunity costs and trade-offs involved in making choices about how to use scarce economic resources.
- 1435.1.2 Give examples of economic wants and needs.
- 1435.1.3 Identify the resources (factors of production) that are used to satisfy wants and needs.
- 1435.1.4 Define economic goods and services.
- 1435.1.5 Explain how the concept of scarcity affects the availability of economic goods and services.

Standard 2: Productivity, Specialization and Division of Labor Change (1435.S.2)

Explain the importance of productivity and discuss how specialization and division of labor change productivity.

Productivity, Specialization and Division of Labor Change Objectives

Students will:

- 1435.2.1 Analyze the methods of increasing productivity.
- 1435.2.2 Demonstrate specialization and division of labor.
- 1435.2.3 Explain how the relationship of input to output affects the level of productivity.

Standard 3: Basic Economic Systems Differences (1435.S.3)

Explain why societies develop economic systems and identify the basic features of different economic systems.

Basic Economic Systems Differences Objectives

Students will:

- 1435.3.1 Explain why a society needs an economic system.
- 1435.3.2 Discuss advantages and disadvantages of different types of economic systems.
- 1435.3.3 Discuss how an economic system addresses the questions what is to be produced, how it is to be produced, and for whom.

Standard 4: Role of Core U.S. Economic Institutions and Incentives (1435.S.4)

Explain the role of core economic institutions and incentives in the U.S. economy.

Core U.S. Economic Institutions and Incentives Objectives

Students will:

- 1435.4.1 Describe the concept of profit in the free enterprise system.
- 1435.4.2 Provide examples of economic institutions and incentives.
- 1435.4.3 Analyze reasons why a society's allocation of resources will be affected by its laws, public policy, and taxation.

Standard 5: Role of Exchange and Money (1435.S.5)

Explain the role of exchange and money in an economic system and describe the effect of interdependence on economic activity.

Role of Exchange and Money Objectives

Students will:

- 1435.5.1 Demonstrate the concept of barter.
- 1435.5.2 Explain why and illustrate how money can contribute to an increased number of exchanges, greater specialization and interdependence, and a higher standard of living in an economy.

Standard 6: Role of Supply and Demand as related to Markets and Prices in the U.S (1435.S.6)

Describe the role of law of supply and demand in the U.S. economy.

Role of Markets and Prices in the U.S. Economy Objectives

Students will:

- 1435.6.1 Define the concept of supply and demand.
- 1435.6.2 Analyze prices as determined by supply and demand.
- 1435.6.3 Identify determinants of supply and demand for goods and services.
- 1435.6.4 Describe how relative prices affect buying and selling decisions of producers and consumers.
- 1435.6.5 Graph the concept of price on a supply and demand curve.

Standard 7: Types of Competitive Structures and Markets (1435.S.7)

Describe different types of competitive structures and illustrate the role of competitive markets in the U.S. and other economies.

Types of Competitive Structures and Markets Objectives

Students will:

- 1435.7.1 Explain how competition among sellers affects prices and profits.
- 1435.7.2 Determine the role of government in preventing private monopolies and regulating public monopolies.
- 1435.7.3 Research U.S. laws and government regulations that are designed to maintain competition.
- 1435.7.4 Compare and contrast price and non-price competition.

Standard 8: Personal Financial Resources and Consumer Decisions (1435.S.8)

Manage limited personal financial resources and recognize that more of the wants and needs of members of a society can be satisfied if wise consumer decisions are made.

Personal Financial Resources and Consumer Decisions Objectives

Students will:

- 1435.8.1 Analyze the consumer decision making process for products and explain why there is variance in price for a given item bought from different suppliers.
- 1435.8.2 Use published consumer resources to collect information for making buying decisions.
- 1435.8.3 Identify sources and types of credit.
- 1435.8.4 Calculate the cost of credit.
- 1435.8.5 Develop a plan to allocate financial resources to meet an individual's financial goals.
- 1435.8.6 Describe the advantages and disadvantages of different saving and investing plans.
- 1435.8.7 Identify services that financial institutions provide to customers.
- 1435.8.8 Perform the steps involved in opening and using a checking account.
- 1435.8.9 Reconcile a bank statement.

Standard 9: U.S. Economy Functions and Measures (1435.S.9)

Explain how the U.S. economy functions as a whole and describe economic measures of economic activity such as gross domestic product, unemployment and inflation.

U.S. Economy Functions and Measures of Activities Objectives

Students will:

- 1435.9.1 Explain the Consumer Price Index.
- 1435.9.2 Analyze the factors that affect Gross Domestic Product.

Standard 10: Role of Government in an Economic System (1435.S.10)

Discuss the role of government in an economic system, especially the necessary and desirable role of government in the U.S. economy.

Role of Government in an Economic System Objectives

Students will:

- 1435.10.1 Explain how government taxation affects consumers and producers.
- 1435.10.2 Define and give examples of progressive, regressive, and proportional taxes.
- 1435.10.3 Analyze the effect of national debt on the level of economic activity.

Standard 11: U.S. Economy Citizens Rights and Responsibilities (1435.S.11)

Describe rights and responsibilities of citizens in the U.S. economy.

U.S. Economy Citizens Rights and Responsibilities Objectives

Students will:

- 1435.11.1 Identify consumer rights.
- 1435.11.2 Describe how legislation defines and protects consumer rights.
- 1435.11.3 Examine how society's needs are balanced against the individual's rights and responsibilities.
- 1435.11.4 Explain how consumer legislation affects product.
- 1435.11.5 Distinguish between fraudulent, misleading, and legitimate product claims.

Standard 12: Economic Relationships Among Nations (1435.S.12)

Examine the importance of economic relationships among nations and discuss the role of international trade and investment and international monetary relations in the global economy.

Economic Relationships Among Nations Objectives

Students will:

- 1435.12.1 Explain the importance of imports and exports in a global economy.
- 1435.12.2 Identify examples of goods and services that imported and exported.
- 1435.12.3 Explain foreign exchange rates and why the value of currency changes.
- 1435.12.4 Explain the advantages and disadvantages of free trade agreements between and among nations.

International Business and Marketing

WVEIS Code 1437

This course is for students with a career interest in the field of international trade or for students who intend to pursue a business/marketing degree. This course provides students with an understanding of the various careers in international trade, finance and marketing. Fundamental concepts, principles, and theories of marketing in an international setting are considered.

Standard 1: Role of International Business (1437.S.1)

Explain the Role of International Business.

Role of International Business Objectives

Students will:

- 1437.1.1 Identify examples of international trade in the local and state community.
- 1437.1.2 Describe the impact of international business activities on the local, regional and national levels.
- 1437.1.3 Analyze the impact of a domestic company involving itself in international trade opportunities.
- 1437.1.4 Describe the resources (e.g., ports, trade routes, transportation centers, foreign trade zones and natural, financial, and human resources) of major cities around the world.
- 1437.1.5 Identify business opportunities in countries in various levels of economic development.

Standard 2: Communication Strategies (1437.S.2)

Apply Communication Strategies in International Business Relations.

Communication Strategies Objectives

Students will:

- 1437.2.1 Compose effective business communications.
- 1437.2.2 Analyze international business blunders resulting from ineffective or incorrect communication patterns.
- 1437.2.3 Identify international cultural differences in food, dress, social behaviors and language.
- 1437.2.4 Compare business protocol of various countries.
- 1437.2.5 State examples of non-verbal communication affecting international businesses.

Standard 3: Social, Cultural, Political, Legal, and Economic Factors (1437.S.3)

Describe Factors That Shape and Impact the International Business Environment.

Social, Cultural, Political, Legal and Economic Factors that Impact the International Business Environment Objectives

Students will:

- 1437.3.1 Identify distinctive social and cultural factors affecting business activities (e.g. time, workday, workweek, schedules, holidays).
- 1437.3.2 Describe how trade barriers, tariffs, quotas and taxation policies affect choice of location for companies operating internationally.
- 1437.3.3 Recognize legal differences that exist between and among countries in areas such as consumer protection, product guidelines, labor laws, contract formulation, liability and taxation.
- 1437.3.4 Define terms such as GDP (GNP), balance of trade, foreign debt and cost of living.
- 1437.3.5 Analyze the availability of resources and economic potential in various countries.
- 1437.3.6 Identify the economic systems used to decide what to produce, how it is produced, and for whom it is produced in a country.
- 1437.3.7 Evaluate the competitive strengths and weaknesses faced by a company involved in international business.

Standard 4: International Finance and Risk Management (1437.S.4)

Explain the Role, Importance, and Concepts of International Finance and Risk Management.

International Finance and Risk Management Objectives

Students will:

- 1437.4.1 Explain how currency exchange rates affect companies.
- 1437.4.2 Identify risks associated with international trade.

Standard 5: Operations and Management of Human Resources (1437.S.5)

Address the Operations and Management of Human Resources.

Operations and Management of Human Resources Objectives

Students will:

- 1437.5.1 Describe the production processes used to create goods and services in different countries.
- 1437.5.2 Discuss factors that influence the type of merchandise/inventory control systems used by companies operating internationally.
- 1437.5.3 Identify the factors that influence the application of managerial styles in different countries.
- 1437.5.4 Describe how compensation and employee benefits differ in various cultures.
- 1437.5.5 Identify how differences in occupational health and safety standards impact the conduct of business internationally.

Standard 6: Marketing Concepts (1437.S.6)

Apply Marketing Concepts to International Business.

Marketing Concepts Objectives

Students will:

- 1437.6.1 Describe how a company markets a product/service in other countries.
- 1437.6.2 Illustrate how social, cultural, technological and geographic factors influence consumer buying behavior in different countries.
- 1437.6.3 Evaluate market potential for a good or service in a foreign market.
- 1437.6.4 Describe how the marketing mix elements need to be adapted for international marketing efforts.
- 1437.6.5 Analyze buying patterns of consumers in a foreign market.
- 1437.6.6 Explain how the marketing research process, including data collection, differs in an international application.
- 1437.6.7 Give examples of countries that have absolute and comparative advantage.
- 1437.6.8 Explain how brands and packages are affected by culture.
- 1437.6.9 Explain how the business environment affects prices charged in foreign markets.
- 1437.6.10 Select distribution channels for a company involved in international business.
- 1437.6.11 Discuss media used in different foreign markets.
- 1437.6.12 Analyze the influence of social and cultural factors affecting promotions used in foreign markets.

Standard 7: Trade Concepts in the Import/Export Process (1437.S.7)

Relate Balance of Trade Concepts to the Import/Export Process.

Trade Concepts Objectives

Students will:

- 1437.7.1 Identify goods and services imported to or exported from a country.
- 1437.7.2 Analyze the import or export potential for a good or service.
- 1437.7.3 Describe the role that U.S. Customs and the customs agencies of other countries play in

- international trade activities.
- 1437.7.4 Define why trade barriers are imposed by governments (such as quotas, tariffs, licensing requirements, exchange rate controls).
- 1437.7.5 Describe international trade agreements (e.g., GATT, NAFTA).

Standard 8: Business Ownership and Entrepreneurial Opportunities (1437.S.8)

Identify Forms of Business Ownership and Entrepreneurial Opportunities.

Forms of Business Ownership and Entrepreneurial Opportunities Objectives

Students will:

- 1437.8.1 Analyze various forms of business ownership (e.g., sole proprietorship, corporation, partnership) for different international business situations.
- 1437.8.2 Determine social and cultural influences on the form of business ownership used or required in different countries.
- 1437.8.3 Identify potential new international business ventures for locally based companies.
- 1437.8.4 Distinguish between licensing and franchising for international business activities.

Standard 9: Technology in International Business. (1437.S.9)

Identify Technology Utilized in International Business.

Technology in International Business Objectives

Students will:

- 1437.9.1 Describe how the use of technology impacts the global market.
- 1437.9.2 Identify global e-commerce legal issues.

Introduction to Business and Marketing

WVEIS Code 1439

This course is an introduction course that explores careers in business and marketing, the role of marketing in today's business world and a broad overview of economics.

Standard 1: Careers in Business and Marketing (1439.S.1)

Explore Careers in Business and Marketing.

Careers Objectives

Students will:

- 1439.1.1 Research and present information regarding careers in business and marketing.
- 1439.1.2 Explain how economic trends affect employment in business and marketing careers.
- 1439.1.3 Complete an interest survey to determine potential career options.

Standard 2: Private Enterprise System (1439.S.2)

Define and Explain How the Market Works in a Private Enterprise System.

Private Enterprise Objectives

Students will:

- 1439.2.1 Explore the benefits businesses provide to the economy.
- 1439.2.2 Compare and contrast the private enterprise system with other economic systems.
- 1439.2.3 Distinguish between consumer needs and wants and how they are satisfied.
- 1439.2.4 Explain how consumers affect the supply and demand for goods and services.
- 1439.2.5 Explain how prices affect consumers and producers.
- 1439.2.6 Describe the economic resources used in the production of goods and services.
- 1439.2.7 Identify and discuss economic measurements.
- 1439.2.8 Describe the four phases of the business cycle.

Standard 3: Social and Ethical Environment of Business (1439.S.3)

Explore Policies of a Diverse Workforce in Business and Marketing.

Social and Ethical Environment Objectives

Students will:

- 1439.3.1 Describe reasons for layoffs and downsizing.
- 1439.3.2 Write a job description.
- 1439.3.3 Discuss on-the-job policies dealing with diversity, drug use on the job, theft in the workplace and sexual harassment.
- 1439.3.4 Identify the functions, levels and responsibilities of managers.
- 1439.3.5 Discuss the pros, cons and implications of unionization.
- 1439.3.6 Explain what is meant by the social responsibilities of business.

Standard 4: Financial Management (1439.S.4)

Demonstrate the Handling of Business Finances.

Financial Management Objectives

Students will:

- 1439.4.1 Explain the types and purposes of financial statements.
- 1439.4.2 Describe the responsibilities of the Federal Reserve System.
- 1439.4.3 Calculate interest and finance charges.
- 1439.4.4 Identify the purpose, process and implications of obtaining credit.
- 1439.4.5 Identify laws that protect the consumer when applying for credit.

- 1439.4.6 Prepare a personal budget.
- 1439.4.7 Reconcile a bank statement.
- 1439.4.8 Obtain information regarding services provided by a financial institution.
- 1439.4.9 Identify the purpose and types of insurance.

Standard 5: Role of Marketing (1439.S.5)

Define the Role of Marketing in Today's World.

Role of Marketing Objectives

Students will:

- 1439.5.1 Apply the four elements of the marketing mix to products and services.
- 1439.5.2 Identify the stages of the product life cycle.
- 1439.5.3 Determine the appropriate channel of distribution for products.
- 1439.5.4 Identify the steps of pricing.
- 1439.5.5 Identify the functions of marketing.

Standard 6: Business Structure

Explore Development and Maintenance of a Business.

Business Structure Objectives

Students will:

- 1439.6.1 Identify unique characteristics of an entrepreneur.
- 1439.6.2 Compare and contrast the advantages and disadvantages of the types of business ownerships.
- 1439.6.3 Discuss the opportunities available to an entrepreneur.
- 1439.6.4 Identify the parts of a business plan and the components.

Standard 7: Government and Business Relationships (1439.S.7)

Explore the Relationship Between Government and Business.

Relationship Between Government and Business Objectives

Students will:

- 1439.7.1 Examine regulations that are encountered when starting a small business.
- 1439.7.2 Distinguish between progressive, proportional and regressive taxes.

Standard 8: International Business (1439.S.8)

Define the Importance of International Business in the Market Place.

International Business Objectives

Students will:

- 1439.8.1 Discuss the pros and cons of free trade.
- 1439.8.2 List examples of United States imports and exports.
- 1439.8.3 Identify specific products that currently are subject to government trade policies.
- 1439.8.4 Compare and contrast the economic systems.
- 1439.8.5 Identify benefits and challenges to competition in the international marketplace.

Standard 9: Role of a Consumer (1439.S.9)

Identify the Role of a Consumer in Business and Marketing.

Role of a Consumer Objectives

Students will:

- 1439.9.1 Describe choices consumers make when buying goods and services.
- 1439.9.2 Discuss the basic rights and responsibilities of a consumer.
- 1439.9.3 Research why regulations are implemented and the effects the regulations have on consumer safety.

Keyboarding and Information Processing

WVEIS Code 1441

A one-year course designed to provide learners with keyboarding skills required for success in academic and occupational areas. Concepts in this area include keyboard operation, formatting skills, computer skills, appropriate work habits, and career awareness.

Standard 1: Exhibit Good Work Habits. (1441.S.1)

Exhibit good work habits.

Work Habits Objectives

Students will:

- 1441.1.1 Follow oral and written instructions in the completion of assigned tasks and plan work efficiently to meet deadlines.
- 1441.1.2 Exhibit the attitudes and work habits necessary for good interpersonal and employee/employer relations in the workforce.
- 1441.1.3 Keep the area in and around the workstation organized by properly assembling supplies and information necessary to complete assigned tasks.
- 1441.1.4 Illustrate desirable work ethics.

Standard 2: Proper Keyboard Operations (1441.S.2)

Demonstrate proper keyboard operation skills.

Keyboard Operations Objectives

Students will:

- 1441.2.1 Master operation of the alphabet, punctuation, number, and symbol keys by touch.
- 1441.2.2 Exhibit proofreading skills by visually checking for errors utilizing computer proofreading tools.
- 1441.2.3 Increase keyboarding speed and accuracy.

Standard 3: Basic Production Skills (1441.S.3)

Apply basic production skills.

Basic Production Skill Objectives

Students will:

- 1441.3.1 Apply information processing concepts.
- 1441.3.2 Correctly manipulate document formatting tools.
- 1441.3.3 Develop language arts skills through composition at the keyboard utilizing capitalization, punctuation, number expression and word usage.
- 1441.3.4 Using correct grammar, key simple business/personal communications in mailable form.
- 1441.3.5 Demonstrate basic production and editing skills in keyboarding and formatting copy for short reports, memorandums, personal/business communications from arranged, rough-draft, handwritten, incomplete or unedited copy.
- 1441.3.6 Illustrate basic formatting skills on enumeration and outlines.
- 1441.3.7 Identify and correctly use proofreaders' marks.
- 1441.3.8 Apply horizontal and vertical centering to text.
- 1441.3.9 Maintain a minimum speed of 40 words per minute with five or fewer errors on a five-minute timed writing.
- 1441.3.10 Prepare envelopes using USPS style and insert correctly folded letters.
- 1441.3.11 Key bound and unbound reports with and without special features i.e., endnotes, internal citations, title page, table of contents, and reference page.
- 1441.3.12 Key various office documents such as minutes of meetings, agendas, cards, labels, forms,

form letters, speeches, tables, and statistical material.
1441.3.13 Practice problem solving and decision-making skills.

Standard 4: Basic Computer Skills (1441.S.4)

Demonstrate basic computer skills.

Basic Computer Skill Objectives

Students will:

- 1441.4.1 Identify hardware components.
- 1441.4.2 Demonstrate the proper care and use of hardware and software.
- 1441.4.3 Be proficient in using operating system commands.
- 1441.4.4 Demonstrate the functions and common features of word processing software.
- 1441.4.5 Exhibit an understanding and proper use of document processing terminology.

Standard 5: Careers (1441.S.5)

Investigate careers.

Career Objectives

Students will:

- 1441.5.1 Integrate the relevance of keyboarding skills to all occupational areas.
- 1441.5.2 Identify documents relative to an employment portfolio.

Legal Office Management

WVEIS Code 1443

This course of study is designed to provide the learner with skills to work in a legal office. Major instructional areas include: legal terminology, personal development and employability skills, managing legal records, processing mail, communication duties, applying computing, accounting, and data skills, processing legal correspondence, operating office equipment, using management skills, and completing office support activities.

Standard 1: Client Service Activities (1443.S.1)

Conduct client service activities.

Client Service Activities Objectives

Students will:

- 1443.1.1 Gather client information and determine referrals based on legal specialty and urgency of request.
- 1443.1.2 Communicate with officers of the court, administrative agencies, and resource persons.
- 1443.1.3 Identify procedures for handling client complaints.
- 1443.1.4 Prepare and manage client records.
- 1443.1.5 Establish and maintain a forms and template file.
- 1443.1.6 Initiate a reference manual.
- 1443.1.7 Add supplements to law library and access Internet resources.
- 1443.1.8 Maintain a database of officers of the court, administrative agencies, and resource persons.
- 1443.1.9 Identify procedures for maintaining confidentiality of client information.
- 1443.1.10 Identify the attitudes and work habits necessary for professional relations with clients and staff in a legal office.
- 1443.1.11 Identify issues related to electronic transfer of legal documents.

Standard 2: Financial Management (1443.S.2)

Develop financial management skills.

Financial Management Objectives

Students will:

- 1443.2.1 Collect fees for reporting depositions and court records.
- 1443.2.2 Maintain firm and client checkbook accounts.
- 1443.2.3 Key attorney's time sheet.
- 1443.2.4 Initiate and maintain client account records (including time spent in meetings and phone calls with clients).
- 1443.2.5 Prepare billing statements.

Standard 3: Legal Correspondence (1443.S.3)

Prepare legal correspondence.

Legal Correspondence Objectives

Students will:

- 1443.3.1 Use correct legal terms in correspondence.
- 1443.3.2 Prepare letters in legal format from handwritten copy, from rough-draft copy, and from dictation.
- 1443.3.4 Edit and revise legal correspondence.

Standard 4: Document Production (1443.S.4)

Display document production techniques.

Document Production Objectives

Students will:

- 1443.4.1 Transcribe dictated material to prepare legal documents and correspondence.
- 1443.4.2 Compose correspondence and appropriate forms to request or communicate information.
- 1443.4.3 Keyboard information using appropriate forms and equipment to format and prepare letters, labels, documents, forms, and statistical reports.
- 1443.4.4 Proofread documents using visual and written communication skills to verify accuracy and completeness and make any necessary corrections.
- 1443.4.5 Prepare litigation documents and forms to communicate information.
- 1443.4.6 Prepare non-litigation documents and forms to communicate information.

Standard 5: Employability Skills (1443.S.5)

Enhance employability skills.

Employability Skill Objectives

Students will:

- 1443.5.1 Discuss and identify the advantages of a professional affiliation and investigate certification options for legal office personnel.
- 1443.5.2 Identify personal interests, aptitudes, and attitudes related to the qualities found in successful legal office personnel.
- 1443.5.3 Apply the principles of ergonomics to the legal office work area.
- 1443.5.4 Develop human relations skills appropriate to dealing with people under stress.
- 1443.5.5 Promote and exemplify high standards of loyalty, cooperation, and courtesy.
- 1443.5.6 Develop a career ladder of occupational opportunities in the legal office and related fields.
- 1443.5.7 Participate in a mock interview for a legal office position.
- 1443.5.8 Compose a letter of application and an interview follow-up letter.
- 1443.5.9 Identify the steps to follow in resigning from a position.
- 1443.5.10 Identify the purpose and types of continuing education.
- 1443.5.11 Update portfolio.

Medical Office Management

WVEIS Code 1443

This course of study is designed to provide the (student) learner with skills to work as a medical office assistant. Major instructional objectives include: handling telephone calls, scheduling appointments, greeting patients, and preparing effective communications. Students will: also become proficient with medical records, patient billing, health insurance, financial records, travel arrangements, meeting preparations, and medical terminology. This course is strongly recommended for Grade 12-Adult.

Standard 1: Medical Business Legal and Ethical Procedures (1443.S.1)

Analyze medical business ethics and legal responsibilities.

Medical Business Legal and Ethical Procedural Objectives

Students will:

- 1443.1.1 Identify proper procedures for selecting, preparing, and releasing patient information.
- 1443.1.2 Summarize safeguards for preventing malpractice litigation as they apply to employees.

Standard 2: Administrative Tasks (1443.S.2)

Conduct and manage administrative responsibilities.

Administrative Responsibilities Objectives

Students will:

- 1443.2.1 Demonstrate telephone etiquette when screening incoming calls and placing outgoing calls.
- 1443.2.2 Apply guidelines of scheduling appointments and proper recording of cancellations and no-shows.
- 1443.2.3 Demonstrate the correct use of alphabetic, geographic, subject, and numeric filing.
- 1443.2.4 Demonstrate the correct use of alphabetic and numeric color coding for medical records filing.
- 1443.2.5 Process incoming and outgoing mail via postal service, facsimile, and e-mail.
- 1443.2.6 Prepare documents from rough-draft copy and from dictation using proper formatting and editing procedures and correct medical terminology.
- 1443.2.7 Compose written communications for a variety of situations.
- 1443.2.8 Transcribe dictation and enter reports into a patient's chart using proper medical terminology and abbreviations.
- 1443.2.9 Analyze coding as related to procedures and diseases.

Standard 3: Insurance Claims (1443.S.3)

Process health insurance claims.

Processing Health Insurance Claim Objectives

Students will:

- 1443.3.1 Describe and differentiate various types of insurance coverage and insurance plans.
- 1443.3.2 Prepare (HCFA) Health Care Financing Administration insurance claim forms for various insurance carriers.
- 1443.3.3 Explain the follow-up process for insurance claims after receiving the EOB (Explanation of Benefits) from the insurance carrier.

Standard 4: Meeting and Travel Preparation (1443.S.4)

Plan medical meetings and arrange travel.

Meeting and Travel Preparation Objectives

Students will:

- 1443.4.1 Determine guidelines for arranging meetings.
- 1443.4.2 Key an agenda.
- 1443.4.3 Key minutes of a meeting.
- 1443.4.4 Determine guidelines for making travel arrangements.
- 1443.4.5 Key an itinerary.

Standard 5: Office Management (1443.S.5)

Perform office management skills.

Office Management Objectives

Students will:

- 1443.5.1 Initiate the development of an office procedures manual.
- 1443.5.2 Apply the principles of ergonomics to the medical assistant's work area.
- 1443.5.3 Maintain an inventory of office forms, supplies, and equipment.

Standard 6: Financial Management (1443.S.6)

Develop financial management skills.

Financial Management Objectives

Students will:

- 1443.6.1 Obtain necessary information from the patient for billing and insurance purposes.
- 1443.6.2 Compute charges and record appropriate entries for services rendered and charges from the superbill.
- 1443.6.3 Prepare daily journals.
- 1443.6.4 Maintain monthly summary records.
- 1443.6.5 Receive payment for services rendered and issue receipts.
- 1443.6.6 Reconcile a bank statement.
- 1443.6.7 Prepare statements/bills on appropriate forms.
- 1443.6.8 Prepare payroll records.

Standard 7: Employability Skills (1443.S.7)

Enhance employability skills.

Employability Objectives

Students will:

- 1443.7.1 Discuss and identify advantages of a professional affiliation and investigate certification options for medical office personnel.
- 1443.7.2 Identify personal interests, aptitudes, and attitudes related to the qualities found in successful medical office personnel.
- 1443.7.3 Develop human relations skills appropriate to dealing with people under stress.
- 1443.7.4 Promote and exemplify high standards of loyalty, cooperation and courtesy.
- 1443.7.5 Develop a career ladder of occupational opportunities in the medical office and related fields.
- 1443.7.6 Participate in a mock interview for a medical office position.
- 1443.7.8 Compose a letter of application and an interview follow-up letter.
- 1443.7.9 Identify the steps to follow in resigning from a position.
- 1443.7.10 Identify the purpose and types of continuing education.
- 1443.7.11 Update portfolio.

Management and Entrepreneurship

WVEIS Code 1445

This course provides a background for the development and operation of a business starting with the role of the entrepreneur in our economy to the development of a business plan and the application of specific marketing skills and concepts within the business environment. This course also explores the planning, organizing and controlling of a business, including organizational and human aspects, with emphasis on various theories of management, the knowledge and understanding necessary for managing people and functions, and decision making.

Standard 1: Careers in Supervision and Management (1445.S.1)

Explore the career of a supervisor/manager.

Supervision and Management Career Objectives

Students will:

- 1445.1.1 Identify unique characteristics of an entrepreneur.
- 1445.1.2 Compare and contrast the scientific management, functional, human relations/behavioral school and quantitative approaches of management.
- 1445.1.3 Identify the characteristics of a successful supervisor/manager.
- 1445.1.4 Identify and discuss the major demographic and societal trends that will affect supervisors/managers in the future.
- 1445.1.5 Summarize the difficulties supervisors/managers face in fulfilling managerial roles.

Standard 2: Managerial Functions of Supervision (1445.S.2)

Apply the managerial functions to a supervisor or manager's role.

Managerial Function Objectives

Students will:

- 1445.2.1 Describe and apply the basic steps of the decision-making process.
- 1445.2.2 Discuss the functions utilized in management.
- 1445.2.3 Write a mission statement for a business or department.
- 1445.2.4 Identify examples of strategic plans, tactical plans and operational plans.
- 1445.2.5 Explain the concept of a chain of command.

Standard 3: Management Communication Skills (1445.S.3)

Explain the importance of effective communication in the manager's role.

Effective Communication Objectives

Students will:

- 1445.3.1 Define communication and discuss its implication for effective management in the manager's role.
- 1445.3.2 Diagram the communication process and explain the importance of each component to the process.
- 1445.3.3 Identify barriers to communication and suggest methods to overcome those barriers.
- 1445.3.4 Compare and contrast the formal, informal, horizontal and vertical channels of communication.
- 1445.3.5 Demonstrate effective communication skills.

Standard 4: Employee Motivation (1445.S.4)

Apply employee motivational factors to the manager's role.

Employee Motivation Objectives

Students will:

- 1445.4.1 Compare various motivation theories and explain their importance for understanding employee behavior.
- 1445.4.2 Analyze the application of Theory X and Theory Y in motivating employees.
- 1445.4.3 Classify motivational factors according to Maslow's hierarchy of needs.
- 1445.4.4 Define job rotation, job enlargement, and job enrichment and their implications in motivating employees.
- 1445.4.5 Investigate the significance of Total Quality Management (TQM).
- 1445.4.6 Explain the concept of authority, responsibility and power as a requirement of any managerial position.
- 1445.4.7 Define delegation, responsibility and accountability and describe their relationship with one another.

Standard 5: Entrepreneurship (1445.S.5)

Explore the role of an entrepreneur.

Entrepreneur Objectives

Students will:

- 1445.5.1 Compare and contrast the advantages and disadvantages of the types of ownership.
- 1445.5.2 Identify entrepreneurial opportunities.
- 1445.5.3 Analyze the parts of a business plan and components included in each part.
- 1445.5.4 Write and present a business plan for a small business.

Standard 6: Marketing Plan (1445.S.6)

Write a marketing plan for a small business.

Marketing Plan Objectives

Students will:

- 1445.6.1 Complete a demographic study to determine a market.
- 1445.6.2 Determine market potential.
- 1445.6.3 Identify direct and indirect competition.
- 1445.6.4 Evaluate competitive strengths and weaknesses.
- 1445.6.5 Explain the importance of choosing a proper location for a business.
- 1445.6.6 Describe the different types of goods and services.
- 1445.6.7 State the marketing concept.
- 1445.6.8 Utilize market segmentation and target marketing.
- 1445.6.9 Identify and apply the components of the marketing mix.
- 1445.6.10 Evaluate the importance of price.
- 1445.6.11 Describe different pricing strategies.
- 1445.6.12 Calculate price.
- 1445.6.13 Describe the steps in the selling process.

Standard 7: Financial Plan (1445.S.7)

Write a financial plan for a small business.

Financial Plan Objectives

Students will:

- 1445.7.1 Analyze the components of a financial plan.
- 1445.7.2 Compute capital needs.

- 1445.7.3 Prepare financial statements (income statement, balance sheet, statement of cash flow).
- 1445.7.4 Analyze financial statements to ascertain financial health of a business.
- 1445.7.5 Identify parts of an accounting system.
- 1445.7.6 Write a personal resume.
- 1445.7.7 Calculate personal net worth.
- 1445.7.8 Identify personal/financial assets available to collateralize.
- 1445.7.9 List potential sources of funds for a business.

Standard 8: Management Plan (1445.S.8)

Write a management plan for a small business.

Management Plan Objectives

Students will:

- 1445.8.1 Compare and contrast types of business ownership.
- 1445.8.2 Develop an organizational chart.
- 1445.8.3 Explain how small businesses recruit effectively.
- 1445.8.4 Prioritize staffing needs.
- 1445.8.5 Identify motivational techniques for employees.
- 1445.8.6 Explain employment laws.
- 1445.8.7 Monitor results of revenue and explain its impact on inventory, personnel, insurance and promotion.
- 1445.8.8 Analyze inventory procedures.
- 1445.8.9 Identify resources available for small business assistance.
- 1445.8.10 Identify government regulations.
- 1445.8.11 Research business risks and prevention control.
- 1445.8.12 List and explain components of a legally enforceable contract.
- 1445.8.13 Discuss business ethics and social responsibility.

Notetaking and Study Skills

WVEIS Code 1447

This course is designed to provide students with basic abbreviated writing skills and enables them to take and transcribe notes at speeds appropriate for educational, business, personal use. Students explore reasons for taking notes, ways to listen effectively, and strategies for improving communication and study skills for academic success.

Standard 1: Reading and Writing Abbreviated Writing (1447.S.1)

Read and write the abbreviated writing system.

Reading and Writing Objectives

Students will:

- 1447.1.1 Read fluently from textbook plates and homework notes.
- 1447.1.2 Achieve a minimum reading of 80 words per minute.
- 1447.1.3 Write the abbreviated language for dictated words, abbreviations, and documents.

Standard 2: Transcription and Dictation (1447.S.2)

Demonstrate dictation and transcription skills.

Transcribing and Dictation Objectives

Students will:

- 1447.2.1 Transcribe the abbreviated language from the textbook plates and homework into longhand using appropriate format.
- 1447.2.2 Transcribe a variety of business documents (memos, letters, outlines) using appropriate format.
- 1447.2.3 Take dictation for two to three minutes at a minimum of 50 words per minute with 90% accuracy.
- 1447.2.4 Use the abbreviated language to take notes from lectures.
- 1447.2.5 Proofread documents for spelling, punctuation, capitalization, number usage, accuracy of content, and clarity of expression.

Standard 3: Note Making Skills (1447.S.3)

Develop sound note making skills that can be applied to education, career, and personal use.

Applying Note Making Skills Objectives

Students will:

- 1447.3.1 Practice notetaking skills to process and organize information using the abbreviated writing system.
- 1447.3.2 Practice notetaking skills from lectures such as the outline format.

Standard 4: Study Skills (1447.S.4)

Develop study skills for academic success.

Success in Academic Studying Skills Objectives

Students will:

- 1447.4.1 Refine appropriate listening skills.
- 1447.4.2 Set goals for learning and review progress in meeting these goals.
- 1447.4.3 Take notes from reading and study for tests using various methods.
- 1447.4.4 Review and revise notes.
- 1447.4.5 Develop skills in organizing and managing work stations, setting priorities for tasks, and

making decisions.

- 1447.4.6 Use notetaking skills to prepare reference cards, note cards, and outlines for research.
- 1447.4.7 Organize study materials (notes, handouts, tests, etc.).
- 1447.4.8 Demonstrate skill in test-taking techniques.
- 1447.4.9 Apply all techniques of effective time management.

Office Management

WVEIS Code 1449

Prerequisite: Keyboarding Applications. This area of study is designed to aid students in becoming skillful in the operation of an office. Major instructional areas include: personal development and employability skills, managing records, processing mail, communication duties, keeping financial records, applying computing, accounting, and data skills, processing business correspondence, operating office equipment, using management skills, and completing office support activities.

Standard 1: Office Administrative Careers (1449.S.1)

Explore office administrative careers.

Office Administrative Career Objectives

The student will:

- 1449.1.1 Research office administrative positions and their educational requirements.
- 1449.1.2 Identify confidentiality concepts and policies in an office.
- 1449.1.3 Identify characteristics of professional conduct (integrity, loyalty, courtesy, etc).
- 1449.1.4 Discuss personal and office ethics
- 1449.1.5 Describe attitudes that contribute to success.

Standard 2: Communication Skills (1449.S.2)

Communicate effectively in a professional and personal manner.

Effective Communications Objectives

The student will:

- 1449.2.1 Create and maintain effective and productive work relationships.
- 1449.2.2 Develop efficient office teams.
- 1449.2.3 Compose business correspondence.
- 1449.2.4 Reproduce and distribute documents and information.
- 1449.2.5 Prepare camera ready copy.
- 1449.2.6 Simulate placing and receiving telephone calls including conference calls.
- 1449.2.7 Prepare written telephone messages.
- 1449.2.8 Process incoming and out-going mail, including electronic mail.
- 1449.2.9 Identify emerging telecommunications.

Standard 3: Office System Maintenance (1449.S.3)

Demonstrate maintaining an office system.

Office System Maintenance Objectives

The student will:

- 1449.3.1 Conduct a needs assessment.
- 1449.3.2 Prepare and maintain an inventory record of software, furniture, hardware, equipment and supplies.
- 1449.3.3 Prepare a cost analysis.
- 1449.3.4 Maintain personal computer/network and printer.
- 1449.3.5 Demonstrate maintenance of office equipment such as copiers and fax machines (add toner, load paper, clear paper path, change cartridge).
- 1449.3.6 Discuss and maintain work station safety.

Standard 4: Financial Functions (1449.S.4)

Prepare and manage financial functions.

Financial Objectives

The student will:

- 1449.4.1 Prepare banking transactions (deposit slips, reconcile bank statement, etc.).
- 1449.4.2 Manage petty cash funds and cash advance accounts.
- 1449.4.3 Prepare payroll records.
- 1449.4.4 Prepare and post check records.
- 1449.4.5 Determine budgetary requirements for office supplies and equipment. AM2
- 1449.4.6 Develop an office budget.
- 1449.4.7 Complete purchase requisitions and vouchers for payment.
- 1449.4.8 Identify various collection procedures.

Standard 5: Information Management (1449.S.5)

Prepare and manage information.

Information Management Objectives

The student will:

- 1449.5.1 Maintain alphabetical filing system and retrieve information from files.
- 1449.5.2 Maintain subject filing system and retrieve information from files.
- 1449.5.3 Maintain numerical filing system and retrieve information from files.
- 1449.5.4 Maintain chronological filing system and retrieve information from files.
- 1449.5.5 Maintain tickler file system and retrieve information from files.

Standard 6: Information and Data Processing (1449.S.6)

Accurately prepare and process information and data.

Preparing and Processing Information and Data Objectives

The student will:

- 1449.6.1 Key documents (agendas, statistical documents, correspondence, etc.).
- 1449.6.2 Use touch system of entry on calculators and 10-key pads.
- 1449.6.3 Transcribe dictation from recorded media (correspondence, reports, minutes of meetings, etc.).
- 1449.6.4 Dictate notes and correspondence.
- 1449.6.5 Enhance formatting of documents.
- 1449.6.6 Create and format tables and charts.
- 1449.6.7 Perform a variety of word processing functions (merge text, sort data, search/replace data, create macros, etc.).
- 1449.6.8 Convert document from one operating system to another.
- 1449.6.9 Create, edit and enhance spreadsheets.
- 1449.6.10 Create and edit a database.
- 1449.6.11 Create queries.
- 1449.6.12 Generate reports
- 1449.6.13 Integrate database, spreadsheet, graphic and word processing files.
- 1449.6.10 Develop text editing and proofreading skills.

Standard 7: Organizing and Planning (1449.S.7)

Demonstrate organizing and planning functions.

Organizing and Planning Objectives

The student will:

- 1449.7.1 Demonstrate time management skills.
- 1449.7.2 Coordinate meetings, events and travel arrangements related to the office.
- 1449.7.3 Recommend improvements in physical layout of the office.

- 1449.7.4 Follow written and oral directions.
- 1449.7.5 Give written and oral directions.
- 1449.7.6 Discuss and maintain office safety

Standard 8: Human Relationship Skills (1449.S.8)

Demonstrate human relations skills.

Human Relation Objectives

The student will:

- 1449.8.1 Develop work processes and procedures (organizational and prioritizing skills).
- 1449.8.2 Develop techniques for introducing and implementing changes.
- 1449.8.3 Coordinate administrative support staff work schedule and workload distribution.
- 1449.8.4 Provide feedback to teams and individuals.
- 1449.8.5 Contribute to development of job descriptions for administrative support staff.
- 1449.8.6 Discuss and analyze an employee performance evaluation

Standard 9: Employability

Develop employability skills. (1449.S.9)

Employability Objectives

The student will:

- 1449.9.1 Develop a career plan and professional growth plan.
- 1449.9.2 Develop and update a resume.
- 1449.9.3 Complete a job application form and write a letter of application.
- 1449.9.4 Demonstrate successful interviewing techniques.
- 1449.9.5 Develop and maintain a portfolio.
- 1449.9.6 Apply for a promotion.
- 1449.9.7 Identify the steps to follow in resigning from a position.
- 1449.9.8 Discuss soliciting letters of recommendation.

Personal Finance

WVEIS Code 1451

Personal Finance is a multi-disciplinary approach to personal financial management for high school students.

Standard 1: Interrelated Roles (1451.S.1)

Describe the interrelated roles of job seeker, wage earner and employee.

Interrelated Roles Objectives

The student will:

- 1451.1.1 Explain job search strategies.
- 1451.1.2 Describe effective tools for securing employment including resume, application letter, interview, and follow-up.
- 1451.1.3 List examples of employee and employer responsibilities at the workplace.
- 1451.1.4 Discuss employee benefits, labor unions and professional organizations.
- 1451.1.5 Identify ethical character traits, such as honesty, integrity, compassion, respect, responsibility, citizenship and justice.

Standard 2: Analyzing and Interpreting (1451.S.2)

Analyze and interpret decisions that contribute to financial stability and personal satisfaction.

Analyzing and Interpreting Objectives

The student will:

- 1451.2.1 Prepare financial planning documents and describe types of contracts.
- 1451.2.2 Prepare documents used with checking accounts, and compare consumer banking services.
- 1451.2.3 Explain purposes, types and history of taxes.
- 1451.2.4 Prepare a short form tax return.
- 1451.2.5 Give examples of savings options, discuss the need for and purpose of savings and compute interest on savings.
- 1451.2.6 Discuss investment options, the need for and purpose of investments and the criteria for choosing investments.
- 1451.2.7 Identify principles of risk management.
- 1451.2.8 Describe benefits of major types of insurance.

Standard 3: Credit Planning (1451.S.3)

Describe credit and plans for using credit in terms of present and future needs and income.

Credit Planning Objectives

The student will:

- 1451.3.1 List advantages and disadvantages of credit, types of credit and sources of credit.
- 1451.3.2 Discuss the concept of creditworthiness as it relates to credit records, credit ratings, credit reports, and credit laws.
- 1451.3.3 Compute the costs of credit.
- 1451.3.4 Discuss methods of reducing credit costs and responsibilities of consumer credit.
- 1451.3.5 List major causes of bankruptcy.
- 1451.3.6 Identify the advantages and disadvantages of bankruptcy.
- 1451.3.7 Discuss bankruptcy laws and their purpose and understand how to solve credit problems.

Standard 4: Economic and Consumer Responsibility (1451.S.1)

Describe common economic problems and consumer responsibility in the marketplace.

Common Economic Problems/Consumer Responsibility Objectives

The student will:

- 1451.4.1 Discuss characteristics of the marketplace and the free enterprise system.
- 1451.4.2 Identify fraudulent and deceptive practices, and prescribe wise consumer behavior.
- 1451.4.3 List consumer Legislation, sources of consumer protection, and describe how to contact public officials to express opinions.
- 1451.4.4 Describe the court system available for use in consumer redress and list other ways of finding remedies for consumer problems.

Spreadsheet Management

WVEIS Code 1453

This area of study is designed to develop intermediate/advanced-level skills in spreadsheet application software. Students will achieve proficiency and expert level skills and will have the opportunity to receive specialized certification by examination. (One semester class)

Standard 1: Worksheets (1453.S.1)

Format worksheets.

Worksheet Objectives

The student will:

- 1453.1.1 Apply formats such as accounting, fraction, scientific, etc.
- 1453.1.2 Create custom formats.
- 1453.1.3 Use styles and auto formats.

Standard 2: Lists (1453.S.2)

Use lists.

List Objectives

The student will:

- 1453.2.1 Sort data.
- 1453.2.2 Query from a list.

Standard 3: Workbooks (1453.S.3)

Print workbooks.

Workbook Printing Objectives

The student will:

- 1453.3.1 Preview workbooks.
- 1453.3.2 Print workbooks.

Standard 4: Auditing Worksheets (1453.S.4)

Audit a worksheet.

Worksheet Auditing Objectives

The student will:

- 1453.4.1 Check and review data.
- 1453.4.2 Find cells referred to in a specific formula.
- 1453.4.2 Find formulas that refer to a specific cell.
- 1453.4.3 Find errors.

Standard 5: Functionality (1453.S.5)

Use advanced functionality.

Functionality Objectives

The student will:

Query databases.

- 1453.5.1 Extract data.
- 1453.5.2 Use filters.
- 1453.5.3 Use data analysis and pivot tables.
- 1453.5.4 Use data map.
- 1453.5.5 Use data validation.
- 1453.5.6 Use conditional formatting.

1453.5.7 Perform multi-level sorts.

Standard 6: Macros (1453.S.6)

Use macros.

Macros Objectives

The student will:

1453.6.1 Create and record macros.

1453.6.2 Edit macros.

1453.6.3 Run macros.

Standard 7: Import and Export Data (1453.S.7)

Import and export data.

Data Importing and Exporting Objectives

The student will:

1453.7.1 Import from other applications.

1453.7.2 Export to other applications.

Standard 8: Templates (1453.S.8)

Use templates.

Template Objectives

The student will:

1453.8.1 Work with existing templates.

1453.8.2 Create templates.

1453.8.3 Edit templates.

Standard 9: Multiple Workbooks (1453.S.9)

Use multiple workbooks.

Multiple Workbook Objectives

The student will:

1453.9.1 Link workbooks.

1453.9.2 Use multiple workbooks.

Standard 10: Workgroup Functions (1453.S.10)

Use workgroup functions.

Workgroup Objectives

The student will:

1453.10.1 Cell tips.

1453.10.2 Share lists.

1453.10.3 Track changes.

1453.10.4 Resolve conflicts.

1453.10.5 Show history of changes.

1453.10.6 Merge workbooks.

Web Page Publishing

WVEIS Code 1455

This course will introduce students to the basic Web page design concepts and provide practice in creating Web sites. Students will explore various applications in Web page design through hands-on activities and experiences which may include: using Web page development software, creating page layouts, adding images and frames, creating elements and components, creating tables, managing files, publishing to the Internet, creating hyperlinks, organizing tasks, and using HTML.

Standard 1: Basic Design Concepts (1455.S.1)

Discuss web page design concepts.

Basic Web Design Objectives

The student will:

- 1455.1.1 Acquire navigational skills for using the World Wide Web effectively.
- 1455.1.2 Define and use Web page design terminology.
- 1455.1.3 Identify Web page design concepts: i.e. themes, bullets, importing, hyperlinks, and frames.
- 1455.1.4 Identify confidentiality concepts and policies.
- 1455.1.5 Identify characteristics of professional conduct.
- 1455.1.6 Identify and analyze Web page design career opportunities.

Standard 2: Web Page Design Software (1455.S.2)

Demonstrate skills utilizing Web Page design software.

Web Page Design Software Objectives

The student will:

- 1455.2.1 Create and edit a Web page using HTML.
- 1455.2.2 Insert images, change image appearance, create Hotspots, and use frames.
- 1455.2.3 Plan and design a web page, create a page with a Wizard, add pages to a web, add text and format a page.
- 1455.2.4 Add multimedia elements and enhancements, i.e. sound and video to a Web page.
- 1455.2.5 Use a digital camera and a scanner to import visuals in a Web page.
- 1455.2.6 Create a Web Site using templates, themes, insert bullets, import from different software.
- 1455.2.7 Create and edit Hyperlinks.
- 1455.2.8 Create a table, add rows and columns, split and merge cells, and change properties.
- 1455.2.9 Customize elements and components of a Web page, create a custom theme, create page transitions, add hit counter, and create a search form.
- 1455.2.10 Practice usability testing for uploading Web pages.
- 1455.2.11 Publish a Web page.
- 1455.2.12 Manage a Web site (check spelling and change text, work with files, manage hyperlinks and organize tasks).
- 1455.2.13 Practice programming using JavaScript.
- 1455.2.14 Evaluate competing Web sites.

Standard 3: Legal and Ethical (1455.S.3)

Determine legal and ethical aspects of Web page publishing.

Legal and Ethical Objectives

The student will:

- 1455.3.1 Practice ethical use of World Wide Web
- 1455.3.2 Identify copyright and patent laws pertaining to Web page publication.
- 1455.3.3 Identify licensing agreements associated with Web Page Design software.
- 1455.3.4 Explain the purpose of deductions and withholdings.

Diversified Cooperative Training I (DCT)

WVEIS Code 0511

This area of study is designed to provide students with a wide range of basic attitudes, knowledge, and skills essential for job success.

Standard 1: Health and Safety Procedures (0511.S.1)

Demonstrate the correct procedures to promote health and safety, personally and professionally.

Health and Safety Procedures Objectives

Students will:

- 0511.1.1 List the most basic safety rules.
- 0511.1.2 Identify the main causes of accidents and describe ways to reduce safety hazards.
- 0511.1.3 List the agencies that work to prevent accidents and explain each agency's purpose.
- 0511.1.4 Propose and follow a plan for the proper procedure in handling accidents.
- 0511.1.5 Develop a list of personal safety rules as they apply personally and professionally.
- 0511.1.6 Read and interpret operating instructions before using any equipment.
- 0511.1.7 Describe the procedures for safe evacuation of the work site in the event of an emergency.
- 0511.1.8 Classify A, B, and C fires and describes methods of extinguishing.
- 0511.1.9 Demonstrate procedures for proper lifting methods.

Standard 2: Communications, Critical Thinking, Computation and Computer Applications (0511.S.2)

Use basic skills as applied to communications, critical thinking, computation, and computer applications.

Communications, Critical Thinking, Computation and Computer Applications Objectives

Students will:

- 0511.2.1 Identify ways of giving orders, directions, and instructions in non-stereotypical language.
- 0511.2.2 Demonstrate the proper way to introduce yourself and others.
- 0511.2.3 Use proper telephone protocol and correctly handle messages.
- 0511.2.4 Develop and practice skills of organizing and delivering oral communications.
- 0511.2.5 Identify barriers to listening and analyze methods for improving listening.
- 0511.2.6 Take meaningful notes to recall and accurately report information from an oral presentation.
- 0511.2.7 Solve problems involving addition, subtraction, multiplication, and division of whole numbers, decimals, and fractions.
- 0511.2.8 Solve problems using different wage plans.
- 0511.2.9 Compute trade or cash discounts to arrive at net price.

Standard 3: Professionalism (0511.S.3)

Exhibit responsibility, self-esteem, sociability, self-management, integrity and honesty.

Professionalism Objectives

Students will:

- 0511.3.1 State the values of having self-respect and a good self-concept.
- 0511.3.2 Develop a plan for self-improvement through evaluation and constructive criticism by varied levels of authority.
- 0511.3.3 Identify the steps for creating and maintaining a positive attitude.
- 0511.3.4 Describe and demonstrate the characteristics of professional conduct.
- 0511.3.5 Explain ways to participate with others as part of a team.
- 0511.3.6 List the steps to problem solving.
- 0511.3.7 Expose students to the opportunities of participating and contributing to professional organizations.

Standard 4: Personal and Financial Resources (0511.S.4)

Identify, organize, plan and allocate resources.

Resource Objectives

Students will:

- 0511.4.1 Prepare a list of short-term and long-term goals.
- 0511.4.2 Utilize time management techniques.
- 0511.4.3 Prepare a budget.
- 0511.4.4 List and explain the range of services offered customers by banks and credit unions.
- 0511.4.5 List the steps involved in opening and maintaining different financial accounts.
- 0511.4.6 Identify the different types of credit and loans and the guidelines for obtaining each.
- 0511.4.7 State the purpose of insurance.
- 0511.4.8 Describe workers compensation and employment security programs.

Standard 5: Legal Rights and Obligations (0511.S.5)

Identify necessary legal rights and obligations as related to the workplace.

Legal Rights and Obligations Objectives

Students will:

- 0511.5.1 List the components necessary in obtaining a legal contract.
- 0511.5.2 Develop an awareness of one's legal rights and obligations as a productive member of society.
- 0511.5.3 Classify laws relating to working conditions, wages, hours, social security, and taxes.
- 0511.5.4 Define sexual harassment and its consequences to all parties involved.
- 0511.5.5 Choose ethical courses of action and exhibit honesty and reliability in words and actions.

Standard 6: Inter-Relationships (0511.S.6)

Describe the inter-relationships of various social, organizational, and technological systems.

Inter-Relationships Objectives

Students will:

- 0511.6.1 Identify the types of business ownership.
- 0511.6.2 Identify the characteristics of global economic systems.
- 0511.6.3 List the role of government in the U.S. economy.
- 0511.6.4 Discuss the functions of supply and demand and its influence on the economy.
- 0511.6.5 Identify the benefits of competition and profit.
- 0511.6.6 Discuss advantages and disadvantages of self-employment.
- 0511.6.7 Identify common characteristics of labor unions.
- 0511.6.8 List reasons labor unions began.
- 0511.6.9 Explain and demonstrate the concept of collective bargaining.
- 0511.6.10 Use parliamentary procedure to conduct a meeting.
- 0511.6.11 Define leadership and develop leadership skills.
- 0511.6.12 Compare the purposes of school and community organizations.
- 0511.6.13 Develop socialization and team skills through group activities.
- 0511.6.14 Exhibit mastery of leadership and technical skills through competitive events.

Standard 7: Job-Seeking, Job-Keeping, and Job-Leaving Skills (0511.S.7)

Develop job-seeking, job-keeping, and job-leaving skills.

Job-Seeking, Job-Keeping, and Job-Leaving Skills Objectives

Students will:

- 0511.7.1 Compose an employment portfolio, in basic business format, including a resume, cover letter, follow-up letter, letters of acceptance/rejection, and letter of resignation.
- 0511.7.2 Complete a job application.
- 0511.7.3 Identify sources of employment opportunities and the steps to initiate a job search.
- 0511.7.4 Respond positively in all aspects of an interview situation.
- 0511.7.5 Identify, select, and use technological equipment relevant to the occupation.
- 0511.7.6 Describe the importance of following a chain of command on the job.
- 0511.7.7 Appraise the importance of punctuality and dependability on the job.
- 0511.7.8 Analyze the necessity of mastering job skills.
- 0511.7.9 Demonstrate how to ask for a raise.
- 0511.7.10 Participate in an exit interview.
- 0511.7.11 Identify ways to handle loss of employment.
- 0511.7.12 Write a letter of reference which could be signed by an employer.
- 0511.7.13 Discuss reasons people work.
- 0511.7.14 Use the Occupational Outlook Handbook to prepare an occupational information search.
- 0511.7.15 Explain how occupations and industries are grouped in career clusters.

Diversified Cooperative Training II (DCT)

WVEIS Code 0512

This area of study is designed to provide students with a wide range of basic attitudes, knowledge, and skills essential for job success.

Standard 1: Health and Safety Procedures (0512.S.1)

Demonstrate the correct procedures to promote health and safety, personally and professionally.

Health and Safety Procedures Objectives

Students will:

- 0512.1.1 List the most basic safety rules.
- 0512.1.2 Identify the main causes of accidents and describe ways to reduce safety hazards.
- 0512.1.3 List the agencies that work to prevent accidents and explain each agency's purpose.
- 0512.1.4 Propose and follow a plan for the proper procedure in handling accidents.
- 0512.1.5 Develop a list of personal safety rules as they apply personally and professionally.
- 0512.1.6 Read and interpret operating instructions before using any equipment.
- 0512.1.7 Describe the procedures for safe evacuation of the work site in the event of an emergency.
- 0512.1.8 Classify A, B, and C fires and describes methods of extinguishing.
- 0512.1.9 Demonstrate procedures for proper lifting methods.

Standard 2: Communications, Critical Thinking, Computation and Computer Applications (0512.S.2)

Use basic skills as applied to communications, critical thinking, computation, and computer applications.

Communications, Critical Thinking, Computation and Computer Applications Objectives

Students will:

- 0512.2.1 Identify ways of giving orders, directions, and instructions in non-stereotypical language.
- 0512.2.2 Demonstrate the proper way to introduce yourself and others.
- 0512.2.3 Use proper telephone protocol and correctly handle messages.
- 0512.2.4 Develop and practice skills of organizing and delivering oral communications.
- 0512.2.5 Identify barriers to listening and analyze methods for improving listening.
- 0512.2.6 Take meaningful notes to recall and accurately report information from an oral presentation.
- 0512.2.7 Solve problems involving addition, subtraction, multiplication, and division of whole numbers, decimals, and fractions.
- 0512.2.8 Solve problems using different wage plans.
- 0512.2.9 Compute trade or cash discounts to arrive at net price.

Standard 3: Professionalism (0512.S.3)

Exhibit responsibility, self-esteem, sociability, self-management, integrity and honesty.

Professionalism Objectives

Students will:

- 0512.3.1 State the values of having self-respect and a good self-concept.
- 0512.3.2 Develop a plan for self-improvement through evaluation and constructive criticism by varied levels of authority.
- 0512.3.3 Identify the steps for creating and maintaining a positive attitude.
- 0512.3.4 Describe and demonstrate the characteristics of professional conduct.
- 0512.3.5 Explain ways to participate with others as part of a team.
- 0512.3.6 List the steps to problem solving.
- 0512.3.7 Expose students to the opportunities of participating and contributing to professional organizations.

Standard 4: Personal and Financial Resources (0512.S.4)

Identify, organize, plan and allocate resources.

Resource Objectives

Students will:

- 0512.4.1 Prepare a list of short-term and long-term goals.
- 0512.4.2 Utilize time management techniques.
- 0512.4.3 Prepare a budget.
- 0512.4.4 List and explain the range of services offered customers by banks and credit unions.
- 0512.4.5 List the steps involved in opening and maintaining different financial accounts.
- 0512.4.6 Identify the different types of credit and loans and the guidelines for obtaining each.
- 0512.4.7 State the purpose of insurance.
- 0512.4.8 Describe workers compensation and employment security programs.

Standard 5: Legal Rights and Obligations (0512.S.5)

Identify necessary legal rights and obligations as related to the workplace.

Legal Rights and Obligations Objectives

Students will:

- 0512.5.1 List the components necessary in obtaining a legal contract.
- 0512.5.2 Develop an awareness of one's legal rights and obligations as a productive member of society.
- 0512.5.3 Classify laws relating to working conditions, wages, hours, social security, and taxes.
- 0512.5.4 Define sexual harassment and its consequences to all parties involved.
- 0512.5.5 Choose ethical courses of action and exhibit honesty and reliability in words and actions.

Standard 6: Inter-Relationships (0512.S.6)

Describe the inter-relationships of various social, organizational, and technological systems.

Inter-Relationships Objectives

Students will:

- 0512.6.1 Identify the types of business ownership.
- 0512.6.2 Identify the characteristics of global economic systems.
- 0512.6.3 List the role of government in the U.S. economy.
- 0512.6.4 Discuss the functions of supply and demand and its influence on the economy.
- 0512.6.5 Identify the benefits of competition and profit.
- 0512.6.6 Discuss advantages and disadvantages of self-employment.
- 0512.6.7 Identify common characteristics of labor unions.
- 0512.6.8 List reasons labor unions began.
- 0512.6.9 Explain and demonstrate the concept of collective bargaining.
- 0512.6.10 Use parliamentary procedure to conduct a meeting.
- 0512.6.11 Define leadership and develop leadership skills.
- 0512.6.12 Compare the purposes of school and community organizations.
- 0512.6.13 Develop socialization and team skills through group activities.
- 0512.6.14 Exhibit mastery of leadership and technical skills through competitive events.

Standard 7: Job-Seeking, Job-Keeping, and Job-Leaving Skills (0512.S.7)

Develop job-seeking, job-keeping, and job-leaving skills.

Job-Seeking, Job-Keeping, and Job-Leaving Skills Objectives

Students will:

- 0512.7.1 Compose an employment portfolio, in basic business format, including a resume, cover letter,

- follow-up letter, letters of acceptance/rejection, and letter of resignation.
- 0512.7.2 Complete a job application.
 - 0512.7.3 Identify sources of employment opportunities and the steps to initiate a job search.
 - 0512.7.4 Respond positively in all aspects of an interview situation.
 - 0512.7.5 Identify, select, and use technological equipment relevant to the occupation.
 - 0512.7.6 Describe the importance of following a chain of command on the job.
 - 0512.7.7 Appraise the importance of punctuality and dependability on the job.
 - 0512.7.8 Analyze the necessity of mastering job skills.
 - 0512.7.9 Demonstrate how to ask for a raise.
 - 0512.7.10 Participate in an exit interview.
 - 0512.7.11 Identify ways to handle loss of employment.
 - 0512.7.12 Write a letter of reference which could be signed by an employer.
 - 0512.7.13 Discuss reasons people work.
 - 0512.7.14 Use the Occupational Outlook Handbook to prepare an occupational information search.
 - 0512.7.15 Explain how occupations and industries are grouped in career clusters.

DCT Work Experience I

WVEIS Code 0513

DCT Work Experience I is a method of instruction for students to receive on-the-job training that contributes to the over-all instructional program. The instruction, through written agreement between school and employers, is a combination of study in school with employment in the appropriate field. The related classroom instruction and on-the-job experiences are planned and supervised by employers and teacher coordinators to complete the student's education as to his/her career objective.

Standard 1: Human Relations Skills (0513.S.1)

Students will demonstrate human relation skills.

Human Relations Skills Objectives

Students will:

- 0513.1.1 Demonstrate honesty and integrity.
- 0513.1.2 Use proper business ethics in all business activities.
- 0513.1.3 Demonstrate respect for customers, co-workers and management.
- 0513.1.4 Demonstrate initiative in completing job duties.
- 0513.1.5 Maintain a positive attitude and positive relationship with customers, co-workers and management.
- 0513.1.6 Adapt to changes in job responsibilities.
- 0513.1.7 Appreciate diversity in the workplace.
- 0513.1.8 Exhibit self-control when working with customers, co-workers and management.
- 0513.1.9 Use appropriate assertiveness.
- 0513.1.10 Exhibit empathy for customers, co-workers and management.
- 0513.1.11 Use feedback from others for personal growth.
- 0513.1.12 Practice proper business etiquette.
- 0513.1.13 Identify procedures to respond to sexual harassment.

Standard 2: Business Communications (0513.S.2)

Students will demonstrate appropriate business communication skills.

Business Communications Objectives

Students will:

- 0513.2.1 Use correct grammar and vocabulary in written and oral communications.
- 0513.2.2 Listen to and follow directions.
- 0513.2.3 Explain policies and procedures to customers and clients.
- 0513.2.4 Perform proper telephone techniques appropriately.
- 0513.2.5 Demonstrate the proper procedure for job termination.

Standard 3: Basic Work Skills (0513.S.3)

Students will demonstrate mastery of basic work skills for a chosen occupation.

Basic Work Skills Objectives

Students will:

- 0513.3.1 Maintain punctuality, appropriate attendance and dependability.
- 0513.3.2 Work independently without direct supervision.
- 0513.3.3 Stay with an assigned task until successful completion.
- 0513.3.4 Utilize time management principles when completing assignments.
- 0513.3.5 Apply organizational skills in daily activities.
- 0513.3.6 Participate as a team member when completing a work project.
- 0513.3.7 Produce quality work.

- 0513.3.8 Accept accountability for one's performance.
- 0513.3.9 Perform basic mathematical functions.
- 0513.3.10 Operate the most common electronic equipment with speed and accuracy.
- 0513.3.11 Maintain appropriate records for use on the job and in class.
- 0513.3.12 Demonstrate leadership skills when completing a project or task.
- 0513.3.13 Exhibit decision-making skills.
- 0513.3.14 Solve problems individually and as a team member.
- 0513.3.15 Participate in company meetings and activities.

Standard 4: Basic Safety Techniques (0513.S.4)

Students will apply and demonstrate basic safety techniques.

Basic Safety Techniques Objectives

Students will:

- 0513.4.1 Practice basic safety rules.
- 0513.4.2 Handle company equipment properly and safely.
- 0513.4.3 Demonstrate safety procedures for handling and lifting heavy materials.
- 0513.4.4 Follow procedures in the case of an accident, including reporting procedures.
- 0513.4.5 Follow security procedures.
- 0513.4.6 Practice proper safety procedures for handling and storing hazardous materials.
- 0513.4.7 Recognize and report hazardous conditions.
- 0513.4.8 Read and interpret operating instructions before using equipment.
- 0513.4.9 Explain and practice procedures for safe evacuation.
- 0513.4.10 Classify type A, B and C fires and describe characteristics in order to extinguish properly.
- 513.4.11 Identify proper agencies for safety procedures (fire department, police department, OSHA, hospital).

DCT Work Experience II

WVEIS Code 0514

DCT Work Experience II is a method of instruction for students to receive on-the-job training that contributes to the over-all instructional program. The instruction, through written agreement between school and employers, is a combination of study in school with employment in the appropriate field. The related classroom instruction and on-the-job experiences are planned and supervised by employers and teacher coordinators to complete the student's education as to his/her career objective.

Standard 1: Human Relations Skills (0514.S.1)

Students will demonstrate human relation skills.

Human Relations Skills Objectives

Students will:

- 0514.1.1 Demonstrate honesty and integrity.
- 0514.1.2 Use proper business ethics in all business activities.
- 0514.1.3 Demonstrate respect for customers, co-workers and management.
- 0514.1.4 Demonstrate initiative in completing job duties.
- 0514.1.5 Maintain a positive attitude and positive relationship with customers, co-workers and management.
- 0514.1.6 Adapt to changes in job responsibilities.
- 0514.1.7 Appreciate diversity in the workplace.
- 0514.1.8 Exhibit self-control when working with customers, co-workers and management.
- 0514.1.9 Use appropriate assertiveness.
- 0514.1.10 Exhibit empathy for customers, co-workers and management.
- 0514.1.11 Use feedback from others for personal growth.
- 0514.1.12 Practice proper business etiquette.
- 0514.1.13 Identify procedures to respond to sexual harassment.

Standard 2: Business Communications (0514.S.2)

Students will demonstrate appropriate business communication skills.

Business Communications Objectives

Students will:

- 0514.2.1 Use correct grammar and vocabulary in written and oral communications.
- 0514.2.2 Listen to and follow directions.
- 0514.2.3 Explain policies and procedures to customers and clients.
- 0514.2.4 Perform proper telephone techniques appropriately.
- 0514.2.5 Demonstrate the proper procedure for job termination.

Standard 3: Basic Work Skills (0514.S.3)

Students will demonstrate mastery of basic work skills for a chosen occupation.

Basic Work Skills Objectives

Students will:

- 0514.3.1 Maintain punctuality, appropriate attendance and dependability.
- 0514.3.2 Work independently without direct supervision.
- 0514.3.3 Stay with an assigned task until successful completion.
- 0514.3.4 Utilize time management principles when completing assignments.
- 0514.3.5 Apply organizational skills in daily activities.
- 0514.3.6 Participate as a team member when completing a work project.
- 0514.3.7 Produce quality work.

- 0514.3.8 Accept accountability for one's performance.
- 0514.3.9 Perform basic mathematical functions.
- 0514.3.10 Operate the most common electronic equipment with speed and accuracy.
- 0514.3.11 Maintain appropriate records for use on the job and in class.
- 0514.3.12 Demonstrate leadership skills when completing a project or task.
- 0514.3.13 Exhibit decision-making skills.
- 0514.3.14 Solve problems individually and as a team member.
- 0514.3.15 Participate in company meetings and activities.

Standard 4: Basic Safety Techniques (0514.S.4)

Students will apply and demonstrate basic safety techniques.

Basic Safety Techniques Objectives

Students will:

- 0514.4.1 Practice basic safety rules.
- 0514.4.2 Handle company equipment properly and safely.
- 0514.4.3 Demonstrate safety procedures for handling and lifting heavy materials.
- 0514.4.4 Follow procedures in the case of an accident, including reporting procedures.
- 0514.4.5 Follow security procedures.
- 0514.4.6 Practice proper safety procedures for handling and storing hazardous materials.
- 0514.4.7 Recognize and report hazardous conditions.
- 0514.4.8 Read and interpret operating instructions before using equipment.
- 0514.4.9 Explain and practice procedures for safe evacuation.
- 0514.4.10 Classify type A, B and C fires and describe characteristics in order to extinguish properly.
- 0514.4.11 Identify proper agencies for safety procedures (fire department, police department, OSHA, hospital).

Life Connections

WVEIS Code 0901

This course will enable students to develop skills for assuming their role in society as productive, successful individuals. Recommended Grade Level: 11-12.

Standard 1: Management (0901.S.1)

The students will develop criteria for managing different phases of one's life span.

Management Objectives

Students will:

- 0901.1.1 Use decision-making skills to solve problems.
- 0901.1.2 Analyze components of the management process.
- 0901.1.3 Examine management needs at various stages of life.
- 0901.1.4 Develop strategies for managing financial resources.
- 0901.1.5 Investigate ways to protect environmental resources.
- 0901.1.6 Practice consumer decisions that meet basic human needs.

Standard 2: Relationships (0901.S.2)

The students will develop an understanding of the different aspects of a healthy, positive relationship.

Relationships Objectives

Students will:

- 0901.2.1 Evaluate components of respectful health relationships.
- 0901.2.2 Demonstrate communication skills that contribute to positive relationships.
- 0901.2.3 Practice conflict resolution techniques.
- 0901.2.4 Demonstrate leadership skills and community involvement.

Standard 3: Parenting (0901.S.3)

The students will investigate the different phases of parenting and parenting skills.

Parenting Objectives

Students will:

- 0901.3.1 Analyze parenting roles and responsibilities.
- 0901.3.2 Explore the impact of diversity on families and society.
- 0901.3.3 Examine basic parenting skills.
- 0901.3.4 Investigate laws and services that impact parenting.

Standard 4: Wellness (0901.S.4)

The students will develop an understanding of how food choices can impact one's health and lifestyle.

Wellness Objectives

Students will:

- 0901.4.1 Evaluate the impact of food choices on wellness.
- 0901.4.2 Formulate a plan to achieve a health lifestyle.

Standard 5: Careers and Technology (0901.S.5)

The students will demonstrate an understanding of selecting a career and how electronic technologies are used within these career fields.

Careers and Technology Objectives

Students will:

- 0901.5.1 Develop criteria for making career choices.
- 0901.5.2 Evaluate strategies for balancing work and personal life.
- 0901.5.3 Use electronic technologies to complete a variety of assignments.
- 0901.5.4 Demonstrate appropriate written and oral communications.

Parenting And Child Development

WVEIS Code 0902

This course is designed to help students evaluate readiness for parenting while examining appropriate parenting and child development practices. Students will develop an awareness of societal issues affecting families and explore support systems. Other areas of focus will be career management and technology. Recommended Grade Level: 9-12.

Standard 1: Readiness for Parenting (0902.S.1)

The students will demonstrate an understanding of the roles and responsibilities of parenting.

Readiness for Parenting Objectives

Students will:

- 0902.1.1 Describe roles and responsibilities of parenting.
- 0902.1.2 Analyze personal readiness for parenting.
- 0902.1.3 Examine family structures.
- 0902.1.4 Review biological processes related to conception.
- 0902.1.5 Evaluate contraceptive methods.

Standard 2: Appropriate Parenting/Child Development Practices (0902.S.2)

The students will demonstrate an understanding of appropriate parenting/child development practices.

Parenting/Child Development Practices Objectives

Students will:

- 0902.2.1 Analyze factors which contribute to prenatal health.
- 0902.2.2 Review birth processes.
- 0902.2.3 Analyze factors which contribute to post-natal health.
- 0902.2.4 Cite theories related to child development.
- 0902.2.5 Examine the physical, emotional, social, intellectual and moral development of children.
- 0902.2.6 Evaluate parenting practices that promote health, safety and wellness.
- 0902.2.7 Recognize appropriate realistic guidance, discipline, and communication techniques.
- 0902.2.8 Examine the types, causes and effects of child abuse.
- 0902.2.9 Analyze parenting practices for children with special needs.

Standard 3: Societal Issues Affecting Families (0902.S.3)

The students will explore and evaluate the societal issues affecting families.

Societal Issues Affecting Families Objectives

Students will:

- 0902.3.1 Explore the impact of diversity on families and society.
- 0902.3.2 Formulate a plan to deal with crises in families.
- 0902.3.3 Investigate the legal and ethical impact of science and technology.

Standard 4: Support Systems For Families (0902.S.4)

The students will explore and develop criteria for a family support system.

Support Systems For Families Objectives

Students will:

- 0902.4.1 Develop criteria for evaluating child care alternatives.
- 0902.4.2 Review current laws related to parenting.
- 0902.4.3 Assess sources of assistance available to families.

Standard 5: Career Management and Technology (0902.S.5)

The students will demonstrate an understanding of careers in the area of parenting/child development and how electronic technologies are used within these career fields.

Career Management and Technology Objectives

Students will:

- 0902.5.1 Explore career opportunities related to parenting/child development.
- 0902.5.2 Use electronic technologies to complete a variety of assignments.
- 0902.5.3 Demonstrate appropriate written and oral communications.

Consumer Economics

WVEIS Code 0911

**This course will enable students to analyze human economics and environmental resources.
Grades 9-12.**

Standard 1: Human Economic and Environmental Resources (0911.S.1)

The students will analyze individual, family and community needs.

Human Economic and Environmental Resources Objectives

Students will:

- 0911.1.1 Demonstrate management of individual and family needs, including food, clothing, shelter, health care, recreation, and transportation.
- 0911.1.2 Apply management and planning skills and processes to organize tasks and responsibilities.
- 0911.1.3 Examine how individuals and families make choices to satisfy needs and wants.
- 0911.1.4 Implement decisions about providing safe and nutritious food for individuals and families.
- 0911.1.5 Implement decisions about purchasing, creating, and maintaining clothing.
- 0911.1.6 Implement decisions about housing and furnishings.
- 0911.1.7 Examine information about procuring and maintaining health care.
- 0911.1.8 Implement decisions about recreational needs.
- 0911.1.9 Apply consumer skills to acquire and maintain transportation.

Standard 2: Environment (0911.S.2)

The students will analyze the relationship of the environment to family and consumer resources.

Environment Objectives

Students will:

- 0911.2.1 Determine individual and family responsibility in relationship to the environmental trends and issues.
- 0911.2.2 Examine behaviors that conserve, reuse, and recycle resources to maintain the environment.
- 0911.2.3 Investigate government regulations for conserving natural resources.

Standard 3: Consumer Rights and Responsibilities (0911.S.3)

The students will analyze policies that support consumer rights and responsibilities.

Consumer Rights and Responsibilities Objectives

Students will:

- 0911.3.1 Examine state and federal policies and laws providing consumer protection.
- 0911.3.2 Investigate how policies become laws related to consumer rights.
- 0911.3.3 Examine skills used in seeking information related to the individual consumer.

Standard 4: Technology Impact (0911.S.4)

The students will evaluate the impact of technology on individual and family resources.

Technology Impact Objectives

Students will:

- 0911.4.1 Review types of technology that impact family and consumer decision-making.
- 0911.4.2 Examine how media and technological advances impact family and consumers decisions.
- 0911.4.3 Assess the use of technology and its impact on quality of life.

Standard 5: Economic System vs. Consumer Actions (0911.S.5)

Students will analyze interrelationships between the economic system and consumer actions.

Economic System vs. Consumer Actions Objectives

Students will:

- 0911.5.1 Examine the use of resources in making choices that satisfy needs and wants of individuals and families.
- 0911.5.2 Examine individual and family roles in the economic system.
- 0911.5.3 Examine economic impacts of laws and regulations that pertain to consumers and providers of services.
- 0911.5.4 Determine practices that allow families to maintain economic self-sufficiency.

Standard 6: Financial Resources Management (0911.S.6)

Students will demonstrate management of financial resources to meet the goals of individuals and families across the life span.

Financial Resources Management Objectives

Students will:

- 0911.6.1 Examine the need for personal and family financial planning.
- 0911.6.2 Apply management principles to decisions about individual and family insurance.
- 0911.6.3 Obtain personal and legal documents related to managing individual and family finances

Standard 7: Consumer Service Industries Career Paths (0911.S.7)

Student will analyze career paths within consumer service industries.

Consumer Service Industries Career Paths Objectives

Students will:

- 0911.7.1 Determine roles and functions of individuals engaged in consumer service careers.
- 0911.7.2 Explore opportunities for employment and entrepreneurial endeavors.
- 0911.7.3 Examine education and training requirements and opportunities for career paths in consumer services.
- 0911.7.4 Examine the impact of the consumer service industry on local, state, national and global economies.

Standard 8: Consumer Advocacy (0911.S.8)

Students will analyze factors that impact consumer advocacy.

Consumer Advocacy Objectives

Students will:

- 0911.8.1 Examine the role of advocacy groups at state and national levels.
- 0911.8.2 Determine the contributions of policy makers to consumer advocacy.
- 0911.8.3 Explore strategies that enable consumers to become advocates.
- 0911.8.4 Examine the effects of consumer protection laws on advocacy.
- 0911.8.5 Determine strategies to reduce the risk of consumer fraud.
- 0911.8.6 Examine the role of media in consumer advocacy.
- 0911.8.7 Determine the effects of manufacturers' policies and procedures on advocacy.
- 0911.8.8 Explore the use of educational and promotional materials in consumer advocacy.

Standard 9: Long-term Financial Management (0911.S.9)

Students will analyze factors in developing a long-term financial management plan.

Long-term Financial Management Objectives

Students will:

- 0911.9.1 Explain the impact of the economic system on personal income, individual and family security and consumer decisions.

- 0911.9.2 Examine components of a financial planning process that reflects the distinction between needs and wants, values, goals, and economic resources.
- 0911.9.3 Determine the impact on consumers' credit in long-term financial planning.
- 0911.9.4 Examine investment and savings alternatives.
- 0911.9.5 Determine the effects of risk management strategies on long term financial planning.
- 0911.9.6 Consider the impact of key life transitions on financial planning.
- 0911.9.7 Explain the role of estate planning in long-term financial planning.

Standard 10: Conservation and Waste Management (0911.S.10)

Students will analyze resource consumption for conservation and waste management practices.

Conservation and Waste Management Objectives

Students will:

- 0911.10.1 Investigate sources and types of commercial energy, waste disposal, and pollution issues.
- 0911.10.2 Investigate consumer programs and services provided by government, public utilities, resource recovery businesses, and environmental organizations.
- 0911.10.3 Explore strategies and provide practices to conserve energy and distribute or find information.
- 0911.10.4 Examine waste management issues.
- 0911.10.5 Examine roles of government and mixed industry in energy consumption.

Standard 11: Product Development, Testing and Presentation (0911.S.11)

Students will demonstrate skills needed for product development, testing, and presentation.

Product Development, Testing and Presentation Objectives

Students will:

- 0911.11.1 Conduct market research to determine consumer trends and product development needs.
- 0911.11.2 Design or analyze a consumer product.
- 0911.11.3 Examine features, prices, product information, styles, and performance of consumer goods for potential trade-offs among the components.
- 0911.11.4 Perform a test on a product utilizing valid and reliable testing procedures.
- 0911.11.5 Apply statistical analysis processes to interpret, summarize, and report data from tests.
- 0911.11.6 Examine the labeling, packaging, and support materials of consumer goods.
- 0911.11.7 Demonstrate a product or educate an audience.
- 0911.11.8 Utilize appropriate sales techniques to compare, demonstrate, assist, and advise consumers in the selection of goods and services that meet consumer needs.

Adolescent Parent Program

WVEIS Code 0921

The focus of this course is to assist the pregnant and parenting teen to complete his/her education by balancing the responsibilities of parenthood and schoolwork.

Standard 1: Adolescent Development (0921.S.1)

The student will analyze present and future life stages.

Adolescent Development Objectives

Students will:

- 0921.1.1 Describe the steps in the decision-making model and be able to apply them to individual situations.
- 0921.1.2 Determine life skills necessary to live and prosper in the real world.
- 0921.1.3 Explain how lifestyle factors influence quality of life.
- 0921.1.4 Develop verbal and written communication skills.
- 0921.1.5 Assess self-esteem and its effects upon the self and others.
- 0921.1.6 Analyze the role of individual responsibility for enhancing health.
- 0921.1.7 Assess the positive and negative effects of stressors on the body, and develop strategies to cope with stress.

Standard 2: Prenatal Care (0921.S.2)

The student will gain knowledge on how to reduce pregnancy risks.

Prenatal Care Objectives

Students will:

- 0921.2.1 Describe the male and female reproductive organs and how the process of conception occurs.
- 0921.2.2 Describe maternal changes during pregnancy.
- 0921.2.3 Identify ways of meeting the mother's changing physical and emotional needs.
- 0921.2.4 Evaluate nutritional needs of pregnant and lactating teens.
- 0921.2.5 Identify nutrients required for fetal development.
- 0921.2.6 Describe a baby's development from conception to birth.
- 0921.2.7 Describe the dangers to the baby if the mother smokes, takes drugs or drinks alcohol during her pregnancy.
- 0921.2.8 Identify environmental influences that cause birth defects or problems for the baby.
- 0921.2.9 Assess factors related to sexually transmitted diseases and these diseases' effects on the mother and the baby.
- 0921.2.10 Describe the physical and psychological implications of prenatal exercise and fitness.
- 0921.2.11 Describe warning signs that may indicate problems for the baby before birth.
- 0921.2.12 Identify the purpose and procedures of obstetric examinations.
- 0921.2.13 Explain the labor and delivery process.
- 0921.2.14 Describe the mother's postpartum care needs.
- 0921.2.15 Describe characteristics and care of the newborn at the hospital.
- 0921.2.16 Explain newborn care practices.
- 0921.2.17 Plan for the prevention of future unwanted pregnancies.

Standard 3: Parenting Roles (0921.S.3)

The student will investigate the role of a responsible parent.

Parenting Roles Objectives

Students will:

- 0921.3.1 Assess parenting roles and responsibilities in child rearing.
- 0921.3.2 Discuss reasonable actions to solve common parenting concerns.
- 0921.3.3 Demonstrate appropriate discipline for children.

- 0921.3.4 Examine alternative child-care choices.
- 0921.3.5 Compare the effectiveness of meeting the needs of children.

Standard 4: Child Development (0921.S.4)

The student will access methods to aid in child development.

Child Development Objectives

Students will:

- 0921.4.1 Describe the realities of caring for a newborn.
- 0921.4.2 Demonstrate techniques for bathing a baby, preventing and treating diaper rash, caring for a colicky baby, and dealing with a crying baby.
- 0921.4.3 Demonstrate methods of interacting and playing with children.
- 0921.4.4 Describe the social, emotional, mental, and physical stages of the developing child, identify factors affecting this development and list the importance of realistic expectations.
- 0921.4.5 Discuss the factors that influence a child's self-concept.
- 0921.4.6 Create ways to enhance children's self-worth.
- 0921.4.7 Demonstrate effective skills for interacting with children, (i.e. touching, massage, talking, role-modeling.)
- 0921.4.8 Examine children's health and safety issues.
- 0921.4.9 Research how to childproof a home and eliminate hazards.
- 0921.4.10 Describe how to select books for young children and techniques for reading to children.
- 0921.4.11 Describe first-aid skills for common childhood injuries.
- 0921.4.12 Demonstrate basic cardiopulmonary resuscitation.

Standard 5: Child Nutrition (0921.S.5)

The student will develop an understanding of how food choices will impact a child's health and wellness.

Child Nutrition Objectives

Students will:

- 0921.5.1 Analyze the nutritional needs of infants.
- 0921.5.2 Evaluate children's nutritional needs for a healthy lifestyle.
- 0921.5.3 Create interesting, fun, and nutritional snacks for children.

Standard 6: Financial and Community Resources (0921.S.6)

The student will develop a list of financial and community resources available to pregnant and parenting teens.

Financial and Community Resources Objectives

Students will:

- 0921.6.1 Identify and assess sources of support for pregnant and parenting teens and their families.
- 0921.6.2 Identify various parenting resources, and analyze current issues, trends, and research in parenting.
- 0921.6.3 Demonstrate how to access pregnancy/parenting information through the use of multi-media technology.
- 0921.6.4 Analyze current national, state and local statistics addressing sexual activity and develop future prevention strategies for the community

Standard 7: Career Development (0921.S.7)

The student will demonstrate the use of electronic technologies for planning and researching career goals.

Career Development Objectives

Students will:

- 0921.7.1 Set short-term and long-term personal, educational, and career goals.
- 0921.7.2 Develop a plan to achieve personal, educational, and career goals, and develop a plan to achieve those goals.
- 0921.7.3 Identify career options based on self-assessment and career assessment data.
- 0921.7.4 Investigate traditional and non-traditional jobs/careers for women.
- 0921.7.5 Access gender bias, sex-role stereotyping, and vocational sex equity for men and women.
- 0921.7.6 Analyze workplace sexual harassment, the laws and incidents of harassment.
- 0921.7.7 Identify job-seeking and job-keeping skills.

(Base) Basic Attitudes, Skills and Experiences

WVEIS Code 0922

The student will focus on a variety of life skills and abilities that will assist their development of responsibility and self disciplined behaviors. The student will work through many decision making and problem solving situations in areas of career awareness, life style choices, community involvement, lifetime relationships, consumer skills, enhancing communication, managing one's health, leadership and citizenship.

BASE is designed to meet the unique needs of Family and Consumer Sciences (FACS) middle and junior high programs that have a wide variety of configurations. BASE is a very flexible curriculum that can meet the needs of various age groups and the wide variety of course lengths and school scheduling programs.

Standard 1: Basic Skills (0922.S.1)

The students will reinforce basic skills by completing daily BASE assignments.

Basic Skills Objectives

Students will:

- 0922.1.1 Enhance reading, writing and math skills through assigned FACS curriculum.
- 0922.1.2 Improve communication skills, both oral and written, through involvement in oral presentations and written reports relating to FACS curriculum.
- 0922.1.3 Investigate a variety of Human Services career goals.

Standard 2: Personal Development/Family Relationships (0922.S.2)

The student will work toward a positive self-identity and learn to relate to others.

Personal Development/Family Relationships Objectives

Students will:

- 0922.2.1 Explain how an individual's roles and personal traits influence the development of their self-concept.
- 0922.2.2 Identify factors affecting both positive and negative self-concept.
- 0922.2.3 Describe common development characteristics changes of early adolescents and how these changes influence an individual's self-concept.
- 0922.2.4 Investigate, "Who am I."
- 0922.2.5 Use problem-solving and decision making techniques in coping with assigned adolescent problems.
- 0922.2.6 Distinguish good and poor traits of being a good friend.
- 0922.2.7 Formulate a plan to make yourself a good friend.
- 0922.2.8 Define family, generation, affection, and respect for others.
- 0922.2.9 Demonstrate the different family roles individuals play across their life span.
- 0922.2.10 Identify the relationship between children and parents.
- 0922.2.11 Define your individual family role.
- 0922.2.12 Investigate the importance of caring for children in a responsible way.
- 0922.2.13 Identify relationships between rights and responsibilities of family members.
- 0922.2.14 Identify family crisis situations and community sources of help.
- 0922.2.15 Describe the effect of social problems on the individual, family and society.

Standard 3: Management (0922.S.3)

The student will gain effective management skills.

Management Objectives

Students will:

- 0922.3.1 Explain the difference between an individual's wants and needs.

- 0922.3.2 Distinguish between an individual's basic physical and emotional needs.
- 0922.3.3 Define resources, human resources, nonhuman resources, private resources, public resources and scarce resources.
- 0922.3.4 Describe different ways in which resources can be used.
- 0922.3.5 Describe values, goals and priorities.
- 0922.3.6 Relate the importance of values in making personal decisions.
- 0922.3.7 Identify goals, rank goals, and determine ways in which resources can help one reach these goals.
- 0922.3.8 Define management, management process, schedule, implement, evaluate, time management, habit and procrastinate.
- 0922.3.9 Identify the steps in the management process.
- 0922.3.10 Demonstrate how individuals can manage their time.
- 0922.3.11 Identify income, money management, budget, fixed expenses, flexible expenses, consumer, unit price, quality and warranty.
- 0922.3.12 Demonstrate how to make a budget.
- 0922.3.13 Research and give examples of how an individual can shop wisely.
- 0922.3.14 Determine how personal and shared space and property can be used effectively.

Standard 4: Nutrition and Wellness (0922.S.4)

The student will analyze the effects of nutrition on wellness.

Nutrition and Wellness Objectives

Students will:

- 0922.4.1 Give examples of how food is related to family traditions.
- 0922.4.2 Identify the many roles of food in the body.
- 0922.4.3 Identify those factors that influence eating habits.
- 0922.4.4 Differentiate between good and poor food choices.
- 0922.4.5 Investigate the relationship between food consumption, weight management, health physical performance and appearance.
- 0922.4.6 Using the food pyramid, plan daily menus for one week.
- 0922.4.7 Plan and complete assigned food labs.
- 0922.4.8 Demonstrate safety, sanitation, self-sufficiency and teamwork in the foods laboratory.
- 0922.4.9 Identify good vs. bad health habits.
- 0922.4.10 Demonstrate good posture when standing, walking and sitting.
- 0922.4.11 Relate the effects of nutrition, rest, and exercise on an individual's health and appearance.

Standard 5: Consumer Education (0922.S.5)

The student will gain knowledge of human economics and environmental resources that will enable them to work toward becoming self-sufficient adults.

Consumer Education Objectives

Students will:

- 0922.5.1 Realize the importance of work in one's daily life.
- 0922.5.2 Define consumer decisions, mass media, advertising, and impulse buying.
- 0922.5.3 Identify factors which influence needs and wants in consumer choices.
- 0922.5.4 Give examples of how peers, mass media and advertising can affect what an individual buys.
- 0922.5.5 Demonstrate skills that ensure consumer rights/responsibilities.
- 0922.5.6 Relate income to spending and recognize factors that influence price, quality and consumer services.
- 0922.5.7 Demonstrate awareness of the computer and its varied uses in consumer awareness.

Standard 6: Textiles and Apparel (0922.S.6)

The student will develop knowledge in selecting and caring for their wardrobe.

Textiles and Apparel Objectives

Students will:

- 0922.6.1 Identify factors affecting a positive personal image.
- 0922.6.2 Explore good personal grooming habits.
- 0922.6.3 Inventory personal wardrobe and analyze future clothing needs.
- 0922.6.4 Explain the difference between fads and fashion.
- 0922.6.5 Identify different fibers and fabrics.
- 0922.6.6 Demonstrate reading hangtags, labels and inspecting garment construction before buying.
- 0922.6.7 Develop routine habits for daily, weekly, and seasonal care of clothing.
- 0922.6.8 Identify and practice simple stain removal.
- 0922.6.9 Review sewing equipment.
- 0922.6.10 Review and practice minor clothing repairs.
- 0922.6.11 Complete a simple sewing project.
- 0922.6.12 Explore a career in the textile and apparel industry.

Standard 7: Housing, Interior and Furnishings (0922.S.7)

The student will explore personal living space.

Housing, Interior and Furnishings Objectives

Students will:

- 0922.7.1 Explain how housing meets the needs of family members.
- 0922.7.2 Evaluate types of housing.
- 0922.7.3 Analyze issues related to housing.
- 0922.7.4 Identify opportunities for volunteerism with regard to housing.
- 0922.7.5 Analyze career paths within the housing, interiors and furnishing industry.
- 0922.7.6 Plan and develop a one-room apartment design/model.

Standard 8: Career Awareness (0922.S.8)

The student will begin investigating their future career choices.

Career Awareness Objectives

Students will:

- 0922.8.1 Identify current and future work trends.
- 0922.8.2 Select and investigate one such work trend.
- 0922.8.3 Inventory future plans and abilities.
- 0922.8.4 Set goals for 1 year, 2 years and 5 years toward a future career.
- 0922.8.5 Research a future career choice and prepare written report.
- 0922.8.6 Recognize personal qualities and characteristics and how they influence occupational choices.
- 0922.8.7 Identify and describe personal traits that lead to success.

Standard 9: Community Involvement (0922.S.9)

The student will learn of community needs and how to be a productive member of the community.

Community Involvement Objectives

Students will:

- 0922.9.1 Survey needs of local community.
- 0922.9.2 In conjunction with class members, review surveys and select a community project.
- 0922.9.3 Using the "Planning Process", identify, plan, implement and evaluate the selected project.

Standard 10: FCCLA (0922.S.10)

The student will investigate the opportunities available through a national student organization.

FCCLA Objectives

Students will:

0922.10.1 Actively participate in the local FCCLA chapter.

0922.10.2 Investigate and complete a "Step One" project.

0922.10.3 Actively use the "Planning Process" to plan and implement local chapter projects.

- 0923.3.2 Distinguish between an individual's basic physical and emotional needs.
- 0923.3.3 Define resources, human resources, nonhuman resources, private resources, public resources and scarce resources.
- 0923.3.4 Describe different ways in which resources can be used.
- 0923.3.5 Describe values, goals and priorities.
- 0923.3.6 Relate the importance of values in making personal decisions.
- 0923.3.7 Identify goals, rank goals, and determine ways in which resources can help one reach these goals.
- 0923.3.8 Define management, management process, schedule, implement, evaluate, time management, habit and procrastinate.
- 0923.3.9 Identify the steps in the management process.
- 0923.3.10 Demonstrate how individuals can manage their time.
- 0923.3.11 Identify income, money management, budget, fixed expenses, flexible expenses, consumer, unit price, quality and warranty.
- 0923.3.12 Demonstrate how to make a budget.
- 0923.3.13 Research and give examples of how an individual can shop wisely.
- 0923.3.14 Determine how personal and shared space and property can be used effectively.

Standard 4: Nutrition and Wellness (0923.S.4)

The student will analyze the effects of nutrition on wellness.

Nutrition and Wellness Objectives

Students will:

- 0923.4.1 Give examples of how food is related to family traditions.
- 0923.4.2 Identify the many roles of food in the body.
- 0923.4.3 Identify those factors that influence eating habits.
- 0923.4.4 Differentiate between good and poor food choices.
- 0923.4.5 Investigate the relationship between food consumption, weight management, health physical performance and appearance.
- 0923.4.6 Using the food pyramid, plan daily menus for one week.
- 0923.4.7 Plan and complete assigned food labs.
- 0923.4.8 Demonstrate safety, sanitation, self-sufficiency and teamwork in the foods laboratory.
- 0923.4.9 Identify good vs. bad health habits.
- 0923.4.10 Demonstrate good posture when standing, walking and sitting.
- 0923.4.11 Relate the effects of nutrition, rest, and exercise on an individual's health and appearance.

Standard 5: Consumer Education (0923.S.5)

The student will gain knowledge of human economics and environmental resources that will enable them to work toward becoming self-sufficient adults.

Consumer Education Objectives

Students will:

- 0923.5.1 Realize the importance of work in one's daily life.
- 0923.5.2 Define consumer decisions, mass media, advertising, and impulse buying.
- 0923.5.3 Identify factors which influence needs and wants in consumer choices.
- 0923.5.4 Give examples of how peers, mass media and advertising can affect what an individual buys.
- 0923.5.5 Demonstrate skills that ensure consumer rights/responsibilities.
- 0923.5.6 Relate income to spending and recognize factors that influence price, quality and consumer services.
- 0923.5.7 Demonstrate awareness of the computer and its varied uses in consumer awareness.

Standard 6: Textiles and Apparel (0923.S.6)

The student will develop knowledge in selecting and caring for their wardrobe.

Textiles and Apparel Objectives

Students will:

- 0923.6.1 Identify factors affecting a positive personal image.
- 0923.6.2 Explore good personal grooming habits.
- 0923.6.3 Inventory personal wardrobe and analyze future clothing needs.
- 0923.6.4 Explain the difference between fads and fashion.
- 0923.6.5 Identify different fibers and fabrics.
- 0923.6.6 Demonstrate reading hangtags, labels and inspecting garment construction before buying.
- 0923.6.7 Develop routine habits for daily, weekly, and seasonal care of clothing.
- 0923.6.8 Identify and practice simple stain removal.
- 0923.6.9 Review sewing equipment.
- 0923.6.10 Review and practice minor clothing repairs.
- 0923.6.11 Complete a simple sewing project.
- 0923.6.12 Explore a career in the textile and apparel industry.

Standard 7: Housing, Interior and Furnishings (0923.S.7)

The student will explore personal living space.

Housing, Interior and Furnishings Objectives

Students will:

- 0923.7.1 Explain how housing meets the needs of family members.
- 0923.7.2 Evaluate types of housing.
- 0923.7.3 Analyze issues related to housing.
- 0923.7.4 Identify opportunities for volunteerism with regard to housing.
- 0923.7.5 Analyze career paths within the housing, interiors and furnishing industry.
- 0923.7.6 Plan and develop a one-room apartment design/model.

Standard 8: Career Awareness (0923.S.8)

The student will begin investigating their future career choices.

Career Awareness Objectives

Students will:

- 0923.8.1 Identify current and future work trends.
- 0923.8.2 Select and investigate one such work trend.
- 0923.8.3 Inventory future plans and abilities.
- 0923.8.4 Set goals for 1 year, 2 years and 5 years toward a future career.
- 0923.8.5 Research a future career choice and prepare written report.
- 0923.8.6 Recognize personal qualities and characteristics and how they influence occupational choices.
- 0923.8.7 Identify and describe personal traits that lead to success.

Standard 9: Community Involvement (0923.S.9)

The student will learn of community needs and how to be a productive member of the community.

Community Involvement Objectives

Students will:

- 0923.9.1 Survey needs of local community.
- 0923.9.2 In conjunction with class members, review surveys and select a community project.
- 0923.9.3 Using the "Planning Process", identify, plan, implement and evaluate the selected project.

Standard 10: FCCLA (0923.S.10)

The student will investigate the opportunities available through a national student organization.

FCCLA Objectives

Students will:

0923.10.1 Actively participate in the local FCCLA chapter.

0923.10.2 Investigate and complete a "Step One" project.

0923.10.3 Actively use the "Planning Process" to plan and implement local chapter projects.

(Base 6) Basic Attitudes, Skills and Experiences WVEIS Code 0924

The student will focus on a variety of life skills and abilities that will assist their development of responsibility and self disciplined behaviors. The student will work through many decision making and problem solving situations in areas of career awareness, life style choices, community involvement, lifetime relationships, consumer skills, enhancing communication, managing one's health, leadership and citizenship.

BASE is designed to meet the unique needs of Family and Consumer Sciences (FACS) middle and junior high programs that have a wide variety of configurations. BASE is a very flexible curriculum that can meet the needs of various age groups and the wide variety of course lengths and school scheduling programs.

Standard 1: Basic Skills (0924.S.1)

The students will reinforce basic skills by completing daily BASE assignments.

Basic Skills Objectives

Students will:

- 0924.1.1 Enhance reading, writing and math skills through assigned FACS curriculum.
- 0924.1.2 Improve communication skills, both oral and written, through involvement in oral presentations and written reports relating to FACS curriculum.
- 0924.1.3 Investigate a variety of Human Services career goals.

Standard 2: Personal Development/Family Relationships (0924.S.2)

The student will work toward a positive self-identity and learn to relate to others.

Personal Development/Family Relationships Objectives

Students will:

- 0924.2.1 Explain how an individual's roles and personal traits influence the development of their self-concept.
- 0924.2.2 Identify factors affecting both positive and negative self-concept.
- 0924.2.3 Describe common development characteristics changes of early adolescents and how these changes influence an individual's self-concept.
- 0924.2.4 Investigate, "Who am I."
- 0924.2.5 Use problem-solving and decision making techniques in coping with assigned adolescent problems.
- 0924.2.6 Distinguish good and poor traits of being a good friend.
- 0924.2.7 Formulate a plan to make yourself a good friend.
- 0924.2.8 Define family, generation, affection, and respect for others.
- 0922.2.9 Demonstrate the different family roles individuals play across their life span.
- 0924.2.10 Identify the relationship between children and parents.
- 0924.2.11 Define your individual family role.
- 0924.2.12 Investigate the importance of caring for children in a responsible way.
- 0924.2.13 Identify relationships between rights and responsibilities of family members.
- 0924.2.14 Identify family crisis situations and community sources of help.
- 0924.2.15 Describe the effect of social problems on the individual, family and society.

Standard 3: Management (0924.S.3)

The student will gain effective management skills.

Management Objectives

Students will:

- 0924.3.1 Explain the difference between an individual's wants and needs.

- 0924.3.2 Distinguish between an individual's basic physical and emotional needs.
- 0924.3.3 Define resources, human resources, nonhuman resources, private resources, public resources and scarce resources.
- 0924.3.4 Describe different ways in which resources can be used.
- 0924.3.5 Describe values, goals and priorities.
- 0924.3.6 Relate the importance of values in making personal decisions.
- 0924.3.7 Identify goals, rank goals, and determine ways in which resources can help one reach these goals.
- 0924.3.8 Define management, management process, schedule, implement, evaluate, time management, habit and procrastinate.
- 0924.3.9 Identify the steps in the management process.
- 0924.3.10 Demonstrate how individuals can manage their time.
- 0924.3.11 Identify income, money management, budget, fixed expenses, flexible expenses, consumer, unit price, quality and warranty.
- 0924.3.12 Demonstrate how to make a budget.
- 0924.3.13 Research and give examples of how an individual can shop wisely.
- 0924.3.14 Determine how personal and shared space and property can be used effectively.

Standard 4: Nutrition and Wellness (0924.S.4)

The student will analyze the effects of nutrition on wellness.

Nutrition and Wellness Objectives

Students will:

- 0924.4.1 Give examples of how food is related to family traditions.
- 0924.4.2 Identify the many roles of food in the body.
- 0924.4.3 Identify those factors that influence eating habits.
- 0924.4.4 Differentiate between good and poor food choices.
- 0924.4.5 Investigate the relationship between food consumption, weight management, health physical performance and appearance.
- 0924.4.6 Using the food pyramid, plan daily menus for one week.
- 0924.4.7 Plan and complete assigned food labs.
- 0924.4.8 Demonstrate safety, sanitation, self-sufficiency and teamwork in the foods laboratory.
- 0924.4.9 Identify good vs. bad health habits.
- 0924.4.10 Demonstrate good posture when standing, walking and sitting.
- 0924.4.11 Relate the effects of nutrition, rest, and exercise on an individual's health and appearance.

Standard 5: Consumer Education (0924.S.5)

The student will gain knowledge of human economics and environmental resources that will enable them to work toward becoming self-sufficient adults.

Consumer Education Objectives

Students will:

- 0924.5.1 Realize the importance of work in one's daily life.
- 0924.5.2 Define consumer decisions, mass media, advertising, and impulse buying.
- 0924.5.3 Identify factors which influence needs and wants in consumer choices.
- 0924.5.4 Give examples of how peers, mass media and advertising can affect what an individual buys.
- 0924.5.5 Demonstrate skills that ensure consumer rights/responsibilities.
- 0924.5.6 Relate income to spending and recognize factors that influence price, quality and consumer services.
- 0924.5.7 Demonstrate awareness of the computer and its varied uses in consumer awareness.

Standard 6: Textiles and Apparel (0924.S.6)

The student will develop knowledge in selecting and caring for their wardrobe.

Textiles and Apparel Objectives

Students will:

- 0924.6.1 Identify factors affecting a positive personal image.
- 0924.6.2 Explore good personal grooming habits.
- 0924.6.3 Inventory personal wardrobe and analyze future clothing needs.
- 0924.6.4 Explain the difference between fads and fashion.
- 0924.6.5 Identify different fibers and fabrics.
- 0924.6.6 Demonstrate reading hangtags, labels and inspecting garment construction before buying.
- 0924.6.7 Develop routine habits for daily, weekly, and seasonal care of clothing.
- 0924.6.8 Identify and practice simple stain removal.
- 0924.6.9 Review sewing equipment.
- 0924.6.10 Review and practice minor clothing repairs.
- 0924.6.11 Complete a simple sewing project.
- 0924.6.12 Explore a career in the textile and apparel industry.

Standard 7: Housing, Interior and Furnishings (0924.S.7)

The student will explore personal living space.

Housing, Interior and Furnishings Objectives

Students will:

- 0924.7.1 Explain how housing meets the needs of family members.
- 0924.7.2 Evaluate types of housing.
- 0924.7.3 Analyze issues related to housing.
- 0924.7.4 Identify opportunities for volunteerism with regard to housing.
- 0924.7.5 Analyze career paths within the housing, interiors and furnishing industry.
- 0924.7.6 Plan and develop a one-room apartment design/model.

Standard 8: Career Awareness (0924.S.8)

The student will begin investigating their future career choices.

Career Awareness Objectives

Students will:

- 0924.8.1 Identify current and future work trends.
- 0924.8.2 Select and investigate one such work trend.
- 0924.8.3 Inventory future plans and abilities.
- 0924.8.4 Set goals for 1 year, 2 years and 5 years toward a future career.
- 0924.8.5 Research a future career choice and prepare written report.
- 0924.8.6 Recognize personal qualities and characteristics and how they influence occupational choices.
- 0924.8.7 Identify and describe personal traits that lead to success.

Standard 9: Community Involvement (0924.S.9)

The student will learn of community needs and how to be a productive member of the community.

Community Involvement Objectives

Students will:

- 0924.9.1 Survey needs of local community.
- 0924.9.2 In conjunction with class members, review surveys and select a community project.
- 0924.9.3 Using the "Planning Process", identify, plan, implement and evaluate the selected project.

Standard 10: FCCLA (0924.S.10)

The student will investigate the opportunities available through a national student organization.

FCCLA Objectives

Students will:

0924.10.1 Actively participate in the local FCCLA chapter.

0924.10.2 Investigate and complete a "Step One" project.

0924.10.3 Actively use the "Planning Process" to plan and implement local chapter projects.

(Base 7) Basic Attitudes, Skills and Experiences WVEIS Code 0925

The student will focus on a variety of life skills and abilities that will assist their development of responsibility and self disciplined behaviors. The student will work through many decision making and problem solving situations in areas of career awareness, life style choices, community involvement, lifetime relationships, consumer skills, enhancing communication, managing one's health, leadership and citizenship.

BASE is designed to meet the unique needs of Family and Consumer Sciences (FACS) middle and junior high programs that have a wide variety of configurations. BASE is a very flexible curriculum that can meet the needs of various age groups and the wide variety of course lengths and school scheduling programs.

Standard 1: Basic Skills (0925.S.1)

The students will reinforce basic skills by completing daily BASE assignments.

Basic Skills Objectives

Students will:

- 0925.1.1 Enhance reading, writing and math skills through assigned FACS curriculum.
- 0925.1.2 Improve communication skills, both oral and written, through involvement in oral presentations and written reports relating to FACS curriculum.
- 0925.1.3 Investigate a variety of Human Services career goals.

Standard 2: Personal Development/Family Relationships (0925.S.2)

The student will work toward a positive self-identity and learn to relate to others.

Personal Development/Family Relationships Objectives

Students will:

- 0925.2.1 Explain how an individual's roles and personal traits influence the development of their self-concept.
- 0925.2.2 Identify factors affecting both positive and negative self-concept.
- 0925.2.3 Describe common development characteristics changes of early adolescents and how these changes influence an individual's self-concept.
- 0925.2.4 Investigate, "Who am I."
- 0925.2.5 Use problem-solving and decision making techniques in coping with assigned adolescent problems.
- 0925.2.6 Distinguish good and poor traits of being a good friend.
- 0925.2.7 Formulate a plan to make yourself a good friend.
- 0925.2.8 Define family, generation, affection, and respect for others.
- 0922.2.9 Demonstrate the different family roles individuals play across their life span.
- 0925.2.10 Identify the relationship between children and parents.
- 0925.2.11 Define your individual family role.
- 0925.2.12 Investigate the importance of caring for children in a responsible way.
- 0925.2.13 Identify relationships between rights and responsibilities of family members.
- 0925.2.14 Identify family crisis situations and community sources of help.
- 0925.2.15 Describe the effect of social problems on the individual, family and society.

Standard 3: Management (0925.S.3)

The student will gain effective management skills.

Management Objectives

Students will:

- 0925.3.1 Explain the difference between an individual's wants and needs.

- 0925.3.2 Distinguish between an individual's basic physical and emotional needs.
- 0925.3.3 Define resources, human resources, nonhuman resources, private resources, public resources and scarce resources.
- 0925.3.4 Describe different ways in which resources can be used.
- 0925.3.5 Describe values, goals and priorities.
- 0925.3.6 Relate the importance of values in making personal decisions.
- 0925.3.7 Identify goals, rank goals, and determine ways in which resources can help one reach these goals.
- 0925.3.8 Define management, management process, schedule, implement, evaluate, time management, habit and procrastinate.
- 0925.3.9 Identify the steps in the management process.
- 0925.3.10 Demonstrate how individuals can manage their time.
- 0925.3.11 Identify income, money management, budget, fixed expenses, flexible expenses, consumer, unit price, quality and warranty.
- 0925.3.12 Demonstrate how to make a budget.
- 0925.3.13 Research and give examples of how an individual can shop wisely.
- 0925.3.14 Determine how personal and shared space and property can be used effectively.

Standard 4: Nutrition and Wellness (0925.S.4)

The student will analyze the effects of nutrition on wellness.

Nutrition and Wellness Objectives

Students will:

- 0925.4.1 Give examples of how food is related to family traditions.
- 0925.4.2 Identify the many roles of food in the body.
- 0925.4.3 Identify those factors that influence eating habits.
- 0925.4.4 Differentiate between good and poor food choices.
- 0925.4.5 Investigate the relationship between food consumption, weight management, health physical performance and appearance.
- 0925.4.6 Using the food pyramid, plan daily menus for one week.
- 0925.4.7 Plan and complete assigned food labs.
- 0925.4.8 Demonstrate safety, sanitation, self-sufficiency and teamwork in the foods laboratory.
- 0925.4.9 Identify good vs. bad health habits.
- 0925.4.10 Demonstrate good posture when standing, walking and sitting.
- 0925.4.11 Relate the effects of nutrition, rest, and exercise on an individual's health and appearance.

Standard 5: Consumer Education (0925.S.5)

The student will gain knowledge of human economics and environmental resources that will enable them to work toward becoming self-sufficient adults.

Consumer Education Objectives

Students will:

- 0925.5.1 Realize the importance of work in one's daily life.
- 0925.5.2 Define consumer decisions, mass media, advertising, and impulse buying.
- 0925.5.3 Identify factors which influence needs and wants in consumer choices.
- 0925.5.4 Give examples of how peers, mass media and advertising can affect what an individual buys.
- 0925.5.5 Demonstrate skills that ensure consumer rights/responsibilities.
- 0925.5.6 Relate income to spending and recognize factors that influence price, quality and consumer services.
- 0925.5.7 Demonstrate awareness of the computer and its varied uses in consumer awareness.

Standard 6: Textiles and Apparel (0925.S.6)

The student will develop knowledge in selecting and caring for their wardrobe.

Textiles and Apparel Objectives

Students will:

- 0925.6.1 Identify factors affecting a positive personal image.
- 0925.6.2 Explore good personal grooming habits.
- 0925.6.3 Inventory personal wardrobe and analyze future clothing needs.
- 0925.6.4 Explain the difference between fads and fashion.
- 0925.6.5 Identify different fibers and fabrics.
- 0925.6.6 Demonstrate reading hangtags, labels and inspecting garment construction before buying.
- 0925.6.7 Develop routine habits for daily, weekly, and seasonal care of clothing.
- 0925.6.8 Identify and practice simple stain removal.
- 0925.6.9 Review sewing equipment.
- 0925.6.10 Review and practice minor clothing repairs.
- 0925.6.11 Complete a simple sewing project.
- 0925.6.12 Explore a career in the textile and apparel industry.

Standard 7: Housing, Interior and Furnishings (0925.S.7)

The student will explore personal living space.

Housing, Interior and Furnishings Objectives

Students will:

- 0925.7.1 Explain how housing meets the needs of family members.
- 0925.7.2 Evaluate types of housing.
- 0925.7.3 Analyze issues related to housing.
- 0925.7.4 Identify opportunities for volunteerism with regard to housing.
- 0925.7.5 Analyze career paths within the housing, interiors and furnishing industry.
- 0925.7.6 Plan and develop a one-room apartment design/model.

Standard 8: Career Awareness (0925.S.8)

The student will begin investigating their future career choices.

Career Awareness Objectives

Students will:

- 0925.8.1 Identify current and future work trends.
- 0925.8.2 Select and investigate one such work trend.
- 0925.8.3 Inventory future plans and abilities.
- 0925.8.4 Set goals for 1 year, 2 years and 5 years toward a future career.
- 0925.8.5 Research a future career choice and prepare written report.
- 0925.8.6 Recognize personal qualities and characteristics and how they influence occupational choices.
- 0925.8.7 Identify and describe personal traits that lead to success.

Standard 9: Community Involvement (0925.S.9)

The student will learn of community needs and how to be a productive member of the community.

Community Involvement Objectives

Students will:

- 0925.9.1 Survey needs of local community.
- 0925.9.2 In conjunction with class members, review surveys and select a community project.
- 0925.9.3 Using the "Planning Process", identify, plan, implement and evaluate the selected project.

Standard 10: FCCLA (0925.S.10)

The student will investigate the opportunities available through a national student organization.

FCCLA Objectives

Students will:

0925.10.1 Actively participate in the local FCCLA chapter.

0925.10.2 Investigate and complete a "Step One" project.

0925.10.3 Actively use the "Planning Process" to plan and implement local chapter projects.

(Base 8) Basic Attitudes, Skills and Experiences WVEIS Code 0926

The student will focus on a variety of life skills and abilities that will assist their development of responsibility and self disciplined behaviors. The student will work through many decision making and problem solving situations in areas of career awareness, life style choices, community involvement, lifetime relationships, consumer skills, enhancing communication, managing one's health, leadership and citizenship.

BASE is designed to meet the unique needs of Family and Consumer Sciences (FACS) middle and junior high programs that have a wide variety of configurations. BASE is a very flexible curriculum that can meet the needs of various age groups and the wide variety of course lengths and school scheduling programs.

Standard 1: Basic Skills (0926.S.1)

The students will reinforce basic skills by completing daily BASE assignments.

Basic Skills Objectives

Students will:

- 0926.1.1 Enhance reading, writing and math skills through assigned FACS curriculum.
- 0926.1.2 Improve communication skills, both oral and written, through involvement in oral presentations and written reports relating to FACS curriculum.
- 0926.1.3 Investigate a variety of Human Services career goals.

Standard 2: Personal Development/Family Relationships (0926.S.2)

The student will work toward a positive self-identity and learn to relate to others.

Personal Development/Family Relationships Objectives

Students will:

- 0926.2.1 Explain how an individual's roles and personal traits influence the development of their self-concept.
- 0926.2.2 Identify factors affecting both positive and negative self-concept.
- 0926.2.3 Describe common development characteristics changes of early adolescents and how these changes influence an individual's self-concept.
- 0926.2.4 Investigate, "Who am I."
- 0926.2.5 Use problem-solving and decision making techniques in coping with assigned adolescent problems.
- 0926.2.6 Distinguish good and poor traits of being a good friend.
- 0926.2.7 Formulate a plan to make yourself a good friend.
- 0926.2.8 Define family, generation, affection, and respect for others.
- 0922.2.9 Demonstrate the different family roles individuals play across their life span.
- 0926.2.10 Identify the relationship between children and parents.
- 0926.2.11 Define your individual family role.
- 0926.2.12 Investigate the importance of caring for children in a responsible way.
- 0926.2.13 Identify relationships between rights and responsibilities of family members.
- 0926.2.14 Identify family crisis situations and community sources of help.
- 0926.2.15 Describe the effect of social problems on the individual, family and society.

Standard 3: Management (0926.S.3)

The student will gain effective management skills.

Management Objectives

Students will:

- 0926.3.1 Explain the difference between an individual's wants and needs.

- 0926.3.2 Distinguish between an individual's basic physical and emotional needs.
- 0926.3.3 Define resources, human resources, nonhuman resources, private resources, public resources and scarce resources.
- 0926.3.4 Describe different ways in which resources can be used.
- 0926.3.5 Describe values, goals and priorities.
- 0926.3.6 Relate the importance of values in making personal decisions.
- 0926.3.7 Identify goals, rank goals, and determine ways in which resources can help one reach these goals.
- 0926.3.8 Define management, management process, schedule, implement, evaluate, time management, habit and procrastinate.
- 0926.3.9 Identify the steps in the management process.
- 0926.3.10 Demonstrate how individuals can manage their time.
- 0926.3.11 Identify income, money management, budget, fixed expenses, flexible expenses, consumer, unit price, quality and warranty.
- 0926.3.12 Demonstrate how to make a budget.
- 0926.3.13 Research and give examples of how an individual can shop wisely.
- 0926.3.14 Determine how personal and shared space and property can be used effectively.

Standard 4: Nutrition and Wellness (0926.S.4)

The student will analyze the effects of nutrition on wellness.

Nutrition and Wellness Objectives

Students will:

- 0926.4.1 Give examples of how food is related to family traditions.
- 0926.4.2 Identify the many roles of food in the body.
- 0926.4.3 Identify those factors that influence eating habits.
- 0926.4.4 Differentiate between good and poor food choices.
- 0926.4.5 Investigate the relationship between food consumption, weight management, health physical performance and appearance.
- 0926.4.6 Using the food pyramid, plan daily menus for one week.
- 0926.4.7 Plan and complete assigned food labs.
- 0926.4.8 Demonstrate safety, sanitation, self-sufficiency and teamwork in the foods laboratory.
- 0926.4.9 Identify good vs. bad health habits.
- 0926.4.10 Demonstrate good posture when standing, walking and sitting.
- 0926.4.11 Relate the effects of nutrition, rest, and exercise on an individual's health and appearance.

Standard 5: Consumer Education (0926.S.5)

The student will gain knowledge of human economics and environmental resources that will enable them to work toward becoming self-sufficient adults.

Consumer Education Objectives

Students will:

- 0926.5.1 Realize the importance of work in one's daily life.
- 0926.5.2 Define consumer decisions, mass media, advertising, and impulse buying.
- 0926.5.3 Identify factors which influence needs and wants in consumer choices.
- 0926.5.4 Give examples of how peers, mass media and advertising can affect what an individual buys.
- 0926.5.5 Demonstrate skills that ensure consumer rights/responsibilities.
- 0926.5.6 Relate income to spending and recognize factors that influence price, quality and consumer services.
- 0926.5.7 Demonstrate awareness of the computer and its varied uses in consumer awareness.

Standard 6: Textiles and Apparel (0926.S.6)

The student will develop knowledge in selecting and caring for their wardrobe.

Textiles and Apparel Objectives

Students will:

- 0926.6.1 Identify factors affecting a positive personal image.
- 0926.6.2 Explore good personal grooming habits.
- 0926.6.3 Inventory personal wardrobe and analyze future clothing needs.
- 0926.6.4 Explain the difference between fads and fashion.
- 0926.6.5 Identify different fibers and fabrics.
- 0926.6.6 Demonstrate reading hangtags, labels and inspecting garment construction before buying.
- 0926.6.7 Develop routine habits for daily, weekly, and seasonal care of clothing.
- 0926.6.8 Identify and practice simple stain removal.
- 0926.6.9 Review sewing equipment.
- 0926.6.10 Review and practice minor clothing repairs.
- 0926.6.11 Complete a simple sewing project.
- 0926.6.12 Explore a career in the textile and apparel industry.

Standard 7: Housing, Interior and Furnishings (0926.S.7)

The student will explore personal living space.

Housing, Interior and Furnishings Objectives

Students will:

- 0926.7.1 Explain how housing meets the needs of family members.
- 0926.7.2 Evaluate types of housing.
- 0926.7.3 Analyze issues related to housing.
- 0926.7.4 Identify opportunities for volunteerism with regard to housing.
- 0926.7.5 Analyze career paths within the housing, interiors and furnishing industry.
- 0926.7.6 Plan and develop a one-room apartment design/model.

Standard 8: Career Awareness (0926.S.8)

The student will begin investigating their future career choices.

Career Awareness Objectives

Students will:

- 0926.8.1 Identify current and future work trends.
- 0926.8.2 Select and investigate one such work trend.
- 0926.8.3 Inventory future plans and abilities.
- 0926.8.4 Set goals for 1 year, 2 years and 5 years toward a future career.
- 0926.8.5 Research a future career choice and prepare written report.
- 0926.8.6 Recognize personal qualities and characteristics and how they influence occupational choices.
- 0926.8.7 Identify and describe personal traits that lead to success.

Standard 9: Community Involvement (0926.S.9)

The student will learn of community needs and how to be a productive member of the community.

Community Involvement Objectives

Students will:

- 0926.9.1 Survey needs of local community.
- 0926.9.2 In conjunction with class members, review surveys and select a community project.
- 0926.9.3 Using the "Planning Process", identify, plan, implement and evaluate the selected project.

Standard 10: FCCLA (0926.S.10)

The student will investigate the opportunities available through a national student organization.

FCCLA Objectives

Students will:

0926.10.1 Actively participate in the local FCCLA chapter.

0926.10.2 Investigate and complete a "Step One" project.

0926.10.3 Actively use the "Planning Process" to plan and implement local chapter projects.

Community and Human Services

WVEIS Code 0927

The student will learn to integrate multiple life roles and responsibilities in family, work and community settings.

Standard 1: Factors Influencing Community Life. (0927.S.1)

The student will examine multiple factors that influence individual, family and community life.

Community Life Objectives

Students will:

- 0927.1.1 Analyze strategies to manage multiple individual, family, career, and community roles and responsibilities.
- 0927.1.2 Examine policies, issues, and trends in the workplace and community that impact individuals and families.
- 0927.1.3 Analyze the impact of social, economic, and technological change on work and family dynamics.
- 0927.1.4 Analyze ways that individual career goals can enhance the family's capacity to meet goals for all family members.
- 0927.1.5 Analyze the potential impact of career path decisions on balancing work and family.
- 0927.1.6 Determine goals for life-long learning and leisure opportunities for all family members.
- 0927.1.7 Determine skills and knowledge needed to develop a life plan for achieving individual, family and career goals.

Standard 2: Community and Workplace Required Settings. (0927.S.2)

The student will demonstrate skills needed in community and workplace settings.

Required Settings Objectives

Students will:

- 0927.2.1 Examine potential career choices to determine the knowledge, skills, and attitudes associated with each.
- 0927.2.2 Demonstrate job seeking and job keeping skills.
- 0927.2.3 Apply communication skills in community and workplace settings.
- 0927.2.4 Demonstrate teamwork skills in community and workplace settings.
- 0927.2.5 Examine strategies to manage the impact of changing technologies in workplace settings.
- 0927.2.6 Demonstrate leadership skills and abilities in the workplace and community.
- 0927.2.7 Examine factors that contribute to maintaining safe and healthy work and community environments.
- 0927.2.8 Demonstrate work ethics and professionalism.

Standard 3: Community and Civic Responsibilities (0927.S.3)

The student will analyze the reciprocal impact of individual and family participation in community activities.

Community and Civic Responsibilities Objectives

Students will:

- 0927.3.1 Examine goals that support individuals and family members in carrying out community and civic responsibilities.
- 0927.3.2 Arrange a plan for individuals and families to select and develop skills in community activities.
- 0927.3.3 Determine skills that provide beneficial services to the community.
- 0927.3.4 Examine community resources and systems of formal and informal support available to individuals and families.
- 0927.3.5 Examine the impact of public policies, agencies, and institutions on the family.

Human Services, Development and Relationships WVEIS Code 0928

This course will promote student growth and development of self and others by providing students with the skills to develop respectful and responsible relationships within their family, career and community.

Standard 1: Growth and Development (0928.S.1)

The student will analyze growth and development of self and others across the life span.

Growth and Development Objectives

Students will:

- 0928.1.1 Analyze human growth and development across the life span/life cycle.
- 0928.1.2 Explain principles of human growth and development.
- 0928.1.3 Examine major historical and current human development theories to interpret human development.
- 0928.1.4 Examine the basic human needs and patterns that influence individual development.
- 0928.1.5 Explain factors that shape human development from preconception through aging.
- 0928.1.6 Determine the impact of social, economic and technological forces.
- 0928.1.7 Explain the effect of gender, ethnicity, and culture on individual development.

Standard 2: Environment and Personal Forces (0928.S.2)

The student will assess environmental and personal forces that impact growth and development.

Environment and Personal Forces Objectives

The students will:

- 0928.2.1 Consider the influence of personality, temperament, and experience on learning and development.
- 0928.2.2 Investigate the interrelationship of physical, emotional, social, and intellectual development across the life span.
- 0928.2.3 Investigate the impact of heredity and family on human growth and development.
- 0928.2.4 Assess the effects of environment and community on human growth and development.
- 0928.2.5 Explain the effect of life events and conditions on individuals' physical and emotional development.
- 0928.2.6 Analyze family development and change across time and cultures.

Standard 3: Interpersonal Relationships (0928.S.3)

The student will analyze influences that affect interpersonal relationships.

Interpersonal Relationships Objectives

The students will:

- 0928.3.1 Review functions and expectations of various types of relationships.
- 0928.3.2 Determine factors contributing to healthy and unhealthy relationships.
- 0928.3.3 Assess processes for handling unhealthy relationships.
- 0928.3.4 Appraise the impact of life events and conditions on relationships.
- 0928.3.5 Assess the effect the various stages of the life span have on relationships.
- 0928.3.6 Examine the effect of personal needs on relationships.
- 0928.3.7 Determine the processes for building and maintaining respectful, responsible relationships.
- 0928.3.8 Explain how self-esteem and self-image affect relationships with others.
- 0928.3.9 Compare physical, emotional, and intellectual responses to stable versus unstable relationships.
- 0928.3.10 Demonstrate leadership skills and abilities reflecting the democratic process in the family, workplace, and community.
- 0928.3.11 Examine the impact of leadership skills, abilities, and styles on collaborative group actions.

Standard 4: Relationships Skills (0928.S.4)

The student will demonstrate skills for forming respectful and responsible relationships.

Relationships Skills Objectives

Students will:

- 0928.4.1 Demonstrate leadership skills to support group members and achieve group goals.
- 0928.4.2 Establish guidelines for leading small groups in the family.
- 0928.4.3 Examine the strengths and limitations of team members.
- 0928.4.4 Determine communication principles and patterns that affect human growth and development.
- 0928.4.5 Examine communication styles and their effects on relationships.
- 0928.4.6 Examine factors that affect messages communicated to others.
- 0928.4.7 Examine types of verbal and nonverbal communication.
- 0928.4.8 Demonstrate active and reflective listening.
- 0928.4.9 Describe attitudes and behaviors that foster effective communication.
- 0928.4.10 Examine communication barriers.
- 0928.4.11 Demonstrate constructive feedback techniques.
- 0928.4.12 Apply ethical principles in communication.

Standard 5: Healthy Lifestyles Behaviors (0928.S.5)

The student will evaluate behaviors that promote healthy lifestyles.

Healthy Lifestyles Behaviors Objectives

Students will:

- 0928.5.1 Examine nurturing practices that support development across the life span.
- 0928.5.2 Assess available support systems that meet human needs.
- 0928.5.3 Determine the impact of empathy on relationships.
- 0928.5.4 Demonstrate awareness of diversity and tolerance and their impact on relationships.
- 0928.5.5 Analyze the consequences of making generalizations about cultural groups.
- 0928.5.6 Investigate causes of conflict.
- 0928.5.7 Demonstrate effective conflict prevention and management techniques.
- 0928.5.8 Determine the role of decision making and problem solving in reducing and managing conflict.
- 0928.5.9 Demonstrate nonviolent strategies to address conflict.
- 0928.5.10 Locate community resources that support conflict prevention and management.
- 0928.5.11 Determine physical, emotional, and intellectual responses to threat.
- 0928.5.12 Examine types of standards for making judgments related to personal and family relationships.
- 0928.5.13 Demonstrate ethical behaviors in family, workplace, and community.
- 0928.5.14 Manage factors contributing to stress.
- 0928.5.15 Determine symptoms of stress on self, relationships, and work productivity.
- 0928.5.16 Evaluate strategies for coping with stress.
- 0928.5.17 Identify situations that require crisis intervention.

Standard 6: Human Services Careers (0928.S.6)

The student will evaluate career options and opportunities in human services.

Human Services Careers Objectives

Students will:

- 0928.6.1 Examine personal ethical standards.
- 0928.6.2 Demonstrate transferable employability skills, in relation to individual, family, community, and career roles.
- 0928.6.3 Analyze technologies and their relationships to managing individual, family, career, and community roles and responsibilities.
- 0928.6.4 Analyze issues related to the workplace and community, and discuss how these may be addressed by individuals and communities.

- 0928.6.5 Determine practices that allow families to maintain economic self-sufficiency.
- 0928.6.6 Research entrepreneurial opportunities related to these careers.

Surviving Today's Experiences and Problems Successfully (STEPS)

WVEIS Code 0929

Through this year long course the student will develop skills to function successfully within their current family and peer groups. By utilizing basic skills and higher order thinking skill the student will learn management problem techniques, to care for children, nutrition/foods, consumer education, person/family relationships, and clothing and textiles.

Standard 1: Basic Academic Skills (0929.S.1)

The student will reinforce basic academic skills that are integrated throughout the FACS curriculum.

Basic Academic Skills Objectives

Students will:

- 0929.1.1 Advance reading, writing and math skills through completion of the STEP curriculum assignments.
- 0929.1.2 Improve communicating skills, both oral and written, through involvement in oral presentations and written reports relating to the STEP curriculum.
- 0929.1.3 Investigate a variety of Human Services careers.

Standard 2: FCCLA (0929.S.2)

The student will develop a fundamental vision of FCCLA (Family, Career, and Community Leaders of America) at the state and national levels, while participating at the local level.

FCCLA Objectives

Students will:

- 0929.2.1 Explore FCCLA state and national projects.
- 0929.2.2 Participate in an FCCLA meetings using basic parliamentary procedure.
- 0929.2.3 Explain and actively participate in an activity using the steps in the FCCLA planning process to plan local projects.

Standard 3: Careers in Management (0929.S.3)

The student will identify careers in management.

Careers in Management Objectives

Students will:

- 0929.3.1 Explore opportunities for careers in management.

Standard 4: Personal Resources (0929.S.4)

The student will plan and evaluate use of personal resources.

Personal Resources Objectives

Students will:

- 0929.4.1 Explore concerns teens have about management.
- 0929.4.2 Analyze the management process.
- 0929.4.3 Assess personal values and goals and explain personal responsibilities for setting and reaching goals.
- 0929.4.4 Determine how resources can be used to reach goals and identify personal resources.
- 0929.4.5 Review organizational procedures which save time and effort.
- 0929.4.6 Demonstrate a plan for use of personal time based on personal goals, values and standards.
- 0929.4.7 Explain reasons management is important in the workplace.

Standard 5: Conservation of Natural Resources (0929.S.5)

The student will identify ways teens can take responsibility for conserving natural resources.

Conservation of Natural Resources Objectives

Students will:

0929.5.1 Identify environmental concerns in the home, the community, the nation and the world.

0929.5.2 Propose a solution to an environmental problem, make a plan and take action.

Standard 6: Child Care and Development Careers (0929.S.6)

The student will identify characteristics of jobs related to childcare and development.

Child Care and Development Careers Objectives

Students will:

0929.6.1 Analyze the role of a babysitter and devise a plan for beginning a babysitting business.

0929.6.2 Describe characteristics of career opportunities related to childcare and development.

Standard 7: Child Care (0929.S.7)

The student will approach problems related to caring for children's play, food, guidance, and safety needs.

Child Care Objectives

Students will:

0929.7.1 Establish goals for meeting children's needs.

0929.7.2 Demonstrate ways teens can help meet the care and safety needs of children.

0929.7.3 Devise ways to care for the needs of infants, toddlers and preschoolers.

0929.7.4 Demonstrate activities and techniques that stimulate children's development.

Standard 8: Careers in Nutrition and Foods

The student will examine career choices related to nutrition and foods.

Careers in Nutrition and Foods Objectives (0929.S.8)

Students will:

0929.8.1 Explore employment opportunities and requirements in nutrition/foods.

Standard 9: Nutrition and Foods (0929.S.9)

The student will exhibit procedures for working in the foods lab in an accurate, safe and sanitary manner and practice etiquette.

Nutrition and Foods Objectives

Students will:

0929.9.1 Determine safe and sanitary ways to prepare, serve, and store food.

0929.9.2 Explain the functions and use of cooking equipment.

0929.9.3 Plan for cooperation in the lab.

0929.9.4 Demonstrate accurate measurement of food preparation ingredients.

0929.9.5 Demonstrate appropriate and courteous table manners.

Standard 10: Nutrition and Wellness (0929.S.10)

The student will determine ways to meet food and nutrition goals and to solve individual nutrition issues.

Nutrition and Wellness Objectives

Students will:

- 0929.10.1 Identify common nutrition/food concerns of teens.
- 0929.10.2 Analyze factors affecting teen food choices and assess personal food habits.
- 0929.10.3 Formulate nutrition goals which lead to wellness, based on current guidelines for meeting nutrition needs.
- 0929.10.4 Evaluate sources of nutrition information.
- 0929.10.5 Examine alternatives for providing weekly food intake which meets wellness goals.

Standard 11: Teen Nutrition Concerns and Issues (0929.S.11)

The student will analyze alternative solutions to teen nutrition issues.

Teen Nutrition Concerns and Issues Objectives

Students will:

- 0929.11.1 Explain consequences of alternatives related to various nutrition issues and make judgments about appropriate courses of action.

Standard 12: Careers in Money Management and Consumer Economics (0929.S.12)

The student will identify career opportunities in money management and consumer economics.

Careers in Money Management and Consumer Economics Objectives

Students will:

- 0929.12.1 Describe career opportunities in money management and consumer economics.

Standard 13: Analyze Strategies (0929.S.13)

The student will analyze strategies used by sellers and plan consumer strategies which maximize resource use.

Analyze Strategies Objectives

Students will:

- 0929.13.1 Determine products and services commonly purchased by teens.
- 0929.13.2 Explore needs, wants and values common to teens and tell how these affect consumer decisions.
- 0929.13.3 Demonstrate strategies used by sellers to increase sales and provide product information.
- 0929.13.4 Exhibit buymanship skills useful in managing resources.
- 0929.13.5 Compare consumer rights with consumer responsibilities, cite ways laws protect consumers and identify other sources of consumer information.
- 0929.13.6 Explain ways ecological needs affect consumer goals and plan ways to promote ecology through purchasing.

Standard 14: Financial Planning (0929.S.14)

The student will determine ways to plan financial resource use.

Financial Planning Objectives

Students will:

- 0929.14.1 Identify teen money management concerns.
- 0929.14.2 Explain how the availability of human, material, and time resources affect consumer decisions.
- 0929.14.3 Weigh the alternatives for obtaining income as a teen.
- 0929.14.4 Identify personal expenditure needs throughout high school.
- 0929.14.5 Make a plan for personal income, expenses and savings.
- 0929.14.6 Given teen money management problems, weigh alternatives and suggest a course of action.

Standard 15: Careers in Personal and Family Relationships. (0929.S.15)

The student will analyze career choices in personal and family relationships.

Careers in Personal and Family Relationships Objectives

Students will:

- 0929.15.1 Research careers related to personal and family relationships.
- 0929.15.2 Analyze the effect of relationship skills on job success.

Standard 16: Relationships Formulation (0929.S.16)

The student will analyze relationship skills which form the basis for all relationships.

Relationships Formulation Objectives

Students will:

- 0929.16.1 Identify personal concerns regarding building and maintaining relationships.
- 0929.16.2 Analyze ways to form a more realistic self-concept and to build self-esteem.
- 0929.16.3 Demonstrate verbal and non-verbal communication that enhances relationships.
- 0929.16.4 Explain skills that are important in developing good relationships with other persons.

Standard 17: Personal Relationships (0929.S.17)

The student will suggest solutions for problems related to friendship and dating.

Personal Relationships Objectives

Students will:

- 0929.17.1 Summarize characteristics which build lasting friendships.
- 0929.17.2 Compare dating and friendship.
- 0929.17.3 Analyze problems related to friendships and dating, suggest solutions and evaluate suggestions.

Standard 18: Family Problems (0929.S.18)

The student will analyze family relationship problems and suggest a course of action.

Family Problems Objectives

Students will:

- 0929.18.1 Identify common family relationship concerns of teens.
- 0929.18.2 Describe ways family forms may differ throughout the family life cycle.
- 0929.18.3 Explain the functions of a family to its members and to society.
- 0929.18.4 Explain factors which affect relationships in families.
- 0929.18.5 Plan ways family members can share and exchange roles within a family.
- 0929.18.6 Given problem situations, suggest solutions and evaluate.

Standard 19: Career Relating to Teen Issues (0929.S.19)

The student will identify career opportunities related to teen issues.

Career Relating to Teen Issues Objectives

Students will:

- 0929.19.1 Investigate job opportunities related to teen issues and steps teens can take to control their career futures.

Standard 20: Teen Issues (0929.S.20)

The student will analyze teen issues and suggest solutions for problems experienced by teens.

Teen Issues Objectives

Students will:

- 0929.20.1 Analyze teen independence/interdependence and explain the meaning of "taking control of

life.”

0929.20.2 Analyze alternatives for coping with teen issues.

0929.20.3 Analyze issues affecting teens to determine nature, symptoms and effects of issues and suggest alternatives for coping with the issues.

0929.20.4 Given examples of problems related to teen issues, suggest a solution and justify the choice.

Standard 21: Careers in Clothing/Textiles (0929.S.21)

The student will identify career options in clothing/textiles.

Careers in Clothing/Textiles Objectives

Students will:

0929.21.1 Determine career opportunities in clothing and textiles.

Standard 22: Clothing and Textiles (0929.S.22)

The student will develop knowledge in selecting and caring for their wardrobe.

Clothing and Textiles Objectives

Students will:

0929.22.1 Explain clothing concerns of teens.

0929.22.2 Identify motivations for clothing selection.

0929.22.3 Examine personal clothing goals.

0929.22.4 Given clothing selection situations, make judgments based on source, quality and fabric.

0929.22.5 Construct a simple project using accepted practice for equipment use and construction techniques.

0929.22.6 Practice procedures for storing and repairing clothing which promote a neat appearance and longer clothing use.

0929.22.7 Given clothing labels, determine the type of cleaning needed.

0929.22.8 Determine laundry procedures and describe ways family members can share laundry responsibilities.

Applied Design-Housing/Interior Design

WVEIS Code 0941

This course will provide students with the skills and practices that are required for the application of design elements and principles in the areas of housing.

Standard 1: Design Elements and Principles (0941.S.1)

The student will pursue the knowledge, skill and practices required for the application of design elements and principles in the areas of housing.

Design Elements and Principles Objectives

Students will:

- 0941.1.1 Determine and apply the elements and principles of design.
- 0941.1.2 Analyze the effects that elements and principles of design have on aesthetics and function.
- 0941.1.3 Predict the psychological impact that the principles and elements have on individuals and families.
- 0941.1.4 Demonstrate knowledge of cultural influences upon design.
- 0941.1.5 Explore the use of current technology to facilitate design.
- 0941.1.6 Use a variety of equipment, tools, supplies, and techniques in the design process.
- 0941.1.7 Demonstrate design skills.
- 0941.1.8 Demonstrate design ideas through visual presentations.

Standard 2: Customer Service/Business Profitability (0941.S.2)

The student will be able to demonstrate "Customer Service/Business Profitability.

Customer Service/Business Profitability Objectives

Students will:

- 0941.2.1 Demonstrate effective communication skills.
- 0941.2.2 Evaluate the components of customer service.
- 0941.2.3 Analyze the merchandising of design products.
- 0941.2.4 Examine responsibilities, liabilities, and legislation related to safety, security, and environmental factors.

Standard 3: Textiles (0941.S.3)

The student will explore the many areas of textiles

Textiles Objectives

Students will:

- 0941.3.1 Identify, compare, and analyze the most common textile fibers.
- 0941.3.2 Predict the effects of textile characteristics on design, construction and use.
- 0941.3.3 Select appropriate procedures for care and maintenance of textile products/apparel.
- 0941.3.4 Examine textile legislation, standards, and labeling in the global economy.
- 0941.3.5 Demonstrate textile design skill.
- 0941.3.6 Evaluate career paths within the textile industry.

Standard 4: Housing/Interior Design (0941.S.4)

The student will examine the many areas of Housing/Interior Design.

Housing/Interior Design Objectives

Students will:

- 0941.4.1 Evaluate career paths within the interior design, housing, and home furnishings industry.
- 0941.4.2 Evaluate the needs, goals, and resources in creating design plans and/or acquiring housing.
- 0941.4.3 Analyze influences on architectural and furniture design and development.

- 0941.4.4 Evaluate the use of housing and interiors furnishings and products to relate to specific design needs.
- 0941.4.5 Demonstrate the use of technology and other skills required for the housing, interiors and furnishings industry.
- 0941.4.6 Analyze major components of a home's structure.
- 0941.4.7 Evaluate exterior and interior materials and products used in construction.

Food Preparation

WVEIS Code 0951

The student will focus on various food preparation and management skills that promotes health and wellness of individuals and families.

Standard 1: Safety, Sanitation & Storage (0951.S.1)

The student will demonstrate safety, sanitation and food storage procedures.

Safety, Sanitation & Storage Objectives

Students will:

- 0951.1.1 Practice acceptable personal hygiene.
- 0951.1.2 Analyze food-borne illnesses.
- 0951.1.3 Identify and use proper sanitation habits and safety/first-aid procedures in food preparation and storage.

Standard 2: Abbreviations and Equivalents (0951.S.2)

The student will identify and interpret food preparation abbreviations and equivalents.

Abbreviations and Equivalents Objectives

Students will:

- 0951.2.1 Identify and correctly use abbreviations found in recipes.
- 0951.2.2 Identify and correctly use math equivalents and symbols common to food preparation.
- 0951.2.3 Determine the correct equivalents to use when manipulating recipe amounts.
- 0951.2.4 List kinds of information a good recipe contain.
- 0951.2.5 Analyze effects of increasing/decreasing a recipes yield.
- 0951.2.6 Examine how high altitude affects the cooking process.

Standard 3: Terms (0951.S.3)

The student will identify food preparation terms.

Terms Objectives

Students will:

- 0951.3.1 Identify and define food preparation terms and cookery techniques terms.
- 0951.3.2 Describe the importance of implementing correct food preparation terms and cookery techniques terms to successful recipe interpretation.
- 0951.3.3 Demonstrate assigned food preparation and techniques skills.

Standard 4: Measuring and Mixing (0951.S.4)

The student will develop correct measuring techniques.

Measuring and Mixing Objectives

Students will:

- 0951.4.1 Identify standard units of measure used in food preparation.
- 0951.4.2 Use correct math common to food preparation when translating recipes.
- 0951.4.3 Identify and demonstrate the correct measuring equipment for both liquid and dry ingredients.
- 0951.4.4 Evaluate the importance of exact measurements of ingredients when cooking and baking.

Standard 5: Equipment (0951.S.5)

The student will identify large and small food preparation equipment.

Equipment Objectives

Students will:

- 0951.5.1 Recognize large and small kitchen equipment.
- 0951.5.2 Demonstrate safe use and care of all kitchen equipment.
- 0951.5.3 Identify, select, use and care for equipment used in the preparation of food.
- 0951.5.4 Improvise for equipment that is not available.
- 0951.5.5 Compare microwave cooking to conventional cooking.
- 0951.5.6 Demonstrate safety precautions and care for microwave oven usage.
- 0951.5.7 Analyze cooking techniques and utensils used for successful microwave cooking.
- 0951.5.8 Identify factors affecting microwave cooking time.

Standard 6: Utensils (0951.S.6)

The student will identify kitchen utensils.

Utensils Objectives

Students will:

- 0951.6.1 Identify small kitchen utensils, their uses and care.
- 0951.6.2 Demonstrate proper use and care of small kitchen utensils in preparation of assigned recipes.

Standard 7: Table Setting and Etiquette (0951.S.7)

The student will practice table setting and etiquette.

Table Setting and Etiquette Objectives

Students will:

- 0951.7.1 Research table etiquette guidelines.
- 0951.7.2 Research table etiquette guidelines for different ethnical groups.
- 0951.7.3 Demonstrate table settings for various types of meals.
- 0951.7.4 Practice good table manners during food preparations labs.

Standard 8: Nutrition (0951.S.8)

The student will analyze good nutrition practices.

Nutrition Objectives

Students will:

- 0951.8.1 Identify factors affecting an individual's nutritional needs.
- 0951.8.2 Relate the role of good nutrition to the health and wellness of individuals and families.
- 0951.8.3 Demonstrate how to conserve nutrients during food preparation.
- 0951.8.4 Develop a one-week menu for a family of four using the food pyramid.
- 0951.8.5 Research diet disorders, (i.e. bulimia, anorexia.)
- 0951.8.6 Analyze special needs diets, (i.e. diabetic, vegetarian, low cholesterol, etc.)

Standard 9: Cooking Labs (0951.S.9)

The student will apply food preparation techniques and skills.

Cooking Labs Objectives

Students will:

- 0951.9.1 Develop appropriate menus, grocery orders and timelines for cooking and/or baking labs.
- 0951.9.2 Prepare and compare six types of cookies.
- 0951.9.3 Describe the functions of ingredients, nutritive value, and methods of preparation.
- 0951.9.4 Evaluate products by appearance and eating quality.
- 0951.9.5 Interpret general information about quick breads and methods of preparation.
- 0951.9.6 Prepare the following quick breads: biscuits, muffins, pancakes, and loaf breads.

- 0951.9.7 Evaluate how ingredients function in different products.
- 0951.9.8 Explain the grading of eggs.
- 0951.9.9 Draw and label the structure of eggs.
- 0951.9.10 Describe the functions of eggs in food preparation.
- 0951.9.11 Prepare fruits and vegetables recipes.
- 0951.9.12 Prepare dairy products and egg recipes.
- 0951.9.13 Prepare pasta and potato products recipes.
- 0951.9.14 Prepare Garde Manger items.
- 0951.9.15 Supervise kitchen staff as a head cook.
- 0951.9.16 Classify and choose spices, herbs, and extracts to enhance the flavors in foods.
- 0951.9.17 Select, prepare, and serve a dish of the students' choice.

Nutrition and Food Science

WVEIS Code 0952

Nutrition courses focus on the value of good nutrition in relationship to wellness. Students use scientific processes to study the field of food science. Laboratory skills and experimental methods are used to measure, record and analyze data that relate to the relationship of food science to other sciences (such as chemistry, microbiology, nutrition and physics).

Standard 1: Nutritional Content

The student will evaluate the nutritional content of food to promote individual and family wellness across the life span.

Nutritional Content Objectives

Students will:

- 0952.1.1 Evaluate the nutritional content of food in relation to the health and wellness needs of individuals and families.
- 0952.1.2 Using technology, analyze personal eating habits and plan ways to choose food to meet nutritional goals.
- 0952.1.3 Identify factors, facts, and fallacies that affect wellness.
- 0952.1.4 Evaluate the use of supplements to meet daily nutritional needs.

Standard 2: Six Basic Nutrients (0952.S.2)

The student will interpret information regarding the six basic nutrients to promote health and wellness.

Six Basic Nutrients Objectives

Students will:

- 0952.2.1 Identify the functions, food sources, and excess/inadequate amounts of the six major nutrients.
- 0952.2.2 Explain the process of food digestion and nutrient absorption.
- 0952.2.3 Examine the properties of each of the six basic nutrients.

Standard 3: Food Preparation Techniques (0952.S.3)

The student will demonstrate planning, selecting, storing, preparing and serving of foods to meet nutritional needs of individuals and families across the life span.

Food Preparation Techniques Objectives

Students will:

- 0952.3.1 Compare food purchasing options according to cost and nutritional quality.
- 0952.3.2 Identify meal planning strategies for different stages of the family life cycle.
- 0952.3.3 Plan, prepare, and store food to achieve nutritional goals.
- 0952.3.4 Explain how to choose and handle food to preserve nutrition, quality, and safety.
- 0952.3.5 Explore techniques of food preservation.

Standard 4: Food Safety (0952.S.4)

The student will demonstrate food safety and sanitation practices for handling food.

Food Safety Objectives

Students will:

- 0952.4.1 Identify potential health problems related to food supply.
- 0952.4.2 Identify sanitary and food handling practices that can help prevent food spoilage.
- 0952.4.3 Describe the properties of the microorganisms that cause food spoilage.

0952.4.4 Describe safety guidelines.

Standard 5: Nutritional Factors (0952.S.5)

The student will analyze the internal and external factors that influence nutritional practices and wellness across the life span.

Nutritional Factors Objectives

Students will:

- 0952.5.1 Examine the nutritional needs and food patterns of various age groups.
- 0952.5.2 Research nutrition and the athlete.
- 0952.5.3 Research specialty diets (vegetarian, diabetic, fad diets, etc.).
- 0952.5.4 Describe how food choices are influenced by available resources and technology.

Standard 6: Product Labels (0952.S.6)

The student will analyze information on product labels.

Product Labels Objectives

Students will:

- 0952.6.1 Compare foods as to nutritional content and serving size.
- 0952.6.2 Examine and interpret food labels.

Standard 7: Food Trends (0952.S.7)

The student will analyze behaviors and food industry trends.

Food Trends Objectives

Students will:

- 0952.7.1 Describe techniques for successful weight control methods.
- 0952.7.2 Analyze effects of eating disorders.
- 0952.7.3 Research solutions to reduce calories, increase fiber, reduce sugar, reduce fat, increase complex carbohydrates, etc.
- 0952.7.4 Identify practical ways to change eating habits.
- 0952.7.5 Evaluate the use of supplements to meet daily nutritional needs.
- 0952.7.6 Analyze the metabolic process.
- 0952.7.7 Examine the issue of diet versus disease prevention (birth defects, cardiovascular, hypertension, etc.)

Standard 8: Food Science Concepts (0952.S.8)

The student will apply the steps in the scientific method to examine basic food science concepts.

Food Science Concepts Objectives

Students will:

- 0952.8.1 Identify scientific equipment used in the food science industry.
- 0952.8.2 Explain the steps in the scientific method.
- 0952.8.3 Write accurate and complete reports of food science experiments.
- 0952.8.4 Identify basic science concepts.
- 0952.8.5 Explore basic energy concepts.
- 0952.8.6 Examine acid and bases.
- 0952.8.7 Explore experimentation in food science.

Standard 9: Food Science Careers (0952.S.9)

The student will research careers in the nutrition and food science areas.

Food Science Careers Objectives

Students will:

- 0952.9.1 Identify entry level and advanced level careers in nutrition and food sciences.
- 0952.9.2 Examine education and training needed for a career in nutrition and food science.
- 0952.9.3 Explore emerging careers in nutrition, food science, and biotechnology.

Applied Design-Fashion Merchandising

WVEIS Code 0961

This course will provide students with the skills and practices that are required for the application of design elements and principles in the areas of fashion.

Standard 1: Design Elements and Principles (0961.S.1)

The student will pursue the knowledge, skill and practices required for the application of design elements and principles in the areas of fashion.

Design Elements and Principles Objectives

Students will:

- 0961.1.1 Determine and apply the elements and principles of design.
- 0961.1.2 Analyze the effects that elements and principles of design have on aesthetics and function.
- 0961.1.3 Predict the psychological impact that the principles and elements have on individuals and families.
- 0961.1.4 Demonstrate knowledge of cultural influences upon design.
- 0961.1.5 Explore the use of current technology to facilitate design.
- 0961.1.6 Use a variety of equipment, tools, supplies, and techniques in the design process.
- 0961.1.7 Demonstrate design skills.
- 0961.1.8 Demonstrate design ideas through visual presentations.

Standard 2: Customer Service/Business Profitability (0961.S.2)

The student will demonstrate customer service and business profitability skills.

Customer Service/Business Profitability Objectives

Students will:

- 0961.2.1 Demonstrate effective communication skills.
- 0961.2.2 Evaluate the components of customer service.
- 0961.2.3 Analyze the merchandising of design products.
- 0961.2.4 Examine responsibilities, liabilities, and legislation related to safety, security, and environmental factors.

Standard 3: Textiles (0961.S.3)

The student will explore the many areas of textiles.

Textiles Objectives

Students will:

- 0961.3.1 Identify, compare, and analyze the most common textile fibers.
- 0961.3.2 Predict the effects of textile characteristics on design, construction and use.
- 0961.3.3 Select appropriate procedures for care and maintenance of textile products/apparel.
- 0961.3.4 Examine textile legislation, standards, and labeling in the global economy.
- 0961.3.5 Demonstrate textile design skill.
- 0961.3.6 Evaluate career paths within the textile industry.

Standard 4: Apparel (0961.S.4)

The student will examine the area of apparel and apply related principles to it.

Apparel Objectives

Students will:

- 0961.4.1 Evaluate factors that influence clothing design and choices.
- 0961.4.2 Judge the role of value, quality, and fit in wardrobe selection.
- 0961.4.3 Evaluate shopping options.

- 0961.4.4 Demonstrate ability to use technology for fashion design.
- 0961.4.5 Demonstrate construction techniques used to produce and repair apparel.
- 0961.4.6 Determine opportunities and preparation requirements for different levels of employment within the apparel industry.

Dental Assistant Biomedical Sciences

WVEIS Code 0741

Within this course, the Dental Assistant Biomedical Sciences student will review proper nutrition as it relates to preventive dentistry. Students will examine basic structures and functions of the human body and their relevance to dental treatment. The course will further focus upon principles of disease transmission and prevention. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Nutrition (0741.S.1)

Students will describe the benefits of proper nutrition.

Nutrition Objectives

Students will:

- 0741.1.1 Discuss the importance of good nutrition.
- 0741.1.2 Explain the overall goal of preventive dentistry in relation to nutrition.
- 0741.1.3 Identify the US Department of Agriculture Food Pyramid.
- 0741.1.4 Label foods that fall within each food group.
- 0741.1.5 Complete a dietary analysis form.

Standard 2: Basic Structures and Functions of the Human Body (0741.S.2)

Students will describe the basic structures and functions of the human body.

Basic Structures and Functions of the Human Body Objectives

Students will:

- 0741.2.1 Name and describe the structures and functions of each system of the human body.
- 0741.2.2 Describe the major body systems and correctly identify each on an unlabeled drawing.
- 0741.2.3 Explain the relevance of an accurate Patient Health History Dental Form and the relation to dental treatment.

Standard 3: Disease Transmission and Prevention (0741.S.3)

Students will describe and apply principles of disease transmission and prevention.

Disease Transmission and Prevention Objectives

Students will:

- 0741.3.1 Define, pronounce and spell terminology as related to microbiology, bacteriology and sterilization.
- 0741.3.2 Examine the conditions necessary for microorganisms to grow.
- 0741.3.3 Recognize the cycle of microorganism transmission and prevention.
- 0741.3.4 Describe the application of "Standard Precautions."
- 0741.3.5 Identify common pathogenic microorganisms.
- 0741.3.6 Identify causes and symptoms of acute inflammatory reaction.
- 0741.3.7 Identify causes, symptoms and prevention of Hepatitis B.
- 0741.3.8 Identify causes, symptoms and prevention of HIV/AIDS.

Standard 4: Provide and Maintain Asepsis Standards (0741.S.4)

Students will describe the Standard Operating Procedures within the dental office.

Asepsis Standards Objectives

Students will:

- 0741.4.1 Define, pronounce and spell terminology as related to asepsis.
- 0741.4.2 Compare the effectiveness of methods used to destroy various bacteria.

- 0741.4.3 Identify the use and purpose of an ultrasonic.
- 0741.4.4 Identify the use and purpose of a steam autoclave.
- 0741.4.5 List the various types and uses of an autoclave.

Standard 5: Infection Control (0741.S.5)

Students will describe infection control policies and procedures applicable to the dental office.

Infection Control Objectives

Students will:

- 0741.5.1 Identify the rationale, regulation, recommendation and training that govern infection control in the dental office.
- 0741.5.2 Describe how pathogens travel from person to person in the dental office.
- 0741.5.3 List primary routes of microbial transmission and the associated dental procedures that affect the dental assistant.
- 0741.5.4 List various disinfectants and their applications as used in dentistry.
- 0741.5.5 Identify and show the proper usage of pre-procedure mouth rinses, high volume evacuation, dental dams and disposable items.

Standard 6: Personal Protective Equipment (0741.S.6)

Students will describe the use and application of Personal Protective Equipment in the dental office.

Personal Protective Equipment Objectives

Students will:

- 0741.6.1 Discuss standards of practice related to personal hygiene, hair, nails, jewelry and cologne.
- 0741.6.2 Demonstrate proper hand washing procedures.
- 0741.6.3 List types and use of protective eye ware.
- 0741.6.4 List types and use of protective gloves.
- 0741.6.5 List types and use of protective mask/shield.
- 0741.6.6 List types and use of protective fluid resistant gown.
- 0741.6.7 List guideline for disposing/laundrying of attire.

Standard 7: Technology (0741.S.7)

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0741.7.1 Research the options and various Computerized Dental Office Programs utilizing the Internet.
- 0741.7.2 Integrate the use of Dental Software Programs.
- 0741.7.3 Integrate the use of software, hardware and the Internet to practice and master standards.
- 0741.7.4 Utilize the Internet as a resource/research tool.

Standard 8: Student Organization (0741.S.8)

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0741.8.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0741.8.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0741.8.3 Apply parliamentary procedure in organizational meetings.
- 0741.8.4 Demonstrate team membership skill, such as cooperation and leadership.

0741.8.5 Take part in local, state and national dental health care and education projects.

Dental Assistant Clinical Practices

WVEIS Code 0742

The student within the Dental Assistant Clinical Practices course will focus on knowledge and skills required for the Dental Assistant to function within the areas of radiography and emergency medical care. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Imaging System (0742.S.1)

Students will describe the benefits of imaging systems in the dental office.

Imaging System Objectives

Students will:

- 0742.1.1 Identify imaging systems used for dental purposes.
- 0742.1.2 Compare the advantages to the patient and staff when using imaging systems.

Standard 2: Radiography Safety (0742.S.2)

Students will describe principles and procedures to minimize radiography risks to the patient and all dental personnel.

Safety and Precautions Objectives

Students will:

- 0742.2.1 Discuss the manufacturer's responsibilities in relationship to radiography safety.
- 0742.2.2 Discuss the federal government safety specifications for all manufacturers of dental x-ray units.
- 0742.2.3 Research the dentist's responsibilities in radiography safety to the patient and dental team.
- 0742.2.4 Identify safety responsibilities of the dental assistant.
- 0742.2.5 Identify the patient's responsibilities in radiography safety.

Standard 3: Dental X-Ray Film (0742.S.3)

Students will describe the types and usages of dental x-ray films.

Dental X-Ray Film Objectives

Students will:

- 0742.3.1 Identify the composition of dental x-ray film.
- 0742.3.2 Discuss the film speed.
- 0742.3.3 Discuss and identify film sizes.
- 0742.3.4 Identify the internal and external parts of dental film packets.
- 0742.3.5 Differentiate between intraoral and extraoral radiographs.
- 0742.3.6 Discuss proper storage for dental film.

Standard 4: Producing Quality Radiographs (0742.S.4)

Students will describe radiographic procedures.

Producing Quality Radiographs Objectives

Students will:

- 0742.4.1 Discuss safety procedures before, during and after a patient is exposed to radiation.
- 0742.4.2 Identify Bisecting Technique.
- 0742.4.3 Identify Paralleling Technique.
- 0742.4.4 List types of film exposures used most commonly in the dental office.
- 0742.4.5 Identify and list common radiographic errors on an unlabeled diagram.
- 0742.4.6 Assemble XCP (X-Tension Cone Paralleling) instrument for a periapical and bitewing x-ray.
- 0742.4.7 Demonstrate a mock x-ray exposure to a mock patient.

Standard 5: Processing Quality Radiographs (0742.S.5)

Students will describe the procedure of developing the dental x-ray.

Quality Radiographs Objectives

Students will:

- 0742.5.1 Discuss the set-up and proper procedures of the darkroom.
- 0742.5.2 List and explain the procedures for processing x-rays manually.
- 0742.5.3 List and discuss the procedures for processing x-rays with an automatic processor.
- 0742.5.4 Identify the composition of the processing solutions (Fixer and Developer).

Standard 6: Mounting Radiographs (0742.S.6)

Students will properly mount x-rays after exposure.

Mounting Radiographs Objectives

Students will:

- 0742.6.1 Match facial landmarks associated with roentgenology to the correct definitions.
- 0742.6.2 Explain the film requirements for a full mouth series of radiographs for adults and children.
- 0742.6.3 Differentiate between periapical and bitewing radiographs.
- 0742.6.4 Describe the correct steps to follow during radiographic exposure.
- 0742.6.5 Discuss methods and materials used in developing radiographs.
- 0742.6.6 Develop, mount and file radiographs.
- 0742.6.7 Evaluate dental radiographs for diagnostic quality.

Standard 7: Emergency Medical Care (0742.S.7)

Students will identify and perform basic emergency medical care.

Emergency Medical Care Objectives

Students will:

- 0742.7.1 Distinguish the four priorities of first aid.
- 0742.7.2 Explain first aid measures, including symptoms for sudden illness and injury.
- 0742.7.3 Demonstrate the four methods for the control of bleeding in proper order.
- 0742.7.4 State the role of the assistant in the administration of oxygen.
- 0742.7.5 Secure certification for adult, child and infant CPR and choking from the American Red Cross or American Heart Association.

Standard 8: Vital Signs (0741.S.8)

Students will measure and record vital signs.

Vital Signs Objectives

Students will:

- 0741.8.1 Recognize general characteristics of internal body temperature.
- 0741.8.2 Identify general characteristics of the pulse and pulse locations.
- 0741.8.3 Describe general characteristics of respiration.
- 0741.8.4 Explain general characteristics of blood pressure, defining systolic and diastolic pressure.
- 0741.8.5 Identify the instruments used to measure vital signs.
- 0741.8.6 Measure, record and interpret vital signs.

Standard 9: Technology (0742.S.9)

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0742.9.1 Research the options and various Computerized Dental Office Programs utilizing the Internet.
- 0742.9.2 Integrate the use of Dental Software Programs.
- 0742.9.3 Integrate the use of software, hardware and the Internet to practice and master standards.
- 0742.9.4 Utilize the Internet as a resource/research tool.

Standard 10: Student Organization (0742.S.10)

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0742.10.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0742.10.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0742.10.3 Apply parliamentary procedure in organizational meetings.
- 0742.10.4 Demonstrate team membership skill, such as cooperation and leadership.
- 0742.10.5 Take part in local, state and national dental health care and education projects.

Dental Assistant Clinical Sciences

WVEIS Code 0743

Within the course, Dental Assistant Clinical Practice instruction will focus upon the internal functions of the dental office as well as the pertinent legal and ethical responsibilities. Current technology will be utilized to master course standards. Students are provided with the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Opening of the Dental Office (0743.S.1)

Students will describe the daily routine of opening the dental office.

Opening of the Dental Office Objectives

Students will:

- 0743.1.1 Explain tasks that are performed by the dental assistant each morning prior to patients' arrival.
- 0743.1.2 Identify dental machinery and master switches that require priming.

Standard 2: Secretarial Procedures (0743.S.2)

Students will demonstrate basic secretarial procedures.

Secretarial Procedures Objectives

Students will:

- 0743.2.1 Describe types of filing systems used in the dental office.
- 0743.2.2 List the requirements for appointment book entries and schedule appointments.
- 0743.2.3 Demonstrate appropriate handling of incoming mail.
- 0743.2.4 Explain the importance of a properly completed form.
- 0743.2.5 Complete a registration and health history record.

Standard 3: Accounting Procedures (0743.S.3)

Students will perform basic accounting procedures.

Accounting Procedures Objectives

Students will:

- 0743.3.1 Discuss accounting systems used in a dental office.
- 0743.3.2 Demonstrate accounting procedures by completing a ledger card, writing receipts and balancing a daily journal page.
- 0743.3.3 Explain the purpose of a petty cash fund and describe the handling of petty cash.
- 0743.3.4 Prepare a bank deposit.
- 0743.3.5 Discuss methods of maintaining a checking account and writing a check.
- 0743.3.6 Describe basic information found on a claim form.
- 0743.3.7 Describe the procedures for handling insurance claims.

Standard 4: General Dental Assistant (0743.S.4)

Students will identify basic concepts of chairside dental assisting.

General Dental Assistant Objectives

Students will:

- 0743.4.1 Describe the necessary steps to prepare a patient for treatment.
- 0743.4.2 Explain the necessary steps to seat the patient for treatment.
- 0743.4.3 Describe the position of the operator and the assistant at the chairside.
- 0743.4.4 Describe the necessary steps to dismiss the patient after treatment is concluded.
- 0743.4.5 Identify possible special needs that might arise during patient interaction.
- 0743.4.7 Define and demonstrate how to maintain the oral cavity and the equipment utilized in

treatment of the oral cavity.

Standard 5: Fundamentals of Chairside Assisting (0743.S.5)

Students will select appropriate materials and instrument associated with various operative procedures.

Chairside Assisting Objectives

Students will:

- 0743.5.1 Identify types, characteristics and uses of hand cutting instruments.
- 0743.5.2 Identify classifications of handpieces, component parts and their uses.
- 0743.5.3 Identify types, characteristics and purposes of dental burs.
- 0743.5.4 List instrument and supplies for various operative procedures.
- 0743.5.5 Describe types of bases and liners and their primary and secondary use.
- 0743.5.6 Prepare, measure and mix various operative bases and liners.
- 0743.5.7 Describe amalgam composition and explain the safety principles of mercury.
- 0743.5.8 Demonstrate proper technique for mixing and handling amalgam.
- 0743.5.9 Describe the composite composition and explain the safe use of a high intensity light.
- 0743.5.10 Explain the steps for various operative procedures.
- 0743.5.11 Position patient, dentist and assistant for four-handed operative dentistry.
- 0743.5.12 Interpret various instrument grasps to exchange and retrieve instruments.
- 0743.5.13 Demonstrate proper use of evacuator, water and air during dental procedures.

Standard 6: Dental Laboratory Materials (0743.S.6)

Students will manipulate dental materials used in various dental lab procedures.

Dental Laboratory Materials Objectives

Students will:

- 0743.6.1 Discuss the physical and chemical properties of alginate impression materials.
- 0743.6.2 Prepare alginate mixture.
- 0743.6.3 Load trays with alginate mixture.
- 0743.6.4 Discuss properties of gypsum materials and their uses.

Standard 7: Legal, Ethical, Jurisprudence and Risk Management (0743.S.7)

Students will describe aspects of legal and ethical issues in the dental office environment.

Legal, Ethical, Jurisprudence and Risk Management Objectives

Students will:

- 0743.7.1 Define and compare ethics, jurisprudence and risk management.
- 0743.7.2 Discuss the importance of professional and personal ethics in the workplace.
- 0743.7.3 Describe how the duties of the dental auxiliaries are governed under state law.
- 0743.7.4 Describe the assistant's role in risk management.
- 0743.7.5 Discuss the need to protect the patient's privacy.

Standard 8: Technology (0743.S.8)

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0743.8.1 Research the options and various Computerized Dental Office Programs utilizing the Internet.
- 0743.8.2 Integrate the use of Dental Software Programs.
- 0743.8.3 Describe ways in which computers are used in the dental office.
- 0743.8.4 Explain why ergonomics are important at a computer workstation.
- 0743.8.5 Discuss on line supply ordering/inventory systems.

- 0743.8.6 Integrate the use of software, hardware and the Internet to practice and master standards identified in the course.
- 0743.8.7 Utilize the Internet as a resource/research tool.

Standard 9: Student Organization (0743.S.9)

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0743.9.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0743.9.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0743.9.3 Apply parliamentary procedure in organizational meetings.
- 0743.9.4 Demonstrate team membership skill, such as cooperation and leadership.
- 0743.9.5 Take part in local, state and national dental health care and education projects.

Dental Assistant General Studies

WVEIS Code 0744

The student within the Dental Assistant General Studies course will explore the career of Dental Assisting along with opportunities for higher education. After a review of professional organizations associated with this career area, content will focus on basic knowledge and skills needed as the Dental Assistant interacts with clients and dental team members. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Careers in Dental Assisting (0744.S.1)

Students will describe various opportunities for a career in Dental Assisting.

Careers in Dental Assisting Objectives

Students will:

- 0744.1.1 Describe the primary roles and responsibilities of a dental assistant.
- 0744.1.2 Explain the relevant safety practices and procedures for dental assisting.
- 0744.1.3 Discuss the various dental specialty areas that employ dental assistants.
- 0744.1.4 Discuss educational and career benefits available for dental assistants.
- 0744.1.5 Identify the importance of ethical practices in the dental office environment.
- 0744.1.6 Compare the philosophy of dental care in the past and present.
- 0744.1.7 Explore and research the various career areas of dental assistants such as sales, insurance, laboratory, equipment maintenance, etc.

Standard 2: Higher Education: Dental Hygienist/Dentistry (0744.S.2)

Students will research higher education available within the dental profession.

Higher Education: Dental Hygienist/Dentistry Objectives

Students will:

- 0744.2.1 Identify and differentiate the specialist areas of dentistry.
- 0744.2.2 Research the qualifications for becoming a dentist.
- 0744.2.3 Explain the role and responsibility of a dental hygienist.
- 0744.2.4 Research the qualifications for becoming a dental hygienist.

Standard 3: Associations that Govern the Dental Practice/Profession (0744.S.3)

Students will discuss the associations that govern the dental practices.

Associations that Govern the Dental Practice/Profession Objectives

Students will:

- 0744.3.1 Define American Dental Association.
- 0744.3.2 Define American Dental Assistants Association.
- 0744.3.3 Define Centers for Disease Control and Prevention (CDC) and their role in dentistry.
- 0744.3.4 Define Environmental Protection Agency (EPA) and their role in dentistry.
- 0744.3.5 Define Food and Drug Administration (FDA) and their role in dentistry.
- 0744.3.6 Define Occupational Safety and Health Administration (OSHA) and their role in dentistry.
- 0744.3.7 Define and explain the MSDS.

Standard 4: Communication (0744.S.4)

Students will describe professional written and verbal communication skills.

Communication Objectives

Students will:

- 0744.4.1 Recognize nonverbal communication signals.
- 0744.4.2 Identify the difference between skillful listening and hearing techniques.
- 0744.4.3 Explain how courtesy, tact, poise, discretion and integrity are utilized in communication.
- 0744.4.4 Discuss the importance of proper telephone skills.
- 0744.4.5 Demonstrate correct telephone manner and technique.
- 0744.4.6 Use professional nomenclature.
- 0744.4.7 Identify the Do's and Don'ts of the interview process.
- 0744.4.8 Role play shaking hands.
- 0744.4.9 Demonstrate proper eye contact when speaking and when being spoken to.
- 0744.4.10 Introduce yourself and others in mock situations.

Standard 5: Psychology in the Dental Office (0744.S.5)

Students will identify normal behavior, pain, fear, anxiety and stress of the dental patient.

Psychology in the Dental Office Objectives

Students will:

- 0744.5.1 Describe how mild dental fears can affect treatment.
- 0744.5.2 List ways in which loss of teeth is threatening to the patient.
- 0744.5.3 Identify motivational factors which affect patient behavior.
- 0744.5.4 Identify instructions that are given to a patient.
- 0744.5.5 Describe the purpose of having a child's first visit pleasant, before experiencing dental discomfort.
- 0744.5.6 Describe behavior traits of dental patients.
- 0744.5.7 Identify methods of dealing with fears and anxieties of patients.
- 0744.5.8 Define, spell and pronounce terms associated with psychology.

Standard 6: Factors That Influence the Health and Appearance of the Dental Assistant (0744.S.6)

Students will identify factors that influence the health and appearance of the dental assistant.

Factors That Influence the Health and Appearance of the Dental Assistant Objectives

Students will:

- 0744.6.1 Explain the importance of good physical well being for employment.
- 0744.6.2 Discuss the importance of good nutrition.
- 0744.6.3 Explain how the dental assistant is judged by appearance.
- 0744.6.4 Discuss how personal issues should not be discussed at place of employment.
- 0744.6.5 Describe the reason proper grammar is a requirement when communicating with patients and dental professionals.

Standard 7: Dental Terminology (0744.S.7)

Students will pronounce, spell and understand dental terminology used as a dental professional.

Dental Terminology Objectives

Students will:

- 0744.7.1 Pronounce, spell and define prefixes and suffixes associated with dentistry.
- 0744.7.2 Pronounce, spell and define root words associated with dentistry.
- 0744.7.3 Define, pronounce and spell combined elements of dental terminology.

Standard 8: Preventive Dentistry (0744.S.8)

Students will describe causes, symptoms and treatment for various conditions of the oral cavity related to oral hygiene.

Preventive Dentistry Objectives

Students will:

- 0744.8.1 Describe various conditions in the oral cavity that indicate poor oral hygiene.
- 0744.8.2 Describe proper oral hygiene.
- 0744.8.3 List and describe the properties of each type of fluoride agent and explain its use.
- 0744.8.4 Describe the process of applying a topical fluoride agent.
- 0744.8.5 Identify the purpose of using a pit and fissure sealant and describe the application process.
- 0744.8.6 Identify types of toothbrushes and demonstrate brushing techniques.
- 0744.8.7 Identify types of dental floss and demonstrate flossing techniques.
- 0744.8.8 Demonstrate Oral Hygiene Instructions (OHI).

Standard 9: Technology (0744.S.9)

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0744.9.1 Research the options and various Computerized Dental Office Programs utilizing the Internet.
- 0744.9.2 Integrate the use of Dental Software Programs.
- 0744.9.3 Integrate the use of software, hardware and the Internet to practice and master standards.
- 0744.9.4 Utilize the Internet as a resource/research tool.

Standard 10: Student Organization (0744.S.10)

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0744.10.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0744.10.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0744.10.3 Apply parliamentary procedure in organizational meetings.
- 0744.10.4 Demonstrate team membership skill, such as cooperation and leadership.
- 0744.10.5 Take part in local, state and national dental health care and education projects.

Dental Assistant Clinical Mentoring

WVEIS Code 0745

The student within the Dental Assistant Clinical Mentoring course will participate in a school and community partnership that allows students to participate in practical "hands-on" training under the supervision of a career related professional. The partnership will take place in a clinical facility, which shares insight, knowledge and skills instruction. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO). This course is equivalent to 2 units of credit.

Standard 1: Opening and Closing of Dental Office (0745.S.1)

Students will participate in the opening and closing of a dental office.

Opening and Closing of Dental Office Objectives

Students will:

- 0745.1.1 Arrive early to turn on master switch for computers.
- 0745.1.2 Turn on/off autoclave.
- 0745.1.3 Turn on/off dry heat sterilizer.
- 0745.1.4 Check all operatories for stock.
- 0745.1.5 Prepare all operatories for daily procedures.
- 0745.1.6 Spray and wipe chairs.
- 0745.1.7 Complete the cleaning and sterilization of instruments left from the previous day.
- 0745.1.8 Retrieve patients' charts for current day.

Standard 2: Receptionist Area (0745.S.2)

Students will describe procedures common to the receptionist area.

Receptionist Area Objectives

Students will:

- 0745.2.1 Prepare reception area.
- 0745.2.2 Sort mail.
- 0745.2.3 Check voice mail.
- 0745.2.4 Prepare daily schedule.
- 0745.2.5 Answer incoming calls.
- 0745.2.6 Schedule patients.
- 0745.2.7 Check out patient after treatment.

Standard 3: Administrative Area (0745.S.3)

Students will describe procedures common to the administrative area.

Administrative Area Objectives

Students will:

- 0745.3.1 Generate computer reports.
- 0745.3.2 Register patients.
- 0745.3.3 Record procedure and charges.
- 0745.3.4 Record payment.
- 0745.3.5 Assemble insurance superbill.
- 0745.3.6 Process a dental insurance claim.
- 0745.3.7 Complete a bank deposit slip.
- 0745.3.8 Reconcile receipts.
- 0745.3.9 Make bank deposits.
- 0745.3.10 Balance day sheet.
- 0745.3.11 Prepare a report of accounts receivable.
- 0745.3.12 Prepare a report of accounts payable.

Standard 4: Chairside Dental Assisting (0745.S.4)

Students will assist the dentist with the following procedures to complete competency skills.

Chairside Dental Assisting Objectives

Students will:

- 0745.4.1 Measure and record vital signs.
- 0745.4.2 Don and dispose of clinical attire.
- 0745.4.3 Don personal protective equipment within operatory prior to patient's treatment.
- 0745.4.4 Seat patient.
- 0745.4.5 Review patient's health history.
- 0745.4.6 Expose intraoral and extraoral x-ray.
- 0745.4.7 Develop intraoral and extraoral x-ray.
- 0745.4.8 Mount bitewings and periapicals.
- 0745.4.9 Chart patient's dental record.
- 0745.4.10 Prepare and hand local anesthesia to dentist.
- 0745.4.11 Transfer instruments during treatment using four-handed dentistry.
- 0745.4.12 Evacuate and rinse patient's mouth during treatment.
- 0745.4.13 Prepare dental liners and cement.
- 0745.4.14 Prepare tofflemire retainer.
- 0745.4.15 Prepare materials for anterior restoration.
- 0745.4.16 Prepare materials for posterior restoration.
- 0745.4.17 Prepare patient for dismissal.
- 0745.4.18 Using protocol, clean operatory after patient's treatment.

Standard 5: Dental Specialty Procedures (0745.S.5)

Students will assist with specialty procedures as they relate to general dentistry.

Dental Specialty Procedures Objectives

Students will:

- 0745.5.1 Assist with initial exams and preventive techniques in Pediatric Dentistry.
- 0745.5.2 Assist with pulp treatment and protective covers.
- 0745.5.3 Assist with space maintainers.
- 0745.5.4 Assist with endodontic exam.
- 0745.5.5 Assist with root canal therapy.
- 0745.5.6 Assist with prosthodontic impressions.
- 0745.5.7 Assist with try-in and delivery appointments.
- 0745.5.8 Assist with fixed crowns.
- 0745.5.9 Assist with orthodontic preliminary examination.
- 0745.5.10 Assist with the placement of orthodontic bands.
- 0745.5.11 Assist with cementation of brackets.
- 0745.5.12 Assist with arch wire and ligature placement.
- 0745.5.13 Assist with multiple extractions and suture removal.
- 0745.5.14 Assist with minor tissue surgery.
- 0745.5.15 Assist with periodontal exam and prophylaxis.
- 0745.5.16 Assist with gingivectomy and removal of periodontal packing.

Standard 6: Hygienist Assistant (0745.S.6)

Students will assist the hygienist during patient treatment.

Hygienist Assistant Objectives

Students will:

- 0745.6.1 Prepare tray set up for preliminary examination.
- 0745.6.2 Assist with dental prophylaxis.
- 0745.6.3 Prepare fluoride trays.
- 0745.6.4 Assist with topical fluoride application.
- 0745.6.5 Assist with sealant application, using four-handed dentistry.
- 0745.6.6 Demonstrate brushing and flossing technique instructions.
- 0745.6.7 Participate in patient nutrition and diet counseling.

Standard 7: Central Sterilization Area (0745.S.7)

Students will perform procedures utilized in the central sterilization area.

Central Sterilization Area Objectives

Students will:

- 0745.7.1 Operate ultrasonic cleaner.
- 0745.7.2 Operate autoclave.
- 0745.7.3 Operate dry heat sterilizer.
- 0745.7.4 Prepare soiled instruments for sterilization.
- 0745.7.5 Place contaminated instruments in autoclave bags.
- 0745.7.6 Apply OSHA standards while working in area.
- 0745.7.7 Don and review PPE.
- 0745.7.8 Prepare treatment trays with instruments and burs.
- 0745.7.9 Prepare darkroom.
- 0745.7.10 Complete a MSDS.

Standard 8: Laboratory Area (0745.S.8)

Students will perform procedures required in the laboratory area.

Laboratory Area Objectives

Students will:

- 0745.8.1 Examine alginate trays on patients for proper fit.
- 0745.8.2 Prepare, mix and place maxillary and mandibular alginate impression.
- 0745.8.3 Mix and pour gypsum material into prepared alginate impressions.
- 0745.8.4 Trim maxillary and mandibular models according to specifications.
- 0745.8.5 Articulate models.
- 0745.8.6 Prepare bleaching trays.
- 0745.8.7 Prepare laboratory case for shipping.

Standard 9: Supply Ordering (0745.S.9)

Students will assist with the ordering of supplies and equipment.

Supply Ordering Objectives

Students will:

- 0745.9.1 Assist with ordering supplies and equipment using a catalog.
- 0745.9.2 Assist with order equipment using the Internet.

Standard 10: Technology (0745.S.10)

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0745.10.1 Research the options and various Computerized Dental Office Programs utilizing the Internet.

- 0745.10.2 Integrate the use of Dental Software Programs.
- 0745.10.3 Integrate the use of software, hardware and the Internet to practice and master standards.
- 0745.10.4 Utilize the Internet as a resource/research tool.

Standard 11: Student Organization (0745.S.11)

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0745.11.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0745.11.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0745.11.3 Apply parliamentary procedure in organizational meetings.
- 0745.11.4 Demonstrate team membership skill, such as cooperation and leadership.
- 0745.11.5 Take part in local, state and national dental health care and education projects.

Dental Science

WVEIS Code 0746

Within this course, the Dental Science student will focus upon general dental anatomy and physiology along with corresponding pathology. During the review of pathology, students will examine the management of pain and anxiety in the dental client and related pharmacological agents used in the dental office. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Embryology and Histology (0746.S.1)

Students will describe the development of the human face during phases of pregnancy.

Embryology and Histology Objectives

Students will:

- 0746.1.1 Identify the terms and times of the three prenatal phases of pregnancy.
- 0746.1.2 Describe the development of the human face and changes during the zygote and embryo phases.
- 0746.1.3 Describe the life cycle of a tooth and identify the stages of development.

Standard 2: Tooth Morphology (0746.S.2)

Students will describe deciduous and permanent teeth.

Tooth Morphology Objectives

Students will:

- 0746.2.1 Identify the dental arches and quadrants using correct terminology.
- 0746.2.2 List the primary and permanent teeth by name and location.
- 0746.2.3 Describe each deciduous and permanent tooth according to location, function and position.
- 0746.2.4 Locate and label the permanent teeth and deciduous teeth on an unlabeled drawing.

Standard 3: Bones in the Head (0746.S.3)

Students will identify the bones in the head.

Bones in the Head Objectives

Students will;

- 0746.3.1 List and identify the bones of the cranium.
- 0746.3.2 Locate each landmark on an unlabeled drawing.
- 0746.3.3 List and identify the bones of the face.
- 0746.3.4 Locate each landmark on an unlabeled drawing.
- 0746.3.5 List and identify the parts and functions of the temporomandibular joint.

Standard 4: Muscles of the Head and Neck (0746.S.4)

Students will identify the muscles of the head and neck and their functions.

Muscles of the Head and Neck Objectives

Students will:

- 0746.4.1 Describe the muscles of mastication.
- 0746.4.2 Explain the muscles of facial expression.
- 0746.4.3 Describe the muscles of the tongue and their function.
- 0746.4.4 Describe the muscles of the floor of the mouth and their function.
- 0746.4.5 Identify the muscles of the soft palate and their function.
- 0746.4.6 Describe the muscles of the neck and their functions.
- 0746.4.7 Locate and label muscles of the head and neck on an unlabeled drawing.

Standard 5: Nerves of the Head (0746.S.5)

Students will describe the nerves of the head.

Nerves of the Head Objectives

Students will:

- 0746.5.1 Identify and describe the functions of the cranial nerves that innervate the face and oral cavity.
- 0746.5.2 Identify and describe the nerves of the maxillary branch.
- 0746.5.3 Identify and describe the nerves of the mandibular branch.
- 0746.5.4 Locate and label nerves of the head and neck on an unlabeled drawing.

Standard 6: Circulation of the Head and Neck (0746.S.6)

Students will identify the arteries and veins of the face, neck and oral cavity.

Circulation of the Head and Neck Objectives

Students will:

- 0746.6.1 Identify and describe the functions of the arteries of the face, neck and oral cavity.
- 0746.6.2 Identify and describe the functions of the veins of the face.
- 0746.6.3 Locate and label the arteries of the head, neck and oral cavity on an unlabeled drawing.
- 0746.6.4 Locate and label the veins of the head, neck and oral cavity on an unlabeled drawing.

Standard 7: Oral Anatomy (0746.S.7)

Students will identify structures and landmarks of the oral cavity and interpret various charting techniques.

Oral Anatomy Objectives

Students will:

- 0746.7.1 Identify landmarks of the oral cavity and describe their functions.
- 0746.7.2 Label a drawing of all landmarks of the oral cavity.
- 0746.7.3 Describe and identify the parts, tissues and functions of each tooth.
- 0746.7.4 Identify and describe the functions of the supporting structures of the tooth.
- 0746.7.5 Name the deciduous and permanent teeth and list the approximate age of eruption.
- 0746.7.6 Identify and describe the surfaces of each tooth and corresponding locations.
- 0746.7.7 Describe the abbreviation used for the surfaces of each tooth.
- 0746.7.8 Label deciduous and permanent teeth using the universal numbering system.

Standard 8: Landmarks of the Oral Cavity (0746.S.8)

Students will identify the landmarks of the oral cavity.

Landmarks of the Oral Cavity Objectives

Students will;

- 0746.8.1 List and identify the landmarks of the oral cavity and their functions.
- 0746.8.2 Locate each landmark on an unlabeled drawing.

Standard 9: Pathology (0746.S.9)

Students will describe various diseases of the oral cavity.

Pathology Objectives

Students will:

- 0746.9.1 Identify factors involved in disease production.
- 0746.9.2 Describe the inflammatory process and the cardinal signs indicating inflammation.
- 0746.9.3 Define the etiology, incidence and disease process of dental caries and periodontal disease.
- 0746.9.4 Associate tissue characteristics with diseases of the oral cavity.

0746.9.5 Differentiate between benign and malignant neoplasma.

Standard 10: Pharmacology (0746.S.10)

Students will identify dental related drugs and the purposes and procedures of administration.

Pharmacology Objectives

Students will:

- 0746.10.1 Identify various sources of dental related drugs.
- 0746.10.2 Identify classification of drugs and describe their indications and contraindications.
- 0746.10.3 Identify preferred routes of administrations of drugs.

Standard 11: Management of Pain and Anxiety (0746.S.11)

Students will discuss the principles of managing dental pain and anxiety.

Management of Pain and Anxiety Objectives

Students will:

- 0746.11.1 Describe methods used to manage the pain and anxiety related to dental procedures.
- 0746.11.2 Explain different types of topical anesthetics and their placements.
- 0746.11.3 Describe types of local anesthetics.
- 0746.11.4 List the steps in the preparation of local anesthetic administration.
- 0746.11.5 Identify the injection sites for the maxillary and mandibular arches.
- 0746.11.6 Identify supplemental techniques to administer anesthetics.
- 0746.11.7 Discuss the role of nitrous oxide in the care of the dental patient.
- 0746.11.8 Identify the responsibility of the assistant in the administration of nitrous oxide.

Standard 12: Dental Charting (0746.S.12)

Students will describe the different types of charting methods.

Dental Charting Objectives

Students will;

- 0746.12.1 Explain the purpose of patient teeth charting in dental offices.
- 0746.12.2 Identify charting techniques that use symbols to represent conditions present in the oral cavity.
- 0746.12.3 List and explain the systems used for charting the permanent and deciduous dentitions.
- 0746.12.4 Define G.V. Black's classifications of cavity preparations.
- 0746.12.5 List common abbreviations used to identify simple, compound and complex cavities.
- 0746.12.6 Describe basic terminology used in dental charting.
- 0746.12.7 Explain color indicators and identify charting symbols.

Standard 13: Technology (0746.S.13)

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0746.13.1 Research the options and various Computerized Dental Office Programs utilizing the Internet.
- 0746.13.2 Integrate the use of Dental Software Programs.
- 0746.13.3 Describe examples of ways in which computers are used in the dental office.
- 0746.13.4 Explain why ergonomics are important at a computer workstation.
- 0746.13.5 Review On Line supply ordering/inventory systems.

Standard 14: Student Organization (0746.S.14)

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0746.14.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0746.14.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0746.14.3 Apply parliamentary procedure in organizational meetings.
- 0746.14.4 Demonstrate team membership skill, such as cooperation and leadership.
- 0746.14.5 Take part in local, state and national dental health care and education projects.

Dental Specialties

WVEIS Code 0747

This course contains the beginning concepts and skills students will need for entry-level employment as a dental assistant in a specialty office. Major instructional concepts include: orientation to specialty areas, instrumentation and procedures. Students are required to complete a work-based clinical experience in each of the specialty areas within this course. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Orientation to Oral Maxillofacial Surgery (0747.S.1)

Students will compare duties of a general assistant with those of an oral surgery assistant.

Oral Maxillofacial Surgery Objectives

Students will:

- 0747.1.1 Describe the specialty of oral maxillofacial surgery.
- 0747.1.2 Identify indications for oral maxillofacial surgery.
- 0747.1.3 Differentiate between the role of a general assistant and the oral surgery assistant.
- 0747.1.4 Explain the relevant safety practices and procedures for an oral surgery assistant.
- 0747.1.5 Match terms associated with oral maxillofacial surgery to their definitions.

Standard 2: Instrumentation and Procedures in Oral Maxillofacial Surgery (0747.S.2)

Students will describe common oral maxillofacial surgical procedures and instrumentation.

Instrumentation and Procedures Objectives

Students will:

- 0747.2.1 Discuss the importance of the chain of asepsis during a surgical procedure.
- 0747.2.2 Identify and explain the use of instrument designs for oral surgery.
- 0747.2.3 Compare hand washing techniques with the surgical scrub technique.
- 0747.2.4 Perform a surgical scrub and prepare a sterile field.
- 0747.2.5 Describe the type of postoperative care given to a patient after a surgical procedure.
- 0747.2.6 Demonstrate proficiency in various common oral surgery procedures.

Standard 3: Orientation to Endodontics (0747.S.3)

Students will describe the duties and responsibilities of an endodontic assistant.

Endodontics Objectives

Students will:

- 0747.3.1 Explain the duties and responsibilities of the endodontic assistant.
- 0747.3.2 List and explain the indications and contraindications for endodontic treatment.
- 0747.3.3 Describe the various examination and diagnostic procedures for endodontic emergencies.
- 0747.3.4 Identify the importance of ethical practices in the endodontic office.

Standard 4: Instrumentation and Procedures in Endodontics (0747.S.4)

Students will describe methods of preparing for procedures common in the treatment of the endodontic patient.

Instrumentation and Procedures in Endodontics Objectives

Students will:

- 0747.4.1 Discuss the types of endodontic procedures.
- 0747.4.2 List and explain the use of instrumentation designed for endodontic procedures.
- 0747.4.3 Describe the medicaments and dental materials used in endodontics.
- 0747.4.4 Demonstrate proficiency in various endodontic procedures.

0747.4.5 List and explain procedures that are considered to be surgical endodontics.

Standard 5: Orientation to Orthodontics (0747.S.5)

Students will discuss concepts of orthodontics and the responsibilities of an orthodontic assistant.

Orthodontics Objectives

Students will:

- 0747.5.1 Explain the environment of an orthodontic practice.
- 0747.5.2 List and describe the types of malocclusion.
- 0747.5.3 Name the types of diagnostic records used to assess orthodontic problems.
- 0747.5.4 Describe corrective orthodontics and the types of treatment involved.
- 0747.5.5 Match terms associated with orthodontics to their correct meaning.
- 0747.5.6 Identify the role of the orthodontic assistant in preparing diagnostic records.
- 0747.5.7 Examine causes of malocclusion and dentofacial deformities.

Standard 6: Instrumentation and Procedures in Orthodontics (0747.S.6)

Students will identify various procedures and instruments used in orthodontics.

Instrumentation and Procedures in Orthodontics Objectives

Students will:

- 0747.6.1 Identify and explain the function of common orthodontic instruments.
- 0747.6.2 List and describe the components of the fixed appliance.
- 0747.6.3 Discuss the use and function of orthodontic head gear.
- 0747.6.4 Summarize ways to communicate the importance of dietary habits in orthodontic treatment.
- 0747.6.5 Describe ways to convey the value of good oral hygiene habits in orthodontic treatment.
- 0747.6.6 Demonstrate proficiency in various orthodontic procedures.

Standard 7: Clinical Internship in Dental Specialties (0747.S.7)

Students will participate in a clinical internship for each of the dental specialties within this course.

Clinical Internship Objectives

Students will:

- 0747.7.1 Demonstrate a working knowledge of externship eligibility requirements.
- 0747.7.2 Comply with required health regulations such as proof of physical examination and immunization status.
- 0747.7.3 Provide proof of personal health insurance.
- 0747.7.4 Wear proper clinical attire.
- 0747.7.5 Conform to policies regarding performance of skills and scope of responsibility.
- 0747.7.6 Correctly and safely perform procedures under the direct supervision of an instructor or clinical site preceptor.
- 0747.7.7 Maintain professional standards including patient confidentiality.
- 0747.7.8 Organize and effectively manage time.
- 0747.7.9 Participate in internship evaluation process.

Standard 8: Technology (0747.S.8)

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0747.8.1 Integrate the use of software, hardware and the Internet to practice and master standards identified in the course.
- 0747.8.2 Utilize the Internet as a resource/research tool.

Standard 9: Student Organization

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0747.9.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0747.9.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0747.9.3 Apply parliamentary procedure in organizational meetings.
- 0747.9.4 Demonstrate team membership skill, such as cooperation and leadership.
- 0747.9.5 Take part in local, state and national dental health care and education projects.

Dental Terminology

WVEIS Code 0748

This course contains the dental terminology needed for entry-level employment as a Dental Assistant within both clinical and administrative areas. After an overview of the role, function and utilization of dental terminology, major instructional components include the use of dental terminology in the following areas: odontology and anatomical landmarks, infection control, chairside assisting, radiography, dental laboratory, pharmacology and emergency care, business office procedures and dental specialties. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Dental Terminology (0748.S.1)

Students will define, pronounce and use dental terminology.

Dental Terminology Objectives

Students will:

- 0748.1.1 Explain the steps in analyzing the definition of dental acronyms.
- 0748.1.2 Pronounce commonly used dental terms.
- 0748.1.3 Define and pronounce commonly used dental root words, prefixes and suffixes.
- 0748.1.4 Identify commonly used acronyms and abbreviations.

Standard 2: Odontology and Anatomical Landmarks (0748.S.2)

Students will identify terminology associated with odontology and anatomical landmarks.

Odontology and Anatomical Landmarks Objectives

Students will:

- 0748.2.1 Name and identify the major bones of the face and skull.
- 0748.2.2 Name the major muscles of mastication and illustrate positioning.
- 0748.2.3 Describe the location and function of the salivary glands.
- 0748.2.4 Correctly locate and pronounce oral cavity landmarks.
- 0748.2.5 Discuss the various dentitions and related terms.
- 0748.2.6 Name and discuss the various tissues and membranes that make up the periodontium.
- 0748.2.7 Name and identify the tooth surfaces and characteristic landmarks.

Standard 3: Infection Control (0748.S.3)

Students will define and pronounce terminology associated with infection control.

Infection Control Objectives

Students will:

- 0748.3.1 Discuss related signs, symptoms and sources related to various common disease conditions.
- 0748.3.2 Identify and explain transmission and prevention of pathogenic agents.
- 0748.3.3 Identify government agencies concerned with the control of disease.

Standard 4: Chairside Assisting (0748.S.4)

Students will define and pronounce terminology associated with clinical chairside assisting.

Chairside Assisting Objectives

Students will:

- 0748.4.1 Identify and explain terminology related to diseases associated with teeth, tissues and structures of the head.
- 0748.4.2 Interpret commonly used dental terms related to various chairside procedures.
- 0748.4.3 Differentiate between the various types and properties of dental restorative materials.

0748.4.4 Define and pronounce terms related to the preparation and isolation of the operative area.

Standard 5: Radiography (0748.S.5)

Students will define and pronounce dental terms that are associated with radiography.

Radiography Objectives

Students will:

- 0748.5.1 Define and pronounce terms connected with the production and properties of Roentgen Rays.
- 0748.5.2 List and give examples of acceptable methods for radiation protection.
- 0748.5.3 Describe the various types of radiographs and the qualities necessary for diagnosis.
- 0748.5.4 Identify the steps to process dental radiographs.
- 0748.5.5 List and describe common radiographic errors and the causes of each.

Standard 6: Dental Laboratory (0748.S.6)

Students will identify, define and pronounce terminology related to dental laboratory materials and procedures.

Dental Laboratory Objectives

Students will:

- 0748.6.1 Identify various materials used in the dental laboratory and give examples of their uses.
- 0748.6.2 Discuss the characteristics of various types of descriptive or manipulative dental materials.
- 0748.6.3 Describe the major fixed prosthodontic appliances.
- 0748.6.4 List and explain the assorted prosthodontic removable appliances.

Standard 7: Pharmacology and Emergency Care (0748.S.7)

Students will define and pronounce terminology related to pharmacology and emergency care in a dental office.

Pharmacology and Emergency Care Objectives

Students will:

- 0748.7.1 Name and identify the regulatory bodies concerned with drugs.
- 0748.7.2 Discuss the effects that drugs impose on the body.
- 0748.7.3 Describe the parts of a prescription and explain the various routes of drug administration.
- 0748.7.4 List and explain the classification of drugs commonly used in dentistry.
- 0748.7.5 Identify and describe major equipment and materials needed in prevention of emergencies and emergency treatment.
- 0748.7.6 Define terms related to CPR and other common medical emergencies.
- 0748.7.7 Describe the most common emergencies occurring in a dental office.

Standard 8: Business Office Procedures (0748.S.8)

Students will define and pronounce terminology associated with business office procedures.

Business Office Procedures Objectives

Students will:

- 0748.8.1 Discuss and illustrate oral and written communications related to office procedures.
- 0748.8.2 Explain various types of appointments and correlated scheduling terms.
- 0748.8.3 Interpret dental insurance terms and discuss types of dental insurance plans.
- 0748.8.4 Define common banking terms and discuss types of financial disbursements used in a dental office.
- 0748.8.5 Explain terms related to purchasing and inventory of supplies.
- 0748.8.6 List and define the major legal and ethical terms used in a dental business office.

Standard 9: Dental Specialties (0748.S.9)

Students will recognize and apply appropriate terminology to various dental specialties.

Dental Specialties Objectives

Students will:

- 0748.9.1 Define and explain terminology related to the procedures used to construct fixed and removable dental prostheses.
- 0748.9.2 Identify and describe the diagnostic tests used to determine pulpal conditions.
- 0748.9.3 List and explain the equipment and materials necessary for endodontic treatment.
- 0748.9.4 Compile a list of and explain the instruments commonly used in oral surgery and explain their use.
- 0748.9.5 Describe the different types of tooth extractions and tooth impactions.
- 0748.9.6 Discuss classifications of malocclusion and the primary methods of treatment for each.
- 0748.9.7 List and explain the instruments used in the orthodontic practice.
- 0748.9.8 Name and discuss various methods used to care for periodontal conditions.
- 0748.9.10 Identify common childhood diseases that affect the condition of the human dentition.

Standard 10: Technology

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0748.10.1 Integrate the use of software, hardware and the Internet to practice and master standards identified in the course.
- 0748.10.2 Utilize the Internet as a resource/research tool.

Standard 11: Student Organization

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0748.11.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0748.11.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0748.11.3 Apply parliamentary procedure in organizational meetings.
- 0748.11.4 Demonstrate team membership skill, such as cooperation and leadership.
- 0748.11.5 Take part in local, state and national dental health care and education projects.

Supervised Dental Assistant Experience

WVEIS Code 0749

The student within the Supervised Dental Assistant Experience course will focus on instructional components that will enable him/her to work as an effective member of the dental team. Students will be introduced to the specialties of dentistry and the requirements necessary to function as an administrative and chairside assistant in a dental office. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Dental Health Team (0749.S.1)

Students will work as effective members of a dental health team.

Dental Health Team Objective

Students will:

- 0749.1.1 Use proper communication techniques while serving as a member of the dental health team.
- 0749.1.2 Utilize proper grooming techniques while serving as a member of the dental health team.
- 0749.1.3 Perform various roles of a dental health team member.
- 0749.1.4 Analyze various situations using brainstorming techniques to solve dental health team problems.
- 0749.1.5 Demonstrate proper ethical decision making skills as related to dental health problems, given various scenarios.

Standard 2: Dental Office Receptionist (0749.S.2)

Students will describe procedures of the Dental Office Receptionist.

Dental Office Receptionist Objectives

Students will:

- 0749.2.1 Describe the difference between verbal and non-verbal language using role play.
- 0749.2.2 Describe the first impression that a patient should receive when entering a dental office.
- 0749.2.3 Demonstrate the proper protocol for answering an incoming call.
- 0749.2.4 Apply proper protocol in handling a difficult patient via telephone and/or in person.
- 0749.2.5 List the information all messages should contain.
- 0749.2.6 Describe effective ways of scheduling patients.

Standard 3: Administrative Office Dental Assistant (0749.S.3)

Students will describe procedures of the Administrative Office Manager.

Administrative Office Dental Assistant Objective

Students will:

- 0749.3.1 Describe the dental office staff and their areas of responsibility.
- 0749.3.2 List marketing ideas for the dental office.
- 0749.3.3 Describe the various uses of the telephone and business office technology.
- 0749.3.4 Differentiate between accounts payable and accounts receivable.
- 0749.3.5 Explain the need to be fluent with computerized and manual systems for patient management.
- 0749.3.6 Demonstrate filing procedures.
- 0749.3.7 Examine correspondence within the dental office, other dental professionals and insurance companies.

Standard 4: Chairside Dental Assisting (0749.S.4)

Students will assist in four-handed dental procedures and perform various chairside duties.

Chairside Dental Assisting Objectives

- 0749.4.1 Assist with various four-handed operative procedures.
- 0749.4.2 Illustrate a amalgam tray set-up with instruments and necessary materials.
- 0749.4.3 Prepare a dental tofflemire matrix and wedges.
- 0749.4.4 Assemble composite tray set-up with instrument and necessary materials.
- 0749.4.5 Prepare a plastic strip matrix and wedges.
- 0749.4.6 Demonstrate the ability to set up an examination tray.
- 0749.4.7 Assemble prophyl tray set-up with instruments and necessary materials.
- 0749.4.8 Complete crown/bridge (preparation and insert) tray set-up with instruments and necessary materials.

Standard 5: Endodontic Dental Assistant (0749.S.5)

Students will identify treatment procedures and processes for assisting the dentist while performing a root canal.

Endodontic Dental Assistant Objectives

Students will;

- 0749.5.1 Define endodontics and endodontist.
- 0749.5.2 Describe pulpal disease.
- 0749.5.3 List the instruments and their functions used in endodontic treatment.
- 0749.5.4 List materials and their functions used in endodontic treatment.
- 0749.5.5 Explain endodontic surgical procedures, including the instruments required.
- 0749.5.6 Describe the process for placement of a rubber dam.

Standard 6: Oral and Maxillofacial Dental Assistant (0749.S.6)

Students will identify the procedures within the Oral and Maxillofacial dental office.

Oral and Maxillofacial Dental Assistant Objective

Students will:

- 0749.6.1 List the instruments used in surgery and explain their usage.
- 0749.6.2 Describe and demonstrate aseptic procedures prior to and following surgery in the dental office.
- 0749.6.3 Explain new patient procedures.
- 0749.6.4 Describe postoperative instructions given to patients, both written and oral.
- 0749.6.5 List various dental surgical procedures performed within the dental office.
- 0749.6.6 List various dental surgical procedures performed within the hospital.

Standard 7: Orthodontic Dental Assistant (0749.S.7)

Students will describe procedures common to the Orthodontic Office.

Orthodontic Dental Assistant Objectives

Students will:

- 0749.7.1 Describe and define the orthodontic setting.
- 0749.7.2 List the critical roles and duties of a dental assistant in the Orthodontic office.
- 0749.7.3 Describe causes of malocclusion.
- 0749.7.4 Explain preventive, interceptive and corrective orthodontics.
- 0749.7.5 Differentiate between fixed and removable appliances.
- 0749.7.6 Explain the stages of orthodontic treatment.
- 0749.7.7 Describe how teeth are retained in position after orthodontic treatment is complete.

Standard 8: Pediatric Dental Assistant (0749.S.8)

Students will demonstrate the role of the Dental Assistant within Pediatric Dentistry and the unique patients served.

Pediatric Dental Assistant Objectives

Students will:

- 0749.8.1 Describe the pediatric office and the importance of team work.
- 0749.8.2 Identify common behavior of children at various ages.
- 0749.8.3 Describe the role of the parent/guardian/family members before and during treatment of the child patient.
- 0749.8.4 Identify the unique equipment geared toward pediatric dentistry.
- 0749.8.5 Identify the signs of child abuse and the procedure for reporting suspected child abuse.

Standard 9: Periodontic Dental Assistant (0749.S.9)

Students will describe common procedures in a Periodontist Office.

Periodontic Dental Assistant Objectives

Students will:

- 0749.9.1 Identify the periodontal team and their roles.
- 0749.9.2 Explain the diagnostic procedure from start, completion and follow-up for periodontic patients.
- 0749.9.3 Differentiate between surgical and non-surgical treatment procedures.
- 0749.9.4 Describe the role of the patient in maintaining the arrest of their periodontal disease.

Standard 10: Dental Laboratory Assistant (0749.S.10)

Students will identify procedures common in the dental laboratory.

Dental Laboratory Assistant Objectives

Students will:

- 0749.10.1 Pour, trim and articulate models.
- 0749.10.2 Prepare various custom trays (night guard, bleaching tray, mouthpiece, etc.)
- 0749.10.3 Differentiate between waxes and their use.
- 0749.10.4 Explain the procedure for preparing a fixed crown/bridge for patients.
- 0749.10.5 Explain the procedure for preparing a removable appliance for patients.
- 0749.10.6 List the importance of following safety precautions during all lab procedures.

Standard 11: Technology (0749.S.11)

Students will apply knowledge of computers and their use within the dental health care system.

Technology Objectives

Students will:

- 0749.11.1 Research the options and various Computerized Dental Office Programs utilizing the Internet.
- 0749.11.2 Integrate the use of Dental Software Programs.
- 0749.11.3 Integrate the use of software, hardware and the Internet to practice and master standards.
- 0749.11.4 Utilize the Internet as a resource/research tool.

Standard 12: Student Organization (0749.S.12)

Students will participate in at least one Career and Technical Organization (CTSO).

Student Organization Objectives

Students will:

- 0749.12.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0749.12.2 Research the American Dental Assistants Association (ADAA) or National Association of Dental Assistants (NADA) as option for state/local membership.
- 0749.12.3 Apply parliamentary procedure in organizational meetings.
- 0749.12.4 Demonstrate team membership skill, such as cooperation and leadership.
- 0749.12.5 Take part in local, state and national dental health care and educ

Health Care Fundamentals

WVEIS Code 0711

The Health Occupations Education student will be introduced to information about health care systems and careers. Information is included on recognition of disease transmission and prevention and the prevention of disease utilizing good nutrition. Students will analyze stages of growth and development and examine human needs. Emphasis will be placed on analyzing and interpreting medical terminology with a focus on medical elements. Students are provided the opportunity to acquire First Aid and CPR certification and are encouraged to affiliate with a Career and Technical Student Organization (CTSO).

Standard 1: Health Care Systems (0711.S.1)

Students will demonstrate knowledge of the general purposes and organization of the various types of health care systems.

Health Care Systems Objectives

Students will:

- 0711.1.1 Examine systems theory and construct a general systems model listing inputs, throughputs, and feedback loop.
- 0711.1.2 Compare and contrast health care systems delivering acute and long term care.
- 0711.1.3 Differentiate major government and voluntary agencies involved in the delivery of health care.
- 0711.1.4 Identify professional/student organizations as related to specific health care careers.
- 0711.1.5 Define common terms and abbreviations associated with payment classifications and health insurance plans.
- 0711.1.6 Distinguish lines of authority or chain of command in a typical health care facility or agency.

Standard 2: Careers (0711.S.2)

Students will research careers in health care systems.

Career Objectives

Students will:

- 0711.2.1 Research and analyze the duties, educational requirements and employment opportunities of at least ten different health careers.
- 0711.2.2 Contrast the differences between certification, registration and licensure.
- 0711.2.3 Research at least one health career by observing or interviewing an individual employed in that field or by requesting information from resources.
- 0711.2.4 Recognize and interpret at least ten abbreviations used to identify health occupation workers.
- 0711.2.5 Define, pronounce and spell key terms related to careers in health care.

Standard 3: Disease Transmission and Prevention

Students will demonstrate knowledge of principles of disease transmission and prevention.

Disease Transmission and Prevention Objectives

Students will:

- 0711.3.1 Examine the conditions necessary for microorganisms to grow.
- 0711.3.2 Recognize the cycle of microorganism transmission and prevention.
- 0711.3.3 Perform proper hand washing technique.
- 0711.3.4 Demonstrate knowledge of standard precautions.

Standard 4: Human Growth and Development (0711.S.4)

Students will demonstrate a knowledge of human needs/human growth and development.

Human Growth and Development Objectives

Students will:

- 0711.4.1 Examine and describe the basic stages of human growth and development.
- 0711.4.2 Identify ways in which life stages affect an individual's needs.
- 0711.4.3 Describe the individual's need for exercise and activity.
- 0711.4.4 Evaluate Maslow's Hierarchy of Needs.
- 0711.4.5 Analyze the five stages of grieving.

Standard 5: Nutrition (0711.S.5)

Students will demonstrate knowledge of nutrition.

Nutrition Objectives

Students will:

- 0711.5.1 Identify the five basic food groups and the number of daily recommended servings of each.
- 0711.5.2 Compare and analyze therapeutic diets.
- 0711.5.3 Name the six groups of essential nutrients and their functions and sources.

Standard 6: Medical Terminology (0711.S.6)

Students will demonstrate knowledge of basic medical terminology.

Medical Terminology Objectives

Students will:

- 0711.6.1 Define commonly used medical roots, prefixes and suffixes.
- 0711.6.2 Pronounce and spell commonly used medical roots, prefixes and suffixes.
- 0711.6.3 Match common medical roots, prefixes, and suffixes with their definitions.

Standard 7: Emergency Medical Care (0711.S.7)

Students will demonstrate knowledge and skill in performing basic emergency medical care.

Emergency Medical Care Objectives

Students will:

- 0711.7.1 Distinguish the four priorities of First Aid.
- 0711.7.2 Identify signs, symptoms, and treatment for shock.
- 0711.7.3 Demonstrate the four methods for the control of bleeding in the order they are used.
- 0711.7.4 Describe first aid treatment for wounds and the terms associated with each type.
- 0711.7.5 Describe first aid measures for sudden illness and injury including fainting, stroke, seizures, insulin shock and diabetic coma.
- 0711.7.6 Demonstrate first aid measures for bone and joint injuries including fracture, dislocation, sprain and strain.
- 0711.7.7 Demonstrate dressing, bandaging and splinting techniques.
- 0711.7.8 Recognize first aid measures used for specific injuries involving the eyes, head, nose, ears, chest, abdomen and genital organs.
- 0711.7.9 Describe first aid measures for temperature related injuries including hot and cold exposure and burns.
- 0711.7.10 Describe first aid measures for poisoning, stings, bites, and allergic reactions.
- 0711.7.11 Secure certification in First Aid from American Red Cross or American Heart Association.

Standard 8: CPR and First Aid for Obstructed Airway (0711.S.8)

Students will identify the need for and perform Cardiopulmonary Resuscitation and first aid for an Obstructed Airway.

CPR and First Aid for Obstructed Airway Objectives

Students will:

- 0711.8.1 Express the risk factors for cardiovascular disease.
- 0711.8.2 Perform correct CPR technique for the following: infant, child, and one-rescuer adult.
- 0711.8.3 Identify signs and symptoms of an obstructed airway.
- 0711.8.4 Identify the signs and symptoms of a heart attack.
- 0711.8.5 Demonstrate universal distress signal for obstructed airway.
- 0711.8.6 Perform procedures to relieve airway obstruction in an infant, child and adult.
- 0711.8.7 Demonstrate the correct use of the AED.
- 0711.8.8 Secure certification for adult, child and infant CPR and choking from American Red Cross or American Heart Association.

Standard 9: Technology (0711.S.9)

Students will demonstrate knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0711.9.1 Integrate the use of software, hardware, and the internet to practice and master standards identified in the course.
- 0711.9.2 Utilize the internet as a resource/research tool.

Standard 10: Student Organizations (0711.S.10)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0711.10.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (Skills USA/VICA).
- 0711.10.2 Apply parliamentary procedure in organizational meetings.
- 0711.10.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0711.10.4 Take part in local, state, and national health care and education projects.

Supplement to Health Care Fundamentals

WVEIS Code 0713

The student will build on standards and objectives introduced in the Health Care Fundamentals course. Within this course students will examine such areas as goal development, critical thinking skills, effective communication, and interpersonal relationships. Utilizing computer simulations of clinical scenarios, students will enhance skills in the analytical and evaluation processes. Upon completion of course standards students will be asked to re-access their personal attitudes and goals in light of new knowledge gained. Students are encouraged to participate in a Career and Technical Student Organization (CTSO). *For health occupation education students who have enrolled at technical centers having already completed Health Care Fundamentals (0711).

Standard 1: Goal Development (0713.S.1)

Students will explore self-assessment concepts in order to develop personal and professional goals.

Goal Development Objectives

Students will:

- 0713.1.1 Explore concepts of self-esteem, values and attitudes.
- 0713.1.2 Assess personal habits and attitudes.
- 0713.1.3 Identify professional characteristics necessary for employment in the health care industry.
- 0713.1.4 Examine the goal setting process.
- 0713.1.5 Formulate an action plan to achieve personal and academic goals.
- 0713.1.6 Summarize the importance of time management.

Standard 2: Analytical Skills (0713.S.2)

Students will analyze and evaluate information utilizing clinical simulations.

Analytical Skills Objectives

Students will:

- 0713.2.1 Analyze clinical scenarios in a critical, objective manner.
- 0713.2.2 Examine workplace related issues utilizing clinical scenarios.
- 0713.2.3 Integrate scenario outcomes as they relate to the workplace environment.

Standard 3: Critical Thinking (0713.S.3)

Students will demonstrate effective use of critical thinking skills in the personal decision making process.

Critical Thinking Objectives

Students will:

- 0713.3.1 Define cognitive processing.
- 0713.3.2 Examine the different types of thinking.
- 0713.3.3 Compare and contrast inductive and deductive reasoning.
- 0713.3.4 Integrate critical thinking skills into personal decision-making.

Standard 4: Effective Communication (0713.S.4)

Students will demonstrate appropriate communication skills in various health care settings.

Effective Communication Objectives

Students will:

- 0713.4.1 Define methods to improve verbal and nonverbal communication.
- 0713.4.2 Explore health care consumer-related communication.

- 0713.4.3 Identify the physical and mental characteristics of listening.
- 0713.4.4 Create written documentation based on interpretation of clinical scenarios.

Standard 5: Interpersonal Relationships (0713.S.5)

Students will examine elements affecting patient interaction, interpersonal relationships and group dynamics.

Interpersonal Relationships Objectives

Students will:

- 0713.5.1 Explore the principles of teamwork.
- 0713.5.2 Summarize factors that affect group dynamics.
- 0713.5.3 Demonstrate group leadership techniques.
- 0713.5.4 Identify the steps involved in patient interaction.
- 0713.5.5 Discuss the relationship between communication and territorial space.

Standard 6: Personal Achievement Assessment (0713.S.6)

Students will re-examine personal attitudes and goals based on newly acquired information.

Personal Achievement Evaluation Objectives

Students will:

- 0713.6.1 Relate acquired knowledge to potential career success.
- 0713.6.2 Modify personal goals to reflect mastery of standards.

Standard 7: Technology (0713.S.7)

Students will assess and use electronically produced information to master course standards.

Technology Objectives

Students will:

- 0713.7.1 Integrate the use of software, hardware and the internet to practice and master standards identified in the course.
- 0713.7.2 Utilize the internet as a resource and research tool.

Standard 8: Student Organizations (0713.S.8)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0713.8.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/ Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0713.8.2 Apply parliamentary procedure in organizational meetings.
- 0713.8.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0713.8.4 Take part in local, state, and national health care and education projects.

Concepts Of Health Care

WVEIS Code 0715

The Health Care Student will be introduced to the personal qualities and communication skills needed to work successfully in a health care setting. The course also integrates advanced medical terminology, building upon basic terminology from the fundamentals course. Major areas of study are the legal and ethical responsibilities of health care workers, patients' rights and legal directives, measurement and assessment, and fundamental math principles used in health care services. Students are encouraged to participate in a Career and Technical Student Organization (CTSO) as part of the course.

Standard 1: Personal Qualities (0715.S.1)

Students will demonstrate awareness of personal qualities as they relate to success as a health care worker.

Personal Qualities Objectives

Students will:

- 0715.1.1 Describe at least eight personal traits or attitudes desirable in the health care worker.
- 0715.1.2 Examine basic professional standards of the health care worker as they apply to hygiene, dress, language, confidentiality and behavior.
- 0715.1.3 Compare the relationship among values, attitudes and behavior.
- 0715.1.4 Define, pronounce and spell key terms related to personal qualities of the health care worker.

Standard 2: Health Care Consumer (0715.S.2)

Students will demonstrate knowledge of variables that impact the individual health care consumer.

Health Care Consumer Objectives

Students will:

- 0715.2.1 Compare and contrast health and illness.
- 0715.2.2 Summarize factors which influence consumer attitudes and use of available health care services.

Standard 3: Communicating Observations (0715.S.3)

Students will apply proper procedures for communicating observations.

Communicating Observation Objectives

Students will:

- 0715.3.1 Differentiate between subjective and objective reporting.
- 0715.3.2 Discuss the role of the health care worker in gathering information and in making observations.
- 0715.3.3 Identify the reasons why observations must be reported promptly, accurately, and objectively.

Standard 4: Communication Skills (0715.S.4)

Students will demonstrate knowledge of effective communication skills in listening, speaking and writing.

Communication Skills Objectives

Students will:

- 0715.4.1 Convey and follow multi-step verbal directions.
- 0715.4.2 Participate in and lead group discussions.
- 0715.4.3 Organize ideas in an understandable format to plan written or oral communications.
- 0715.4.4 Compose sentences using correct punctuation and grammar.

- 0715.4.5 Describe ways one can maintain a courteous and professional approach toward patients/residents, families, the health care team, and the public.
- 0715.4.6 Differentiate basic principles of therapeutic communication.
- 0715.4.7 Utilize the three essential elements of effective communication.
- 0715.4.8 Apply appropriate telephone etiquette in answering the telephone and in recording messages.
- 0715.4.9 Assess alternate methods of communication with the hearing, vision, or speech impaired.

Standard 5: Medical Terminology (0715.S.5)

Students will demonstrate knowledge of advanced medical terminology.

Medical Terminology Objectives

Students will:

- 0715.5.1 Interpret common medical terms.
- 0715.5.2 Incorporate standard medical abbreviations and terms in written communications.
- 0715.5.3 Pronounce and spell medical terms.
- 0715.5.4 Analyze and compare common medical terms with their definitions.

Standard 6: Legal Issues and Ethics (0715.S.6)

Students will demonstrate knowledge of legal responsibilities and ethics in the health care setting.

Legal Issues and Ethics Objectives

Students will:

- 0715.6.1 Define, pronounce and spell common terms related to legal responsibilities and ethics in health care.
- 0715.6.2 Analyze privileged communications and explain how they apply to health care.
- 0715.6.3 Summarize and apply resident's/patient's bill of rights.
- 0715.6.4 Detect violations of resident's/patient's bill of rights.
- 0715.6.5 Differentiate between laws and ethics as related to health care.
- 0715.6.6 Examine basic professional standards as a safeguard for the health care worker, the employer and the client/resident/patient.
- 0715.6.7 Explain the concept of operating within one's scope of practice.

Standard 7: Math (0715.S.7)

Students will manipulate mathematical skills as they relate to health care professions.

Math Objectives

Students will:

- 0715.7.1 Perform the computations addition, subtraction, multiplication and division.
- 0715.7.2 Measure and compute using integers, fractions, and decimals and convert between metric/household systems.
- 0715.7.3 Solve problems involving ratio and proportions.
- 0715.7.4 Select and analyze appropriate diagrams, charts, graphs and tables to plot information.

Standard 8: Measurement and Assessment (0715.S.8)

Students will demonstrate knowledge and skill in measurement and assessment.

Measurement and Assessment Objectives

Students will:

- 0715.8.1 Describe the four main vital signs.
- 0715.8.2 Assess and compare the normal ranges for vital signs.

- 0715.8.3 Utilize appropriate supplies and equipment for measuring vital signs.
- 0715.8.4 Measure and record vital signs.
- 0715.8.5 Recognize and report abnormal vital signs.
- 0715.8.6 Relate vital signs to disease processes.
- 0715.8.7 Measure and record results of procedures such as height and weight, vital signs, intake and output, and circumference using appropriate mathematical calculations.
- 0715.8.8 Analyze and interpret diagrams, charts, graphs and tables.

Standard 9: Technology (0715.S.9)

Students will access and use electronically produced information to master course standards.

Technology Objectives

Students will:

- 0715.9.1 Use software and hardware to practice and master standards identified in the course.
- 0715.9.2 Use the Internet as a resource/research tool.

Standard 10: Student Organizations (0715.S.10)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0715.10.1 Participate in Health Occupations Students of America (HOSA) or Skills USA/ Vocational Industrial Clubs of America (Skills USA/VICA).
- 0715.10.2 Apply parliamentary procedure in organizational meetings.
- 0715.10.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0715.10.4 Take part in local, state and national health care and education projects.

Body Structures and Functions

WVEIS Code 0716

Upon successful completion of this course students will understand the structures and functions of each system within the human body. Additional instructional components will include concepts that pertain to the body as a whole, applicable medical terminology, and the pathophysiology common to each system. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Body as a Whole (0716.S.1)

Students will describe terms and concepts applicable to the human body as a whole.

Body as a Whole Objectives

Students will:

- 0716.1.1 Define anatomy and physiology.
- 0716.1.2 Name two subdivisions of anatomy.
- 0716.1.3 Identify the terms referring to location, direction, planes, and sections of the body.
- 0716.1.4 Define metabolism, anabolism, catabolism, and homeostasis.
- 0716.1.5 Explain the molecular structure and function of DNA and RNA.
- 0716.1.6 Describe acids and bases.
- 0716.1.7 Explain the process of neutralization.
- 0716.1.8 Define pH, including the pH scale.
- 0716.1.9 Give examples of the pH of various body fluids.
- 0716.1.10 Explain the significance of pH for body function.
- 0716.1.11 Define a buffer.
- 0716.1.12 Define and pronounce medical terminology applicable to body structures and functions.

Standard 2: Cells (0716.S.2)

Students will describe the structure of a typical cell and the function of each component.

Cells Objectives

Students will:

- 0716.2.1 Identify the structure of a typical cell.
- 0716.2.2 Describe the function of each structure of the cell.
- 0716.2.3 Define mitosis.
- 0716.2.4 Describe the five phases of mitosis.
- 0716.2.5 Define diffusion, osmosis, filtration, active transport, phagocytosis, and pinocytosis.
- 0716.2.6 Explain what is meant by cell specialization.
- 0716.2.7 Define tumor, benign, malignant, and metastases.

Standard 3: Tissue, Organs and Organ Systems (0716.S.3)

Students will describe tissues found within the human body and their relationship to organs and organ systems.

Tissue, Organs and Organ Systems Objectives

Students will:

- 0716.3.1 Name the four main types of tissue and describe their function and location.
- 0716.3.2 Define organ.
- 0716.3.3 Define organ system.
- 0716.3.4 Describe each system in the body in relationship to function and organs contained in each.
- 0716.3.5 Discuss the process by which tissue is repaired.
- 0716.3.6 Name the vitamins favorable to tissue repair.

Standard 4: Integumentary System (0716.S.4)

Students will describe the structures and functions of the Integumentary System including appendages and common diseases.

Integumentary System Objectives

Students will:

- 0716.4.1 Define integument.
- 0716.4.2 Describe the function of the skin.
- 0716.4.3 Define epidermis, dermis, and subcutaneous including their structure, function, and location.
- 0716.4.4 List the appendages of the skin along with their structure, function and location.
- 0716.4.5 Explain how skin functions as a barrier to microorganisms.
- 0716.4.6 Describe the following disorders: acne vulgaris, athlete's feet, dermatitis, eczema, impetigo contagiosa, psoriasis, ring worm, urticaria, furuncles, carbuncles, shingles, herpes, skin cancer and bunions.
- 0716.4.7 Describe common types of skin lesions in relationship to their characteristics and size, including an example of each.

Standard 5: Skeletal System (0716.S.5)

Students will describe the structures and functions of the skeletal system and common disorders associated with this system.

Skeletal System Objectives

Students will:

- 0716.5.1 List the main functions of the skeletal system.
- 0716.5.2 Explain how bones are classified.
- 0716.5.3 Name and define types of joint movement.
- 0716.5.4 Describe the process by which bone is formed.
- 0716.5.5 Label the parts of the long bone and describe their structure and function.
- 0716.5.6 Explain how bones grow.
- 0716.5.7 Name and locate the bones of the skeleton.
- 0716.5.8 Define four types of fractures.
- 0716.5.9 Define open reduction, closed reduction and traction.
- 0716.5.10 Identify common bone and joint disorders.

Standard 6: Muscular System (0716.S.6)

Students will describe the structure and functions of each muscle type, including common disorders of the muscular system.

Muscular System Objectives

Students will:

- 0716.6.1 Describe the function of muscle.
- 0716.6.2 Name, describe and give the location for each type of muscle.
- 0716.6.3 Define contractibility, extensibility, elasticity, and irritability as it relates to muscular function.
- 0716.6.4 Describe how muscles work as a pair.
- 0716.6.5 Explain origin and insertion of muscle.
- 0716.6.6 Define antagonist, flexor, extensor, levator, depressor and dilator.
- 0716.6.7 Explain energy and heat in relationship to muscle work.
- 0716.6.8 Explain muscle fatigue and muscle tone.
- 0716.6.9 Name, locate and describe the function of the main skeletal muscles.
- 0716.6.10 Explain how sports training affects muscles.
- 0716.6.11 Identify common muscular disorders.

Standard 7: Circulatory System, the Heart, and Blood Vessels (0716.S.7)

Students will describe the structures and functions of the circulatory system, including the heart and applicable diseases.

Circulatory System, the Heart, and Blood Vessels Objectives

Students will:

- 0716.7.1 Describe the function of the circulatory system.
- 0716.7.2 List and locate the components of the circulatory system.
- 0716.7.3 Discuss substances that are added and removed from the blood during circulation through body organs.
- 0716.7.4 Describe the structures of the heart and their functions.
- 0716.7.5 Trace the blood pathway through the cardiopulmonary circulation.
- 0716.7.6 Trace the conductive pathway of an electrical impulse by a heart contraction, describing the resulting function.
- 0716.7.7 Identify possible disorders of the heart.
- 0716.7.8 Name and describe the specialized circulatory systems.
- 0716.7.9 Trace the blood in fetal circulation.
- 0716.7.10 List and describe the types of blood vessels.
- 0716.7.11 Identify the principal arteries and veins of the body.
- 0716.7.12 Explain the process by which blood flows through the arteries and veins.
- 0716.7.13 Describe systolic and diastolic blood pressure.
- 0716.7.14 Describe various disorders of the blood vessels.

Standard 8: Blood (0716.S.8)

Students will describe the structures and functions of the blood, including blood types and various disorders.

Blood Objectives

Students will:

- 0716.8.1 List and describe the functions of important components of the blood.
- 0716.8.2 Name the three types of blood cells.
- 0716.8.3 Define hemoglobin, erythropoiesis, hemolysis, and coagulation.
- 0716.8.4 Describe the inflammation process.
- 0716.8.5 Describe the four types of blood.
- 0716.8.6 Discuss the significance of the Rh antigen.
- 0716.8.7 Recognize normal blood vessels.
- 0716.8.8 Describe various disorders of the blood.

Standard 9: The Lymphatic System and Immunity (0716.S.9)

Students will describe the structures and functions of the lymphatic system, understanding its role in immunity.

The Lymphatic System and Immunity Objectives

Students will:

- 0716.9.1 Describe the lymphatic system and define its components.
- 0716.9.2 Define lymph nodes.
- 0716.9.3 Explain the role of the tonsils, spleen, and thymus gland to the lymphatic system.
- 0716.9.4 Define immunity and describe two types of immunity.
- 0716.9.5 Define immunization, antigen, immunoglobulin and autoimmune disease.
- 0716.9.6 Explain the process of hypersensitivity or allergy development.
- 0716.9.7 Define anaphylaxis.
- 0716.9.8 List the symptoms of AIDS.
- 0716.9.9 Describe how AIDS is transmitted and measures to prevent its transmission.

0716.9.10 Describe standard precautions.

Standard 10: Respiratory System (0716.S.10)

Students will describe the structures and function of the respiratory system.

Respiratory System Objectives

Students will:

- 0716.10.1 Describe the function of the respiratory system.
- 0716.10.2 Describe the structures and functions of the components of the respiratory system.
- 0716.10.3 Define mediastinum.
- 0716.10.4 Explain the breathing process.
- 0716.10.5 Describe the nervous and chemical factors necessary for the control of breathing.
- 0716.10.6 Name and describe four types of lung capacity volumes.
- 0716.10.7 Describe and recognize the following symptoms: apnea, dyspnea, eypnea, hyperpnia, orthopnea, and tachypnea.
- 0716.10.8 Discuss infections and noninfectious disorders of the respiratory system.

Standard 11: Digestive System (0716.S.11)

Students will describe the structures and functions of the digestive system, including common disorders.

Digestive System Objectives

Students will:

- 0716.11.1 Describe the structures and functions of the digestive system.
- 0716.11.2 Trace the digestion of food from the oral cavity until it leaves the alimentary canal, including the mechanical and chemical digestion.
- 0716.11.3 Describe the action of the enzymes on carbohydrates, fats, and protein.
- 0716.11.4 Discuss common disorders of the digestive system.

Standard 12: Urinary System (0716.S.12)

Students will describe structures and functions of the organs of the urinary system, including common disorders.

Urinary System Objectives

Students will:

- 0716.12.1 Describe the structures and functions of the organs of the urinary system.
- 0716.12.2 Explain how urine is found in the Nephron.
- 0716.12.3 Describe the chemical and nervous system control of urine secretion.
- 0716.12.4 Describe common disorders of the urinary system.

Standard 13: Endocrine System (0716.S.13)

Students will describe the function of the glands of the endocrine system including disorders common to the system.

Endocrine System Objectives

Students will:

- 0716.13.1 List the glands of the endocrine system and describe their functional location.
- 0716.13.2 Explain how the negative feedback system controls the secretion of hormones.
- 0716.13.3 Discuss prostaglandins.
- 0716.13.4 List the causative factors for endocrine gland disorders.
- 0716.13.5 Describe common disorders of the endocrine system.

Standard 14: Nervous System (0716.S.14)

Students will describe the structures and functions of the nervous system, including disorders of the brain and spinal cord.

Nervous System Objectives

Students will:

- 0716.14.1 Describe the functions of the nervous system.
- 0716.14.2 List and describe main divisions of the nervous system.
- 0716.14.3 Label the parts of the neuron and explain their function.
- 0716.14.4 Identify the parts of the brain and describe the function of each part.
- 0716.14.5 Describe the structure of the brain and spinal cord.
- 0716.14.6 Define cerebrospinal fluid and explain its circulation.
- 0716.14.7 Describe the functions of the spinal cord.
- 0716.14.8 Describe disorders of the brain and spinal cord.
- 0716.14.9 Describe a mixed nerve.
- 0716.14.10 Describe the functions of the cranial and spinal nerves.
- 0716.14.11 Explain the functions of the sympathetic and parasympathetic nervous system.
- 0716.14.12 Explain the simple reflex arc.
- 0716.14.13 Describe various disorders of the central nervous system and peripheral nervous system.

Standard 15: The Eye and The Ear (0716.S.15)

Students will describe the structures and functions of the eye and ear and discuss common disorders of each.

The Eye and The Ear Objectives

Students will:

- 0716.15.1 Describe the functions of sensory receptors.
- 0716.15.2 Identify the parts of the eye and describe their functions.
- 0716.15.3 Trace a pathway of light from outside to the brain.
- 0716.15.4 Identify the parts of the ear and describe their function.
- 0716.15.5 Trace the pathway of sound from entrance into the ear and the brain.
- 0716.15.6 Describe common disorders of the eye and the ear.

Standard 16: Reproductive System (0716.S.16)

Students will describe the structures and functions of the reproductive system, including common disorders.

Reproductive System Objectives

Students will:

- 0716.16.1 Explain meiosis.
- 0716.16.2 Explain the process of fertilization.
- 0716.16.3 Identify the organs of the female reproductive system and explain their function.
- 0716.16.4 Describe the structure and function of the breast.
- 0716.16.5 Identify the organs of the male reproductive system and explain their function.
- 0716.16.6 Describe the stages of the menstrual cycle.
- 0716.16.7 Define zygotes, embryo and fetus.
- 0716.16.8 Explain menopause and the changes which occur during this time.
- 0716.16.9 Discuss infertility, artificial insemination, and in-vitro fertilization.
- 0716.16.10 List common disorders of the reproductive system.

Standard 17: Genetics (0716.S.17)

Students will define genetics and human genetic disorders.

Genetics Objectives

Students will:

- 0716.17.1 Define genetics and human genetic disorders.
- 0716.17.2 Discuss the two main types of mutation.
- 0716.17.3 Describe various genetic disorders.
- 0716.17.4 Discuss genetics counseling and genetic engineering.

Clinical Concepts

WVEIS Code 0717

Students will be introduced to safe work practices for the prevention of illness or injury to clients, co-workers, and self. The course includes a study of the basic structures and major functions of the human body and common disorders associated with each body system. Also included is instruction on disease transmission/prevention, standard precautions, OSHA standards, and principles of sterile technique. In this course, students begin study in a specialized occupational area and build a foundation for more complex and correlated clinical practice within Diversified Clinical Applications (0719). Students are encouraged to participate in a Career and Technical Students Organization (CTSO). *For students desiring preparation for an entry level occupation in health care and who plan to enroll in Diversified Clinical Applications (0719).

Standard 1: Fire Safety (0717.S.1)

Students will demonstrate knowledge of fire safety in the clinical areas.

Fire Safety Objectives

Students will:

- 0717.1.1 Identify components necessary for the ignition of a fire.
- 0717.1.2 Demonstrate the proper use of the fire extinguisher.
- 0717.1.3 Analyze methods to prevent fire and electrical hazards.
- 0717.1.4 Follow emergency procedures and protocols.

Standard 2: Environmental Safety (0717.S.2)

Students will demonstrate knowledge of environmental safety hazards in the clinical setting.

Safety Objectives

Students will:

- 0717.2.1 Identify common safety hazards in health care facilities.
- 0717.2.2 Describe common equipment associated with accidents and methods of prevention.
- 0717.2.3 Identify routine precautions to be used in oxygen therapy.
- 0717.2.4 Interpret guidelines in the use of patient/resident safety devices.

Standard 3: Body Mechanics (0717.S.3)

Students will demonstrate knowledge and skill in the use of body mechanics.

Body Mechanics Objectives

Students will:

- 0717.3.1 Define terms related to body mechanics.
- 0717.3.2 Apply principles of body mechanics, such as proper lifting techniques.
- 0717.3.3 Choose appropriate mechanical lifting devices in given situations.
- 0717.3.4 Transport patient/resident by wheelchair and stretcher.
- 0717.3.5 Identify safety precautions to be used when positioning and transferring patient/resident.

Standard 4: Body Structure and Function (0717.S.4)

Students will demonstrate knowledge of basic structure and function for each system of the human body in health and common disorders for each.

Body Structure and Function Objectives

Students will:

- 0717.4.1 Identify structures and functions of major body systems.

- 0717.4.2 Explain the integration between body systems.
- 0717.4.3 Define, pronounce, and spell commonly used terms and abbreviations.
- 0717.4.4 Compare the relationship of wellness to healthy structures and functions of body systems.
- 0717.4.5 Identify health risk factors and how these influence disease process.
- 0717.4.6 Describe common disorders in body systems and their diagnosis and treatment.

Standard 5: Disease Transmission and Prevention (0717.S.5)

Students will demonstrate knowledge of principles of disease transmission and prevention.

Disease Transmission and Prevention Objectives

Students will:

- 0717.5.1 Match terms related to infection control with their definitions.
- 0717.5.2 Describe the function of the immune system, including the appropriate tissues and organs.
- 0717.5.3 Recognize clinical situations that involve potential growth of microorganisms.
- 0717.5.4 Identify common nosocomial infections.
- 0717.5.5 Identify common pathogenic microorganisms.
- 0717.5.6 Apply the knowledge of the chain of infection to clinical practice.
- 0717.5.7 Apply proper hand washing technique to clinical situations.
- 0717.5.8 Compare the effectiveness of methods used to destroy bacteria.
- 0717.5.9 Select appropriate personal protective equipment and clothing for specific tasks.
- 0717.5.10 Don and remove Personal Protective Equipment (PPE).
- 0717.5.11 Summarize and differentiate the isolation categories established by the Centers for Disease Control (CDC).
- 0717.5.12 Describe methods of handling biohazard equipment, supplies, specimens and waste.
- 0717.5.13 Apply OSHA standards as established for clinical situations.
- 0717.5.14 Describe the components of an exposure incident.
- 0717.5.15 Complete an incident report.
- 0717.5.16 Recognize symbols for biohazards and standard precautions.

Standard 6: Sterile Technique (0717.S.6)

Students will apply principles of sterile technique.

Sterile Techniques Objectives

Students will:

- 0717.6.1 Compare and contrast methods of sterilization.
- 0717.6.2 Practice and maintain a clean and healthy environment.
- 0717.6.3 Compare and contrast medical asepsis and surgical asepsis.
- 0717.6.4 Demonstrate prescribed techniques as related to sterility.
- 0717.6.5 Assess and initiate proper storage methods and monitor expiration periods for sterilized equipment.
- 0717.6.6 Assist with sterile procedures, including but not limited to setting up a sterile field, donning sterile gloves, and transfer techniques.

Standard 7: Specialty Area Procedure (0717.S.7)

Students will implement procedures within the scope of specialty area.

Specialty Area Procedures Objectives

Students will:

- 0717.7.1 Utilize appropriate supplies and equipment.
- 0717.7.2 Maintain and calibrate equipment.
- 0717.7.3 Explain specialty/specific procedures and provide related information.

- 0717.7.4 Perform procedures according to industry standards and manufacturers directions.
- 0717.7.5 Perform procedures in a logical and sequential manner.
- 0717.7.6 Customize, adjust or modify procedures as needed and within established guidelines.
- 0717.7.7 Document procedures accurately.
- 0717.7.8 Recognize and report abnormal findings.

Standard 8: Technology (0717.S.8)

Students will access and use electronically produced information to master course standards.

Technology Objectives

Students will:

- 0717.8.1 Describe computer applications currently being used in today's health care setting.
- 0717.8.2 Use software and hardware to practice and master concepts identified in the course.
- 0717.8.3 Use the internet as a resource/research tool.

Standard 9: CPR (0717.S.9)

Students will demonstrate knowledge and skill in performing health care provider/professional level Cardiopulmonary Resuscitation.

CPR Objectives

Students will:

- 0717.9.1 Analyze the differences in the performance of CPR as it pertains to the health professional.
- 0717.9.2 Secure certification in CPR for the Professional Rescuer from American Red Cross or Health Care Provider (HCP) from American Heart Association.

Standard 10: Student Organizations (0717.S.10)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0717.10.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0717.10.2 Apply parliamentary procedure in organizational meetings.
- 0717.10.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0717.10.4 Take part in local, state, and national health care and education projects.

Diversified Clinical Applications

WVEIS Code 0719

Students will be provided with entry-level knowledge and skills needed to function in a variety of health care settings. Students are required to choose a specialized occupational area for in-depth classroom study and must complete a minimum of 55-100 hours in a correlated (work-based) clinical experience as part of the course. Specialized courses with more in-depth instructional standards and objectives have been established for specific occupations. These appear in the Program Guide for Health Occupations Education in West Virginia. All standards and objectives must be mastered before students attain established credentials and/or industry validation. Students are encouraged to participate in a Career and Technical Student Organization (CTSO). *For students who are preparing for entry level employment in a health occupation.

Standard 1: Employment (0719.S.1)

Students will be prepared for entry-level employment in a health occupation.

Employment Objectives

Students will:

- 0719.1.1 Achieve course objectives for classroom study in a specialized occupational area.
- 0719.1.2 Achieve objectives for clinical internships established for occupational specializations, i.e., dental assisting.
- 0719.1.3 Meet entry-level requirements for certification or registration in a health occupation.

Standard 2: Technology (0719.S.2)

Students will access and use electronically produced information and computers within the health care system.

Technology Objectives

Students will:

- 0719.2.1 Utilize a computer to input, store and retrieve information.
- 0719.2.2 Utilize software, hardware, and the Internet to practice and master course standards.

Standard 3: Clinical Internship (0719.S.3)

Students will participate in a clinical internship.

Clinical Internship Objectives

Students will:

- 0719.3.1 Demonstrate a working knowledge of externship eligibility requirements.
- 0719.3.2 Comply with required health regulations such as proof of physical examination and immunization status.
- 0719.3.3 Provide proof of personal health insurance.
- 0719.3.4 Wear proper clinical attire.
- 0719.3.5 Maintain academic standards in classroom theory and lab.
- 0719.3.6 Report to clinical site on time and ready to work.
- 0719.3.7 Notify clinical site and instructor when absent.
- 0719.3.8 Conform to policies regarding performance of skills and scope of responsibility.
- 0719.3.9 Correctly and safely perform entry-level procedures under supervision of an instructor or clinical site preceptor.
- 0719.3.10 Request assistance or clarification as needed.
- 0719.3.11 Maintain professional standards including client confidentiality.
- 0719.3.12 Organize and effectively manage time.
- 0719.3.13 Complete documentation required of clinical internship accurately.

- 0719.3.14 Participate in clinical internship evaluation process.
- 0719.3.15 Utilize facility resources, i.e., other staff members, manuals, and training updates.

Standard 4: Job Seeking and Keeping (0719.S.4)

Students will identify strategies for job seeking and job keeping.

Job Seeking and Keeping Objectives

Students will:

- 0719.4.1 Identify the steps involved in job analysis and research.
- 0719.4.2 Analyze various career options and the preparation required for them.
- 0719.4.3 Complete a job application, cover letter and resume.
- 0719.4.4 Demonstrate skills related to the interviewing process.
- 0719.4.5 Exhibit personal skills such as attendance, time management, and individual responsibility.
- 0719.4.6 Maintain professional conduct and appearance.
- 0719.4.7 Utilize analytical skills to solve problems and make decisions.
- 0719.4.8 Recognize attitudes and behaviors necessary for establishing successful working relationships.
- 0719.4.9 Judge alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, gender, handicap, or age.
- 0719.4.10 Recognize and adhere to the chain of command/lines of authority in the work setting.
- 0719.4.11 Exhibit characteristics necessary for advancement.
- 0719.4.12 Recognize the importance of participating in continuing education programs.
- 0719.4.13 Manage conflict within the workplace through consideration of other's points of view.
- 0719.4.14 Prepare a letter of resignation.
- 0719.4.15 Practice team membership skills such as leadership and cooperation.
- 0719.4.16 Identify the importance of and develop good customer relation skills.

Standard 5: Student Organizations (0719.S.5)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organization Objectives

Students will:

- 0719.5.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0719.5.2 Apply parliamentary procedure in organizational meetings.
- 0719.5.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0719.5.4 Take part in local, state, and national health care and education projects.

ECG/Phlebotomy

WVEIS Code 0720

Upon successful completion of this course students will master competencies consistent with entry-level career responsibilities in the areas of ECG Technician and Phlebotomist. Course components will focus upon an introduction to the health care delivery system, legal responsibilities, infection control and safety, communication, quality assurance, as well as theory and procedures related to the performance of phlebotomy and electrocardiography. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Health Care Delivery System (0720.S.1)

Students will describe the health care delivery system and the roles and qualifications of phlebotomist and ECG technicians.

Health Care Delivery System Objectives

Students will:

- 0720.1.1 Describe the various hospital departments and their major functions in which the health care worker may interact in his/her role.
- 0720.1.2 Identify the health care providers in hospitals, clinics and physician's office.
- 0720.1.3 Describe the organizational structure of the overall hospital structure.
- 0720.1.4 Define the role of the clinical lab and the electrocardiography department in health care.
- 0720.1.5 Define the phlebotomist's role in clinical laboratory medicine.
- 0720.1.6 Discuss the roles of clinical laboratory personnel and their qualifications for these professional positions.
- 0720.1.7 Define the ECG technician's role in the clinical facility.
- 0720.1.8 Discuss the roles of the ECG technician and qualifications for the career option.
- 0720.1.9 Define professionalism as it relates to a phlebotomist and ECG technician.

Standard 2: Laboratory and ECG Departments In A Health Care System (0720.S.2)

Students will describe common procedures performed by the laboratory and ECG departments and how they are used to assess body function and disease.

Laboratory and ECG Departments In A Health Care System Objectives

Students will:

- 0720.2.1 List the types of laboratory procedures performed in the various sections of the Clinical Laboratory and ECG Departments.
- 0720.2.2 Describe how laboratory testing and cardiography is used to assess body functions and disease.
- 0720.2.3 Define medical terminology and abbreviations commonly used in the laboratory and cardiography department.

Standard 3: Legal Terminology Associated with Phlebotomy (0720.S.3)

Students will effectively use legal terminology associated with the practice of phlebotomy.

Legal Terminology Associated with Phlebotomy Objectives

Students will:

- 0720.3.1 Define negligence, malpractice, assault, battery, liability, and Respondent Superior.
- 0720.3.2 Compare and contrast legal responsibilities and action of sample scenarios.
- 0720.3.3 Identify the scope of practice of the phlebotomist and ECG technicians.
- 0720.3.4 Describe common ethical standards within the health care profession.

Standard 4: Infection Control and Safety (0720.S.4)

Students will describe infection control and safety policies and procedures necessary within the clinical setting.

Infection Control and Safety Objectives

Students will:

- 0720.4.1 Identify policies and procedures for maintaining safety in the laboratory and during ECG procedures.
- 0720.4.2 Identify and discuss the modes of transmission of infection and methods of prevention.
- 0720.4.3 Discuss the universal precautions outlined by the Centers for Disease Control (CDC).
- 0720.4.4 Perform proper infection control techniques, such as hand washing, gowning, gloving, masking, and double bagging.
- 0720.4.5 Define and discuss hospital-acquired infections.
- 0720.4.6 Describe the electrical, radiation, biological hazards and fire safety procedures used in the hospital, including the clinical laboratory.
- 0720.4.7 Diagram the following hazard symbols: Radiation, biohazard, toxic or poison, carcinogen, corrosive, flammable, and NFPA chemical hazard.
- 0720.4.8 Identify and properly label biohazard specimens.
- 0720.4.9 Describe the safety measures that should be followed at all times by a phlebotomist when collecting or transporting a patient's specimen.

Standard 5: Communications, Personal and Patient Interaction (0720.S.5)

Students will describe personal and professional communication in relationship to standards of practice.

Communications, Personal and Patient Interaction Objectives

Students will:

- 0720.5.1 Compare and contrast legal responsibilities and action of sample scenarios.
- 0720.5.2 Be able to explain the importance of maintaining patient confidentiality.
- 0720.5.3 Describe the proper manner for greeting and interacting with a patient.
- 0720.5.4 Explain the major points in interviewing a patient or a patient's representative in preparation for obtaining specimens.
- 0720.5.5 Describe instructions to be given to patients in preparation for routine blood collection, glucose testing, bleeding times and other procedures normally performed by the phlebotomist.
- 0720.5.6 Describe instructions to be given to patients in preparation for various electrocardiography procedures.
- 0720.5.7 Describe and discuss techniques for dealing with family and visitors during the collection of specimens and electrocardiography procedures.
- 0720.5.8 Describe the Patient's Bill of Rights as it applies to the clinical laboratory personnel and ECG technicians.
- 0720.5.9 Discuss the importance of appearance and grooming for phlebotomists and ECG technicians.
- 0720.5.10 Discuss the telephone within the context of extra-laboratory communication.
- 0720.5.11 List and define rules of telephone etiquette appropriate for the clinical setting.
- 0720.5.12 Discuss the role of the computer within the laboratory and ECG department.

Standard 6: Quality Assurance in Laboratory Testing (0720.S.6)

Students will identify policies and procedures used in monitoring quality assurance in the clinical laboratory.

Quality Assurance in Laboratory Testing Objectives

Students will:

- 0720.6.1 Describe the system for monitoring quality assurance in the collection and transportation of laboratory testing.

- 0720.6.2 Identify policies and procedures used in the clinical laboratory to assure quality in obtaining of blood specimens.

Standard 7: Specimen Transport and Specimen Processing (0720.S.7)

Students will describe criteria and responsibilities required in the transportation and processing of specimens.

Specimen Transport and Specimen Processing Objectives

Students will:

- 0720.7.1 Describe the laboratory criteria for identifying an appropriate request for specimen collection.
- 0720.7.2 Relate legal responsibilities of the laboratory and phlebotomist to the need for physicians' request for all specimen collecting and testing.
- 0720.7.3 Identify methods for transporting and processing blood specimens for routine and special testing within the health care system.
- 0720.7.4 Explain methods for processing and transporting specimens for testing at reference laboratories.
- 0720.7.5 Describe the potential clerical and technical errors that may occur during specimen processing.
- 0720.7.6 Explain the general effects of time on test quality and patient care in regard to processing and transporting of specimens.
- 0720.7.7 Describe the conditions that must be met if blood specimens and laboratory tests are to be used as legal evidence.

Standard 8: Collection Equipment and Precautions (0720.S.8)

Students will identify the equipment needed in the collection of specimens and precautions during these procedures.

Collection Equipment and Precautions Objectives

Students will:

- 0720.8.1 Identify the various types of additives used in blood collection, and explain the reasons for their use.
- 0720.8.2 Identify the evacuated tube color codes associated with the additives.
- 0720.8.3 List and select the types of equipment needed to collect blood by venipuncture, capillary, and arterial punctures.
- 0720.8.4 List the supplies that should be carried on a phlebotomist's tray.
- 0720.8.5 Identify special precautions necessary during blood collections.
- 0720.8.6 Describe substances that can interfere in clinical analysis of blood constituents.
- 0720.8.7 Identify the mode of action for each anticoagulant.
- 0720.8.8 Define the following terms and list possible causes of each of these situations:
Demolished Sample, Short Draw, Clotting in Whole Blood Tubes, Lipemic, and Icteric.
- 0720.8.9 List the effects of the tourniquet, hand squeezing, and heating pads on capillary and venipuncture.
- 0720.8.10 Define the following terms and list appropriate first aid for each of these circumstances:
Petechiae, Hematoma, Infection, Syncope, Emesis, Osteomyelitis, and Sepsis.
- 0720.8.11 Identify a winged infusion set.
- 0720.8.12 Define situations appropriate for the use of a winged infusion needle.
- 0720.8.13 Identify a syringe and explain when you would use this technique.

Standard 9: Specimen Collection Procedures (0720.S.9)

Students will describe and apply specimen collection procedures.

Specimen Collection Procedures Objectives

Students will:

- 0720.9.1 Define "chain of custody" as it relates to blood specimens collected to rule out illegal drug use.
- 0720.9.2 Define the following terms: TDM, Peak Levels, Trough Levels, Random Sampling, Toxic Levels, Intramuscularly, and Intravascular.
- 0720.9.3 List the steps used in specimen collection techniques for glucose testing: 2 hour, random, fasting, and glucose tolerance testing.
- 0720.9.4 Correctly time and label specimen.
- 0720.9.5 List the steps in the procedure for blood alcohol specimen collection.
- 0720.9.6 Describe the phlebotomist's role in the collection of urine specimens for routine urinalysis, culture and sensitivity, and timed specimens.
- 0720.9.7 Perform a multi-draw venipuncture.
- 0720.9.8 Appropriately approach the steps in a skin puncture procedure.
- 0720.9.9 Appropriately identify the patient.
- 0720.9.10 List and perform the steps in a skin puncture procedure.
- 0720.9.11 List and perform the steps in a venipuncture.
- 0720.9.12 Appropriately collect, label, and transport specimens for the following analyses: cold agglutinins, type, and antibody screen, cross match and blood cultures.

Standard 10: Circulatory System (0720.S.10)

Students will describe the anatomy and physiology of the circulatory system.

Circulatory System Objectives

Students will:

- 0720.10.1 Describe the structures of the heart.
- 0720.10.2 Explain the pumping action of the heart.
- 0720.10.3 Diagram and describe the flow of blood through the heart.
- 0720.10.4 Distinguish between systemic and pulmonary circulation.
- 0720.10.5 List the components of the conduction system.
- 0720.10.6 Give the sequence of impulse origination of the conduction system.
- 0720.10.7 State four properties of the cardiac cells.
- 0720.10.8 Name the four chambers of the heart.
- 0720.10.9 Name the four valves of the heart, give their location, and describe how they function.
- 0720.10.10 Define blood and lists its components.
- 0720.10.11 Label each blood vessel.
- 0720.10.12 Identify structures of the heart, valves, blood vessels, and conduction system on diagrams.

Standard 11: Basic Electrophysiology (0720.S.11)

Students will describe the basic electrophysiology of the heartbeat and dysrhythmias associated with pathophysiology.

Basic Electrophysiology Objectives

Students will:

- 0720.11.1 Trace the electrical conduction pathway of the heart and explain the location where they in relation to the heartbeat.
- 0720.11.2 Explain each of the conduction pathway component's relationship to the heartbeat.
- 0720.11.3 Label the waveforms and segments of the heartbeat.
- 0720.11.4 List causes of dysrhythmias.
- 0720.11.5 Define isoelectric line.

Standard 12: Electrocardiography (0720.S.12)

Students will describe basic concepts used in electrocardiography.

Electrocardiography Objectives

Students will:

- 0720.12.1 Explain the difference between electrocardiogram and electrocardiograph.
- 0720.12.2 Explain the reasons for performing an ECG.
- 0720.12.3 Explain the universal marking codes for a manual 12 lead ECG and the auto 12 lead.
- 0720.12.4 Diagram the limb, augmented, and chest leads of an ECG.
- 0720.12.5 Recognize and correct problems associated in the performance of an ECG tracing.
- 0720.12.6 Describe and list the placement of ECG electrodes on the body.
- 0720.12.7 Explain the guide used in interpreting an ECG strip.

Standard 13: Electrocardiography Paper (0720.S.13)

Students will understand and interpret the electrocardiography paper.

Electrocardiography Paper Objectives

Students will:

- 0720.13.1 Describe the ECG paper.
- 0720.13.2 Give the recording speed of the ECG paper.
- 0720.13.3 Explain how the time and voltage of the ECG tracing is determined.
- 0720.13.4 Calculate the rate of patient's heartbeat on an ECG tracing.

Standard 14: Electrocardiography Machine (0720.S.14)

Students will operate and maintain the electrocardiography equipment.

Electrocardiography Machine Objectives

Students will:

- 0720.14.1 Clean and maintain ECG machine.
- 0720.14.2 List the supplies and other equipment used in performance of an ECG.
- 0720.14.3 List the parts of an ECG machine and give the purpose of each.
- 0720.14.4 Define the difference between electrode and sensor.

Standard 15: Leads (0720.S.15)

Students will describe the leads on the 12 lead ECG and demonstrate correct placement.

Leads Objectives

Students will:

- 0720.15.1 Describe the 12 leads in a tracing and explain the difference between unipolar and biopolar.
- 0720.15.2 Identify the color of the limb and chest leads for a standard 12 lead ECG.
- 0720.15.3 Describe the principle of Einthoven's triangle and diagram the three leads used.
- 0720.15.4 List the augmented limb leads and be able to diagram on a chart.
- 0720.15.5 Name the precordial or chest leads in order and explain what they measure.
- 0720.15.6 Explain Einthoven's Law and what it detects.
- 0720.15.7 List the frontal and horizontal leads of an ECG.

Standard 16: Electrocardiograph Technique (0720.S.16)

Students will perform an ECG according to documented performance standards.

Electrocardiograph Technique Objectives

Students will:

- 0720.16.1 Describe the universal standard of ECG measurement.
- 0720.16.2 Identify the patient using proper procedure.
- 0720.16.3 Identify yourself and explain procedure to the patient.

- 0720.16.4 Document patient's medication history and vital signs.
- 0720.16.5 Incorporate relaxation methods to make the patient comfortable.
- 0720.16.6 Place the patient into the proper recording position.
- 0720.16.7 Prepare the patient's skin before placement of leads.
- 0720.16.8 Recognize and place sensors in proper positions on the patient.
- 0720.16.9 Connect the cable wires to sensors in proper sequence.
- 0720.16.10 Acquire ECG tracing using universal standards.
- 0720.16.11 Recognize, describe and correct artifacts on the ECG tracing.
- 0720.16.12 Describe how to identify the tracing after completion.
- 0720.16.13 Document any variation from a normal tracing or any information useful to the interpreting physician.
- 0720.16.14 Document any physical or extrinsic situation that could alter ECG vector or standard lead placement.

Standard 17: Quality Assurance in the Performance of an ECG (0720.S.17)

Students will identify procedures used in assuring quality in the performance of an ECG.

Quality Assurance in the Performance of an ECG Objectives

Students will:

- 0720.17.1 Verify information on ECG tracing.
- 0720.17.2 Recognize and remove artifacts.
- 0720.17.3 Identify proper supplies and equipment.
- 0720.17.4 Describe the documentation of variation from normal ECG tracing.
- 0720.17.5 Correct standardization of voltage.
- 0720.17.6 Prioritize time and follow proper sequence of events.

Standard 18: Utilization of ECG Tracing (0720.S.18)

Students will interpret ECG tracings.

Utilization of ECG Tracing Objectives

Students will:

- 0720.18.1 Identify lethal arrhythmias.
- 0720.18.2 Describe proper reporting of lethal arrhythmias immediately to a nurse or physician for diagnosis and treatment.
- 0720.18.3 List criteria for a normal ECG.
- 0720.18.4 Describe utilization of the components of rhythm strip analysis.
- 0720.18.5 Define the following terms associated with the ECG training: normal sinus rhythm, sinus arrhythmia, sinus arrest, bradycardia and tachycardia.

Standard 19: Technology (0720.S.19)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0720.19.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0720.19.2 Utilize the Internet as a resource/research tool.

Standard 20: Student Organizations (0720.S.20)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0720.20.1 Participate in Health Occupations Students of American (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0720.20.2 Apply parliamentary procedure in organizational meetings.
- 0720.20.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0720.20.4 Take part in local, state, and national health care and education projects.

Medical Terminology

WVEIS Code 0721

Through the study of medical terminology the student will be introduced to the language of medicine. Students will gain an understanding of basic elements, rules of building and analyzing medical words, and medical terms associated with the body as a whole. Utilizing a systems approach, the student will define, interpret, and pronounce medical terms relating to structure and function, pathology, diagnosis, clinical procedures, oncology, and pharmacology. In addition to medical terms, common abbreviations applicable to each system will be interpreted.

Standard 1: Basic Elements of Medical Words (0721.S.1)

Students will effectively use basic medical elements.

Basic Elements of Medical Words Objectives

Students will:

- 0721.1.1 Identify the four elements that are used to form medical words.
- 0721.1.2 Analyze medical words by identifying their component elements.
- 0721.1.3 Describe the basic rules for building medical words.
- 0721.1.4 Explain the basic steps to defining medical words.
- 0721.1.5 Analyze the position and role of the suffix when used in a medical term.
- 0721.1.6 Identify and pronounce surgical, diagnostic, and symptomatic suffixes.
- 0721.1.7 Analyze suffixes to determine their part of speech.
- 0721.1.8 Define a diminutive suffix.
- 0721.1.9 Analyze the position and role of the prefix when used in building medical terms.
- 0721.1.10 Identify and pronounce prefixes including those indicating position, number, measurement, negation, and direction.

Standard 2: Medical Terminology Associated With the Body As A Whole (0721.S.2)

Students will demonstrate use of medical terminology associated with the body as a whole.

Medical Terminology Associated With the Body As A Whole Objectives

Students will:

- 0721.2.1 Identify the medical terms associated with the levels of organization of structure and function within the human body.
- 0721.2.2 Demonstrate an understanding of the disease process by defining medical terms used in pathology.
- 0721.2.3 Define and pronounce the medical terms used in the anatomical planes of the body, body cavities, and diagnostic imaging.
- 0721.2.4 Analyze medical terms indicating directional position.
- 0721.2.5 Interpret the meaning of abbreviations used to indicate body systems, direction, and diagnostic imaging.

Standard 3: Medical Terminology Associated with Body Systems (0721.S.3)

Students will effectively use medical terminology associated with body systems.

- Integumentary
- Gastrointestinal
- Respiratory
- Cardiovascular
- Blood and Lymphatic
- Musculoskeletal
- Genitourinary

- Reproductive
- Endocrine
- Nervous
- Special Senses

Medical Terminology Associated with Body Systems Objectives

The student will:

- 0721.3.1 Define and pronounce medical terms used to identify the basic structure and function.
- 0721.3.2 Interpret the meaning of combining forms, suffixes, and prefixes.
- 0721.3.3 Define and discuss medical terms associated with basic pathology.
- 0721.3.4 Interpret commonly used diagnostic and symptomatic medical terms.
- 0721.3.5 Identify and define medical terms used as related to surgical, diagnostic imaging, and laboratory procedures.
- 0721.3.6 Define medical terms associated with clinical procedures used in the process of examination and evaluation of structure and function.
- 0721.3.7 Analyze medical terms related to oncology.
- 0721.3.8 Describe medical terms used in pharmacology to treat common disorders.
- 0721.3.9 Interpret the meaning of common abbreviations.

Fundamentals of Medical Reimbursement

WVEIS Code 0722

Within this course students will focus on policies and procedures necessary for medical reimbursement. Students will gain a working knowledge of the systems theory in health care. Additional components of this course include an introduction to Medical Office Coding, ICD-9-CM, CPT-4 Coding, CPT-4 Sections, and auditing process. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Health Care Systems (0722.S.1)

Students will describe and apply the systems theory to health care.

Health Care Systems Objectives

Students will:

- 0722.1.1 Describe systems theory and its components.
- 0722.1.2 Construct a general systems model using inputs, throughputs and feed back loops.
- 0722.1.3 Explain the function of systems theory model.
- 0722.1.4 Describe how systems theory relates to health care.
- 0722.1.5 List the factors that affect the health care system and predict their influence.
- 0722.1.6 Construct a systems model depicting the interdependence of health care professionals.
- 0722.1.7 Analyze the cause and effect of change in the health care system based on the influence of: technology, epidemiology, bio-ethics, socio-economics, and various forms of complimentary (non-traditional) medicine.

Standard 2: Medical Terminology (0722.S.2)

Students will understand basic medical terminology necessary to interpret and submit medical insurance claims.

Medical Terminology Objectives

Students will:

- 0722.2.1 Interpret commonly used medical roots, prefixes and suffixes.
- 0722.2.2 Interpret commonly used abbreviations.
- 0722.2.3 Incorporate standard medical terms and abbreviations in written and oral communications to interpret, transcribe, and communicate information, data, and observations.

Standard 3: Introduction to Medical Office Coding (0722.S.3)

Students will discuss medical office coding principles.

Medical Office Coding Objectives

Students will:

- 0722.3.1 Describe the evolution of medical insurance in this country.
- 0722.3.2 Explain the significance of diagnosis-related groups.
- 0722.3.3 Define coding and discuss its origin and function.
- 0722.3.4 Categorize the types of codes used in health care.
- 0722.3.5 Examine and analyze the documentation tools used in the coding process.
- 0722.3.6 Demonstrate the proper technique for determining the physician's diagnosis.

Standard 4: ICD-9-CM Coding (0722.S.4)

Students will interpret and apply basic concepts for ICD-9-CM coding.

ICD-9-CM Coding Objectives

Students will:

- 0722.4.1 Summarize the ICD-9-CM code book format.
- 0722.4.2 Describe the symbols, punctuation, and abbreviations used in ICD-9-CM codes.
- 0722.4.3 Discuss the steps for accurate coding from the ICD-9-CM code book.
- 0722.4.4 Describe the HCFA guideline for ICD-9-CM coding.
- 0722.4.5 Explain the purpose for V codes and E codes.
- 0722.4.6 Use the Drug and Chemical Tables found in the ICD-9-CM code book.
- 0722.4.7 Demonstrate the procedure for coding special complexities.

Standard 5: CPT-4 Coding (0722.S.5)

Students will interpret and apply basic concepts of CPT-4 coding.

CPT-4 Coding Objectives

Students will:

- 0722.5.1 Demonstrate the proper technique for determining codeable procedures and services.
- 0722.5.2 Summarize the CPT-4 code book format.
- 0722.5.3 Identify and understand the signs and symbols used in the CPT-4 code book.
- 0722.5.4 Discuss the use of modifiers to CPT-4 codes.
- 0722.5.5 Compare starred, global, and unlisted CPT-4 codes.

Standard 6: CPT-4 Sections (0722.S.6)

Students will interpret and apply CPT-4 code sections.

CPT-4 Sections Objectives

Students will:

- 0722.6.1 Apply the concepts of evaluation and management coding.
- 0722.6.2 Understand and apply the principle elements of anesthesia coding.
- 0722.6.3 Apply the surgery coding guidelines.
- 0722.6.4 Identify types of pathology services and explain proper application of coding rules for each category of services.
- 0722.6.5 Identify the proper coding guidelines for each subsection of the medicine services.
- 0722.6.6 Discuss the rules and application of modifiers to the coding process.
- 0722.6.7 Code a sample claim form.

Standard 7: Reimbursement and Auditing (0722.S.7)

Students will describe reimbursement and auditing processes.

Reimbursement and Auditing Objectives

Students will:

- 0722.7.1 Identify and describe the different reimbursement methods.
- 0722.7.2 Summarize the purpose of third party contracts and their effect on coding.
- 0722.7.3 Explain the components for payment calculations and reimbursement calculations.
- 0722.7.4 Abstract information from the patients' medical records and complete claim forms.
- 0722.7.5 Recognize internal and external obstacles to accurate and timely reimbursement.
- 0722.7.6 Describe the auditing process, including the purpose of audits.

Standard 8: Technology (0722.S.8)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0722.8.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0722.8.2 Utilize the Internet as a resource/research tool.

Standard 9: Student Organizations (0722.S.9)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0722.9.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0722.9.2 Apply parliamentary procedure in organizational meetings.
- 0722.9.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0722.9.4 Take part in local, state, and national health care and education projects.

Understanding Human Behavior

WVEIS Code 0725

Within this course, students will learn basic principles of human behavior. As a result of this knowledge, students should gain self-understanding and improved interpersonal relationship skills. The end goal will be the delivery of conscientious, personalized care which conveys respect and sincerity. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Challenges and Satisfaction of Being a Health Care Provider (0725.S.1)

Students will develop an awareness of the realities of a health career in relationship to challenges, responsibilities, problems, and satisfactions.

Challenges and Satisfaction of Being a Health Care Provider Objectives

Students will:

- 0725.1.1 Compare the satisfaction gained from the approval of others to that of an inner feeling of pride from knowing you performed your job well.
- 0725.1.2 Discuss what is meant for the health care provider to set standards of excellence.
- 0725.1.3 Explain the value and challenge to provide health care that promotes the patient's well-being.
- 0725.1.4 Define "mediocre."
- 0725.1.5 Correlate the habit of "just getting by" to that of "doing your best" within the role of a Health Occupations Education student and the future role of a health care provider.
- 0725.1.6 Explain the concept of "empowerment."
- 0725.1.7 Discuss methods by which the health care provider can contribute to the patient's feeling of empowerment.

Standard 2: Philosophy of Individual Worth and Self-Understanding (0725.S.2)

Students will explain the philosophy of individual worth and self-understanding and apply it to the provider/patient relationships.

Philosophy of Individual Worth and Self-Understanding Objectives

Students will:

- 0725.2.1 Define the "Philosophy of Individual Worth."
- 0725.2.2 Discuss the ethical role of the health care provider to provide quality service in relationship to patient diversity.
- 0725.2.3 Compare and contrast characteristics and beliefs about health care that may be exhibited by patients from both the poverty and affluent classes.
- 0725.2.4 Describe how "prejudice" can influence the practice of the health care worker.
- 0725.2.5 List strategies/standards of care for applying a philosophy of individual worth to patient relationships.
- 0725.2.6 Explain the relationship between learning and a change in behavior.
- 0725.2.7 Discuss the achievement of self-understanding in relationship to willingness to change, strengths and weaknesses, adaptation and perception.

Standard 3: Influences on Behavior (0725.S.3)

Students will describe factors that influence behavior.

Influences on Behavior Objectives

Students will:

- 0725.3.1 Explain the three forces that interact to create a specific individual.
- 0725.3.2 Explain the role of the gene as the basis for individuality.
- 0725.3.3 Discuss the health care implications in genetic testing and gene therapy.

- 0725.3.4 List ways in which the developmental process can be influenced during the prenatal and childhood period.
- 0725.3.5 Describe the four dimensions of the developmental process.
- 0725.3.6 List aspects included in one's physical and social environment that influence development.
- 0725.3.7 Explain the relationship between one's value system and one's standards of behavior.
- 0725.3.8 Compare responsibility for behavior during childhood and the adult period.
- 0725.3.9 Define "rapport" and how it can influence health care.
- 0725.3.10 List and describe the five levels of human need as proposed by Maslow.
- 0725.3.11 Explain the process by which a behavior is formed.
- 0725.3.12 Define "compensation."

Standard 4: Self-Approval and Acceptance (0725.S.4)

Students will explain the concepts of self-approval and acceptance and the influence each have on human behavior.

Self-Approval and Acceptance Objectives

Students will:

- 0725.4.1 Define "self-concept."
- 0725.4.2 Define "self-esteem."
- 0725.4.3 Describe the effects of positive/success and negative/failure relationships on self-concepts and self-esteem.
- 0725.4.4 Explain the six step method of the problem-solving process.
- 0725.4.5 Discuss the relationship between "belonging" and "motivation."
- 0725.4.6 Define the "martyr complex."
- 0725.4.7 Explain the correlation between approval and disapproval in relationship to the importance felt about the person giving it.
- 0725.4.8 Describe behaviors that accompany the effort to meet the need for approval, acceptance or appreciation.
- 0725.4.9 Describe the role of conformity in acceptance.
- 0725.4.10 Differentiate between sympathy and empathy.

Standard 5: Influence of Emotions on Behavior (0725.S.5)

Students will explain how emotions influence behavior and the use of this knowledge in patient relationships.

Influence of Emotions on Behavior Objectives

Students will:

- 0725.5.1 Define emotions.
- 0725.5.2 Describe the physiological effects of emotions.
- 0725.5.3 Define "stress", "mind talk" and "stressor."
- 0725.5.4 Name essential characteristics of unconditional love.
- 0725.5.5 Explain five factors that influence the formation of emotional patterns.
- 0725.5.6 Explain the difference between the terms "suppressed" and "repressed."
- 0725.5.7 Define "temperament."
- 0725.5.8 Describe five guidelines for using emotions constructively.
- 0725.5.9 Define "self-control" and how self-control can be increased.
- 0725.5.10 Explain the meaning and use of "reflecting" in communicating with patients.

Standard 6: Adjustments and Threats to Adjustments (0725.S.6)

Students will understand the process of adjustment and potential threats of adjustment occurring during childhood, adolescence and adulthood.

Adjustments and Threats to Adjustments Objectives

Students will:

- 0725.6.1 Define "adjustment."
- 0725.6.2 Compare and contrast characteristics of a person who is well-adjusted and poorly-adjusted.
- 0725.6.3 Describe the relationship of change to adjustment.
- 0725.6.4 State at least five guidelines used to improve adjustments.
- 0725.6.5 Discuss behaviors that accompany adapting to new situations.
- 0725.6.6 List steps for adapting to a new situation.
- 0725.6.7 Explain the role of the health care worker in the modification of behavior in consideration of the code of ethics.
- 0725.6.8 Name six life stages in which milestones can threaten adjustments and one significant change that occurs in each stage.
- 0725.6.9 Discuss three methods that can be used to improve reactions to threatening situations.
- 0725.6.10 Discuss the guidelines that indicate a person could benefit from professional counseling.
- 0725.6.11 Name five long term effects of child abuse.
- 0725.6.12 Name three stressors that adolescents commonly experience.
- 0725.6.13 Describe the traumatic effects of discrimination, sexism, rape and domestic violence.

Standard 7: Defense Mechanisms, Inner Conflict and Frustration (0725.S.7)

Students will identify behaviors resulting from defense mechanisms, inner conflict and frustration including the role of the health care provider in the recognition and reduction of each.

Defense Mechanisms, Inner Conflict and Frustration Objectives

Students will:

- 0725.7.1 Define defense mechanisms and explain their purpose.
- 0725.7.2 Define rationalization, projection, displacement, day dreaming, escape into illness, repression and withdrawal.
- 0725.7.3 Compare substance dependency and defense mechanisms.
- 0725.7.4 Name the goal of the health care provider with patients using defense mechanisms.
- 0725.7.5 Explain actions that can reduce a patient's need for defensive behavior.
- 0725.7.6 Define inner conflict.
- 0725.7.7 List and explain three types of inner conflict.
- 0725.7.8 Describe the process for resolving inner conflict.
- 0725.7.9 Define the underlying cause and effect of frustration.
- 0725.7.10 Name five emotional effects/responses to frustration.
- 0725.7.11 Describe common frustrations that can occur during stages of growth and development.
- 0725.7.12 Describe a general approach to dealing with frustration.

Standard 8: Illness and Patient Behavior (0725.S.8)

Students will describe emotional responses to illness and the behaviors that are indicators of the responses.

Illness and Patient Behavior Objectives

Students will:

- 0725.8.1 List six general physical effects of illness.
- 0725.8.2 Describe emotional reactions to illness and behaviors that can correlate with each.
- 0725.8.3 Name seven influences on patients' reactions to illness and describe guidelines for providing effective care for each.
- 0725.8.4 Match definitions and/or examples with techniques used in common communication blocks.

Standard 9: Patient Behavior and Human Relations in the Provision of Health Care (0725.S.9)

Students will understand common behavior patterns of patients and describe appropriate strategies used in the provision of health care.

Patient Behavior and Human Relations in the Provision of Health Care Objectives

Students will:

- 0725.9.1 Describe ways to improve relationships with patients.
- 0725.9.2 Name and describe five communication techniques that may be used when responding to patients.
- 0725.9.3 Select the appropriate coping strategies when given a common behavior pattern of patients.
- 0725.9.4 List five guidelines for becoming an effective member of the health care team.
- 0725.9.5 Name three ways in which a health care provider can maintain up-to-date knowledge and skills.

Standard 10: Nonverbal and Verbal Communication (0725.S.10)

Students will interpret and apply knowledge of verbal and nonverbal communication principles.

Nonverbal and Verbal Communication Objectives

Students will:

- 0725.10.1 Explain human relations in relationship to selective behavior.
- 0725.10.2 List five examples of nonverbal behavior that convey a message.
- 0725.10.3 Discuss why nonverbal behavior should be included in one's observations.
- 0725.10.4 Explain the communication technique of encouraging others to express their feelings.
- 0725.10.5 Observe and interpret nonverbal behavior.
- 0725.10.6 Define "ambiguity" and explain why it is difficult to avoid during verbal communication.
- 0725.10.7 Explain message discrepancy.
- 0725.10.8 List three sender-related and receiver-related causes of message discrepancies.
- 0725.10.9 Explain why assumptions and expectations can be a source of communication break down.
- 0725.10.10 Discuss ways in which the health care provider can assist with the clarification of communication.

Standard 11: Gains and Losses Throughout Life (0725.S.11)

Students will understand the effect of losses that occur throughout the life span and the effective coping skills required during these events.

Gains and Losses Throughout Life Objectives

Students will:

- 0725.11.1 Explain the effects of suppressed emotions.
- 0725.11.2 Explain the significance of a loss.
- 0725.11.3 Given various causes of death, discuss common reactions of the survivors.
- 0725.11.4 List the medical terms used for a suicide attempt that ended in death and one that does not end in death.
- 0725.11.5 Discuss appropriate responses of the health care provider in a situation involving suicide.
- 0725.11.6 Define euthanasia, including active and passive, and assisted-suicide.
- 0725.11.7 Describe three examples of loss that can occur during each period of the life span.
- 0725.11.8 List seven guidelines for coping with loss and helping others to do so.

Standard 12: Death, Grief, and Caring For the Dying Patient (0725.S.12)

Students will describe emotional, physical, and legal facts involved in the care of patients during the

process of death and dying.

Death, Grief, and Caring For the Dying Patient Objectives

Students will:

- 0725.12.1 Discuss how attitudes toward death have changed from past to present.
- 0725.12.2 Define thanatology.
- 0725.12.3 Describe the benefits of death education.
- 0725.12.4 Explain what is meant by "death with dignity."
- 0725.12.5 Name and discuss three issues of concern of all health care providers participating in the care of the dying involving ethics, moral and legal questions.
- 0725.12.6 Explain the Uniform Anatomical Gift Act.
- 0725.12.7 Define the following medical processes: Do Not Resuscitate, the Patient Self-Determination Act, Advanced Medical Directives, the Living Will, and the Durable Power of Attorney.
- 0725.12.8 Define grief, anticipatory grief, bereavement and interment.
- 0725.12.9 Describe effects of grief in terms of physical, mental/emotional and behavioral.
- 0725.12.10 Discuss five concepts that one can learn from the grief process.
- 0725.12.11 List six conditions that inhibit the grief process.
- 0725.12.12 Describe the common aspect of the grief model offered by Dr. Kubler-Ross and Oates.
- 0725.12.13 List five indications of unresolved grief.
- 0725.12.14 List five guidelines for assisting the family of a dying patient.
- 0725.12.15 Describe five fears common to those dying.
- 0725.12.16 List and explain the five stages of dying as presented by Dr. Kubler-Ross.
- 0725.12.17 State the primary focus of palliative care.
- 0725.12.18 Explain three reasons why patients should be informed of a terminal illness.
- 0725.12.19 State five guidelines for meeting the needs of a dying patient.

Standard 13: Trends in Health Care (0725.S.13)

Students will discuss those people in the past who have made significant contributions to health care and current trends in health care today.

Trends in Health Care Objectives

Students will:

- 0725.13.1 Define Alternative Therapy, Complementary Therapy and Holistic Care.
- 0725.13.2 Describe components of the scientific model.
- 0725.13.3 Define Empirical Data.
- 0725.13.4 Briefly describe the contribution of the following people: Leuwenhoek, Lister, Koch, Pasteur, Jenner, Salk, Pierre and Curie, Roentgen, Freud, Simonton, Shealy, Possey, and Benson.
- 0725.13.5 Describe the underlying principle of Health Maintenance Organizations and Managed Care.
- 0725.13.6 Explain Medicare, Medicaid and Universal Health Care.
- 0725.13.7 Describe "placebo effect."
- 0725.13.8 Define "mind-talk" and "mindfulness."
- 0725.13.9 Describe the physical and psychological effects of relaxation and meditation.
- 0725.13.10 Demonstrate a technique for relaxation and meditation.
- 0725.13.11 List four possible indicators of quackery.
- 0725.13.12 Explain the primary characteristics of a holistic approach to health care.
- 0725.13.13 Describe the difference between the "D.O." and "M.D."
- 0725.13.14 Describe the practice of chiropractic.
- 0725.13.15 Name and describe two therapeutic techniques, two alternative therapies and one type of stimulation of reflex points used in current health care.

Standard 14: Technology (0725.S.14)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives:

Students will:

- 0725.14.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0725.14.2 Utilize the Internet as a resource/research tool.

Standard 15: Students Organization (0725.S.15)

Students will participate in a Career and Technical Student Organization (CTSO).

Students Organization Objectives:

Students will:

- 0725.15.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0725.15.2 Apply parliamentary procedure in organizational meetings.
- 0725.15.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0725.15.4 Take part in local, state, and national health care and education projects.

Medical Assistant Clinical Procedures

WVEIS Code 0733

Within this course of study the Medical Assistant student will focus upon various clinical procedures utilized within the medical offices. Major instructional components will include emergency medical care, the physical exam, basic pharmacology and administration of medication, and strategies for successful employment. This course will include a work-based clinical externship within a medical office. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO). This course is equivalent to 2 units of credit.

Standard 1: Emergency Medical Care (0733.S.1)

Students will perform basic emergency medical care.

Emergency Medical Care Objectives

Students will:

- 0733.1.1 Describe the legal and health considerations in emergency care giving.
- 0733.1.2 Perform a primary assessment in simulated emergency situations.
- 0733.1.3 Determine the sequence of appropriate actions given an emergency situation.
- 0733.1.4 Identify signs, symptoms, and treatment for shock.
- 0733.1.5 Demonstrate the four methods for the control of bleeding in the order they are used.
- 0733.1.6 Describe first aid treatment for wounds and the terms associated with each type.
- 0733.1.7 Describe first aid measures for sudden illness and injury including, fainting, stroke, seizures, insulin shock and diabetic coma.
- 0733.1.8 Demonstrate first aid measures for bone and joint injuries including fracture, dislocation, sprain and strain.
- 0733.1.9 Demonstrate dressing, bandaging and splinting techniques.
- 0733.1.10 Recognize first aid measures used for injuries involving the eyes, head, nose, ears, chest, abdomen and genital organs.
- 0733.1.11 Describe first aid measures for temperature related injuries including hot and cold exposure and burns.
- 0733.1.12 Describe first aid measures for poisoning, stings, bites, and allergic reactions.

Standard 2: CPR and First Aid for Obstructed Airway (0733.S.2)

Students will identify the need for and perform Cardiopulmonary Resuscitation and first aid for an obstructed airway.

CPR and First Aid for Obstructed Airway Objectives

Students will:

- 0733.2.1 Express the risk factors for cardiovascular disease.
- 0733.2.2 Perform correct CPR techniques for the following: infant, child, and one-rescuer adult.
- 0733.2.3 Identify signs and symptoms of an obstructed airway.
- 0733.2.4 Identify the signs and symptoms of a heart attack.
- 0733.2.5 Demonstrate universal distress signal for obstructed airway.
- 0733.2.6 Perform procedures to relieve airway obstruction in an infant, child and adult.
- 0733.2.7 Demonstrate the correct use of the AED.

Standard 3: Physical Examination (0733.S.3)

Students will perform basic physical examinations.

Physical Examination Objectives

Students will:

- 0733.3.1 Discuss the medical assistant's role in the physical exam process.
- 0733.3.2 Identify the difference between subjective and objective observation and recordings.

- 0733.3.3 Compare and contrast medical history and physical exam forms.
- 0733.3.4 Describe at least three methods of examinations.
- 0733.3.5 Perform screening procedures including the measurement and recording of vital signs, height and weight, vision and hearing screening and chief complaints.
- 0733.3.6 Name and describe eight positions used for physical examinations.
- 0733.3.7 Explain the purpose of draping.
- 0733.3.8 Demonstrate the correct draping procedure for each type of position used for physical examinations.
- 0733.3.9 Describe the components and sequence of a routine physical examination including eye and ear procedures.
- 0733.3.10 Explain the procedures, instrument used, and positions for various special examinations.
- 0733.3.11 Assist with physical examinations and record findings on appropriate physical examination forms.

Standard 4: Basic Pharmacology (0733.S.4)

Students will identify principles of basic pharmacology.

Basic Pharmacology Objectives

Students will:

- 0733.4.1 Examine and describe general principles of pharmacology including legal aspects.
- 0733.4.2 Compare and contrast main sources of drug information.
- 0733.4.3 Describe three types of drug names and give an example for each.
- 0733.4.4 Describe the Federal Foods, Drug, and Cosmetic Act and the Controlled Substance Act of 1970.
- 0733.4.5 Define the law in terms of administering, prescribing, and dispensing drugs.
- 0733.4.6 Recognize common drug classification and list examples.
- 0733.4.7 Compare the five levels of controlled substances and discuss the legal issues associated with each.
- 0733.4.8 Describe routes of drug administration and drug forms.
- 0733.4.9 Identify the methods of inventory, storage, dispensation, and disposal of medication.
- 0733.4.10 List emergency drugs and supplies.
- 0733.4.11 Recall commonly abused drugs and describe their physical and emotional effects.
- 0733.4.12 Identify common abbreviations associated with pharmacology.
- 0733.4.13 Interpret the physician's medication order and discuss the information on a prescription label.
- 0733.4.14 Understand the systems of measurement and accurately calculate drug dosages.

Standard 5: Medication Administration (0733.S.5)

Students will identify principles in the administration of medications.

Medication Administration Objectives

Students will:

- 0733.5.1 Discuss and summarize the role and responsibility of the medical assistant associated with administration of medication.
- 0733.5.2 Describe and practice safety measures related to the administration of medications.
- 0733.5.3 List the "Rights" of administration of medication.
- 0733.5.4 Identify and classify preferred routes of administration.
- 0733.5.5 Compare types of needles and syringes along with their use.
- 0733.5.6 Describe and select the appropriate site for administration of parenteral medication.
- 0733.5.7 Prepare injectable medication.
- 0733.5.8 Administer medication by various routes.

Standard 6: Clinical Externship (0733.S.6)

Students will participate in clinical externship.

Clinical Externship Objectives

Students will:

- 0733.6.1 Demonstrate a working knowledge of externship eligibility requirements.
- 0733.6.2 Conform to professional standards for health care workers.
- 0733.6.3 Comply with required health regulations such as proof of physical examination and immunization status.
- 0733.6.4 Provide proof of personal health insurance.
- 0733.6.5 Wear proper clinical attire.
- 0733.6.6 Report to clinical site on time and ready to work.
- 0733.6.7 Notify clinical site and instructor when absent.
- 0733.6.8 Conform to policies regarding performance of skills and scope of responsibility/practice.
- 0733.6.9 Correctly and safely perform entry-level procedures under supervision of an instructor or clinical site preceptor.
- 0733.6.10 Request assistance or clarification as needed.
- 0733.6.11 Organize and effectively manage time.
- 0733.6.12 Accurately and efficiently complete documentation required for clinical externship.
- 0733.6.13 Participate in clinical internship evaluation process.

Standard 7: Technology (0733.S.7)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0733.7.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0733.7.2 Utilize the Internet as a resource/research tool.

Standard 8: Student Organization (0733.S.8)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organization Objectives

Students will:

- 0733.8.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0733.8.2 Apply parliamentary procedure in organizational meetings.
- 0733.8.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0733.8.4 Take part in local, state, and national health care and education projects.

Medical Assistant Advanced Pharmacology

WVEIS Code 0734

Within this course the Medical Assistant student will acquire an understanding of basic pharmacology. Instruction will include the uses, sources, forms, and delivery routes of drugs. Knowledge will be gained in the area of drug classifications and actions, along with the legal implementation regarding controlled substances and other medications. Current technology will be utilized to master course standards. Students are provided with the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Introduction (0734.S.1)

Students will understand the history and source of drugs.

Introduction Objectives

- 0734.1.1 Define drugs and discuss their origin and use.
- 0734.1.2 Compare the three types of drug names.
- 0734.1.3 List four sources of drugs and give examples.
- 0734.1.4 List the forms in which drugs are prepared, give examples and discuss the route of administration of each.

Standard 2: Drug References (0734.S.2)

Students will use the PDR and other reference sources.

Drug References Objectives

Students will:

- 0734.2.1 Discuss the types of drug reference books.
- 0734.2.2 Examine and discuss the sections in a PDR.
- 0734.2.3 Describe the format of the PDR's product information section.
- 0734.2.4 Demonstrate the procedure for using a PDR.

Standard 3: Agencies and Safety Guidelines (0734.S.3)

Students will identify the legal and ethical implication of medication administration.

Agencies and Safety Guidelines Objectives

- 0734.3.1 Discuss the role of the FDA.
- 0734.3.2 Describe the drug approval process.
- 0734.3.3 Explain the "New Drug" list.
- 0734.3.4 Discuss the function of the Drug Enforcement Administration and the purpose of the Controlled Substance Act.
- 0734.3.5 Define controlled substance, list the five categories, and give examples of each.
- 0734.3.6 Summarize the proper method for storing and dispensing a controlled substance.
- 0734.3.7 Discuss the documentation associated with controlled substances.
- 0734.3.8 Examine the legal considerations associated with controlled substances and prescription pads.
- 0734.3.9 Identify the professions that can legally prescribe medication.

Standard 4: Medication Orders and Prescriptions (0734.S.4)

Students will interpret and document medication orders, including the parts of a prescription.

Medication Orders and Prescriptions

- 0734.4.1 Define pharmacology terms.
- 0734.4.2 Identify the information found on a prescription form.

- 0734.4.3 Define prescription abbreviation terms.
- 0734.4.4 Correctly interpret medication orders.
- 0734.4.5 Demonstrate the proper technique to document verbal medication orders.
- 0734.4.6 Demonstrate the proper procedure for phoning in prescription orders.

Standard 5: Drug Classification and Actions (0734.S.5)

Students will identify classification of drugs, factors that affect drug action and the undesirable actions of given drugs.

Drug Classification and Actions Objectives

- 0734.5.1 Summarize how drugs are classified.
- 0734.5.2 Determine the classification of specific drugs using reference books.
- 0734.5.3 Explain the therapeutic action of specific classifications of drugs.
- 0734.5.4 Compare the therapeutic action and side effects of specific drugs.
- 0734.5.5 Identify common contraindications.
- 0734.5.6 Discuss precautions and adverse reaction of specific drugs.
- 0734.5.7 Identify the classification, action, and side effects of OTC drugs.
- 0734.5.8 Discuss alternative medication and their action.
- 0734.5.9 Describe drug interactions and their consequences.

Standard 6: Pharmacology Measurement (0734.S.6)

Students will understand both the apothecary and metric systems of measurement by the calculation of drug doses requiring the use of decimals, fractions, ratios and proportions.

Pharmacology Measurement Objectives

- 0734.6.1 Compare the two systems of measure commonly used in pharmacology.
- 0734.6.2 Identify metric units of measure.
- 0734.6.3 Correctly read and write metric abbreviations.
- 0734.6.4 Identify apothecary units of measure.
- 0734.6.5 Correctly read and write apothecary abbreviations.
- 0734.6.6 Convert quantities between the systems of measure.
- 0734.6.7 Discuss standardized units of measure and give examples of when these are used.
- 0734.6.8 Demonstrate the ability to use decimals, fractions, ratios and proportions.
- 0734.6.9 Demonstrate the ability to solve for x.

Standard 7: Dosage Calculations (0734.S.7)

Students will calculate drug dosages for both adults and children.

Dosage Calculations Objectives

- 0734.7.1 List the steps to follow when calculating drug doses.
- 0734.7.2 Correctly read and interpret medication labels.
- 0734.7.3 Compare medication label information to medication order.
- 0734.7.4 Correctly convert to the same units of measure.
- 0734.7.5 State the proportion method and the formula method for calculating drug doses.
- 0734.7.6 Correctly calculate drug doses using the proportion method and the formula method.
- 0734.7.7 Discuss the methods for calculating pediatric drug doses.

Standard 8: Technology (0734.S.8)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0734.8.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0734.8.2 Utilize the Internet as a resource/research tool.

Standard 9: Student Organizations (0734.S.9)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0734.9.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0734.9.2 Apply parliamentary procedure in organizational meetings.
- 0734.9.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0734.9.4 Take part in local, state, and national health care and education projects.

Medical Assistant Administrative Procedures I

WVEIS Code 0735

Within this course the student will gain knowledge and skills needed for the performance of entry-level administrative duties commonly found within the medical office. Instruction will focus upon procedures related to reception, scheduling of patients, medical records management, the use of medical office equipment, computer use in the ambulatory care setting, safety, accounting procedures and insurance and coding. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Reception, Telephone and Scheduling (0735.S.1)

Students will perform office procedures related to reception, telephone, and scheduling.

Reception, Telephone and Scheduling Objectives

Students will:

- 0735.1.1 Discuss the importance of the physical office environment to patient care.
- 0735.1.2 Review personality characteristics the medical receptionist should possess.
- 0735.1.3 Describe the process for handling incoming and outgoing mail.
- 0735.1.4 Compare and contrast services provided by US postal services and other delivery systems.
- 0735.1.5 Discuss the importance of and demonstrate proper telephone etiquette for placing and receiving calls.
- 0735.1.6 Perform the procedure for taking telephone messages.
- 0735.1.7 Explain the function of telephone triage.
- 0735.1.8 Compare and contrast different types of appointment scheduling systems.
- 0735.1.9 Demonstrate the proper procedure for scheduling appointments.

Standard 2: Patient Records (0735.S.2)

Students will perform procedures related to patient records.

Patient Records Objectives

Students will:

- 0735.2.1 Compare and contrast different types of patient record forms and describe the format for each.
- 0735.2.2 Describe each step in the filing process.
- 0735.2.3 Explain how to set up and use a tickler file.
- 0735.2.4 Identify and apply rules for charting.
- 0735.2.5 Identify when and how a medical record can be released.

Standard 3: Office Equipment (0735.S.3)

Students will identify common medical office equipment and demonstrate their correct use.

Office Equipment Objectives:

Students will:

- 0735.3.1 Identify and describe the function of common medical office equipment.
- 0735.3.2 Describe safety measures associated with the use of common medical office equipment.
- 0735.3.3 Demonstrate the use of a calculator, copy machine, and typewriter.

Standard 4: Basic Computer Applications (0735.S.4)

Students will apply knowledge and skill in the use of computer hardware and software within the medical office.

Basic Computer Applications Objectives

Students will:

- 0735.4.1 Define computer terms.
- 0735.4.2 Identify components of computer hardware.
- 0735.4.3 Identify types of software programs used in a medical office.
- 0735.4.4 Explain why backing up computer data is necessary.
- 0735.4.5 Demonstrate the basic operation of a computer.
- 0735.4.6 Describe methods for maintaining confidentiality and security in the utilization of computers and on-line devices for the storage and transfer of medical information.

Standard 5: Safety in the Medical Office (0735.S.5)

Students will describe safety standards necessary in the medical office.

Safety in the Medical Office Objectives

Students will:

- 0735.5.1 Identify common safety hazards found in the medical office.
- 0735.5.2 Observe all safety standards established by the Occupational Safety and Health Administration (OSHA).
- 0735.5.3 List steps to be taken for the prevention of accidents and injury to create a safe environment for both personnel and patients.
- 0735.5.4 Describe methods of fire prevention in an office.
- 0735.5.5 List the four main classes of fire extinguishers.
- 0735.5.6 Locate and describe the operations of the nearest fire alarm.
- 0735.5.7 Describe principles in an emergency evacuation plan.

Standard 6: Financial Practices (0735.S.6)

Students will apply skills necessary in the financial management of the medical office.

Medical Assistant Duties Objectives

Students will:

- 0735.6.1 Identify common terms and practices associated with patient fees.
- 0735.6.2 Describe manual and computerized booking systems.
- 0735.6.3 Demonstrate basic accounting skills necessary in maintaining patient accounts and records of income and expenses of the medical office.
- 0735.6.4 Demonstrate basic banking procedures including preparing bank deposits, writing checks, recording checks, and reconciling accounts.

Standard 7: Insurance, Coding, Billing (0735.S.7)

Students will understand medical insurance practices, including coding and billing.

Insurance, Coding, Billing Objectives

Students will:

- 0735.7.1 Define terminology necessary to interpret and submit medical insurance claims.
- 0735.7.2 Discuss examples of medical insurance coverage.
- 0735.7.3 Complete a basic insurance form.
- 0735.7.4 Explain the significance of diagnosis-related groups.
- 0735.7.5 Understand the process of procedure and diagnosis coding.
- 0735.7.6 Code a sample claim form.

Standard 8: Technology (0735.S.8)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0735.8.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0735.8.2 Utilize the Internet as a resource/research tool.

Standard 9: Student Organizations (0735.S.9)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0735.9.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0735.9.2 Apply parliamentary procedure in organizational meetings.
- 0735.9.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0735.9.4 Take part in local, state, and national health care and education projects.

Medical Assisting Administrative Procedures II

WVEIS Code 0736

Within this course students will focus on policies and procedures necessary for medical reimbursement. Students will gain a working knowledge of the systems theory in health care. Additional components of this course include an introduction to Medical Office Coding, ICD-9-CM, CPT-4 Coding, CPT-4 Sections, and auditing process. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Health Care Systems (0736.S.1)

Students will describe and apply the systems theory to health care.

Health Care Systems Objectives

Students will:

- 0736.1.1 Describe systems theory and its components.
- 0736.1.2 Construct a general systems model using inputs, throughputs and feed back loops.
- 0736.1.3 Explain the function of systems theory model.
- 0736.1.4 Describe how systems theory relates to health care.
- 0736.1.5 List the factors that affect the health care system and predict their influence.
- 0736.1.6 Construct a systems model depicting the interdependence of health care professionals.
- 0736.1.7 Analyze the cause and effect of change in the health care system based on the influence of: technology, epidemiology, bio-ethics, socio-economics, and various forms of complimentary (non-traditional) medicine.

Standard 2: Medical Terminology (0736.S.2)

Students will understand basic medical terminology necessary to interpret and submit medical insurance claims.

Medical Terminology Objectives

Students will:

- 0736.2.1 Interpret commonly used medical roots, prefixes and suffixes.
- 0736.2.2 Interpret commonly used abbreviations.
- 0736.2.3 Incorporate standard medical terms and abbreviations in written and oral communications to interpret, transcribe, and communicate information, data, and observations.

Standard 3: Introduction to Medical Office Coding (0736.S.3)

Students will discuss knowledge of medical office coding principles.

Medical Office Coding Objectives

Students will:

- 0736.3.1 Describe the evolution of medical insurance in this country.
- 0736.3.2 Explain the significance of diagnosis-related groups.
- 0736.3.3 Define coding and discuss its origin and function.
- 0736.3.4 Categorize the types of codes used in health care.
- 0736.3.5 Examine and analyze the documentation tools used in the coding process.
- 0736.3.6 Demonstrate the proper technique for determining the physician's diagnosis.

Standard 4: ICD-9-CM Coding (0736.S.4)

Students will interpret and apply basic concepts for ICD-9-CM coding.

ICD-9-CM Coding Objectives

Students will:

- 0736.4.1 Summarize the ICD-9-CM code book format.
- 0736.4.2 Describe the symbols, punctuation, and abbreviations used in ICD-9-CM codes.
- 0736.4.3 Discuss the steps for accurate coding from the ICD-9-CM code book.
- 0736.4.4 Describe the HCFA guideline for ICD-9-CM coding.
- 0736.4.5 Explain the purpose for V codes and E codes.
- 0736.4.6 Use the Drug and Chemical Tables found in the ICD-9-CM code book.
- 0736.4.7 Demonstrate the procedure for coding special complexities.

Standard 5: CPT-4 Coding (0736.S.5)

Students will interpret and apply basic concepts of CPT-4 coding.

CPT-4 Coding Objectives

Students will:

- 0736.5.1 Demonstrate the proper technique for determining codeable procedures and services.
- 0736.5.2 Summarize the CPT-4 code book format.
- 0736.5.3 Identify and understand the signs and symbols used in the CPT-4 code book.
- 0736.5.4 Discuss the use of modifiers to CPT-4 codes.
- 0736.5.5 Compare starred, global, and unlisted CPT-4 codes.

Standard 6: CPT-4 Sections (0736.S.6)

Students will interpret and apply CPT-4 code sections.

CPT-4 Sections Objectives

Students will:

- 0736.6.1 Apply the concepts of evaluation and management coding.
- 0736.6.2 Understand and apply the principle elements of anesthesia coding.
- 0736.6.3 Apply the surgery coding guidelines.
- 0736.6.4 Identify types of pathology services and explain proper application of coding rules for each category of services.
- 0736.6.5 Identify the proper coding guidelines for each subsection of the medicine services.
- 0736.6.6 Discuss the rules and application of modifiers to the coding process.
- 0736.6.7 Code a sample claim form.

Standard 7: Reimbursement and Auditing (0736.S.7)

Students will describe reimbursement and auditing processes.

Reimbursement and Auditing Objectives

Students will:

- 0736.7.1 Identify and describe the different reimbursement methods.
- 0736.7.2 Summarize the purpose of third party contracts and their effect on coding.
- 0736.7.3 Explain the components for payment calculations and reimbursement calculations.
- 0736.7.4 Abstract information from the patients' medical records and complete claim forms.
- 0736.7.5 Recognize internal and external obstacles to accurate and timely reimbursement.
- 0736.7.6 Describe the auditing process, including the purpose of audits.

Standard 8: Technology (0736.S.8)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0736.8.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0736.8.2 Utilize the Internet as a resource/research tool.

Standard 9: Student Organizations (0736.S.9)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organizations Objectives

Students will:

- 0736.9.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0736.9.2 Apply parliamentary procedure in organizational meetings.
- 0736.9.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0736.9.4 Take part in local, state, and national health care and education projects.

Medical Assisting Laboratory and Diagnostic Procedures

WVEIS Code 0737

Within this course instruction will focus on an introduction to the medical laboratory, safety, principles of disease transmission and prevention, and medical and surgical asepsis. Students will obtain the knowledge and skills necessary to assist and/or perform basic laboratory and diagnostic procedures. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Introduction to the Medical Laboratory (0737.S.1)

Students will identify the general purposes of the medical laboratory and the laboratory personnel found within.

Introduction to the Medical Laboratory Objectives

Students will:

- 0737.1.1 Describe various purposes of laboratory testing.
- 0737.1.2 Describe the main similarities and differences between independent laboratories and physician's office laboratories (POLs).
- 0737.1.3 Explain the levels of laboratory personnel in relationship to education, skills and duties.
- 0737.1.4 List eight different departments that could be found within a medical laboratory.
- 0737.1.5 Name nine of the most common laboratory profiles and explain the body system or function being surveyed.

Standard 2: Disease Transmission and Prevention (0737.S.2)

Students will describe principles of disease transmission and prevention.

Disease Transmission and Prevention Objectives

The student will:

- 0737.2.1 Discuss the growth requirement for microorganisms and illustrate the cycle of infection.
- 0737.2.2 Identify and describe the various methods of disease transmission.
- 0737.2.3 Explain the techniques used to break the cycle of infection.
- 0737.2.4 Discuss the purpose of regulatory bodies (OSHA, CDC, CLIA) and describe how they impact the medical office.
- 0737.2.5 Apply Standard Precautions when handling bio-hazardous material.
- 0737.2.6 Explain the exposure incident report and follow up procedures.

Standard 3: Medical and Surgical Asepsis (0737.S.3)

Students will identify principles of disease transmission and prevention.

Medical and Surgical Asepsis Objectives

Students will:

- 0737.3.1 Compare and contrast medical and surgical asepsis.
- 0737.3.2 Differentiate between sanitization, disinfections, and sterilization practices.
- 0737.3.3 Discuss methods of sanitization and disinfections and explain how and when they are applied in the medical office.
- 0737.3.4 Describe methods of sterilization.
- 0737.3.5 Demonstrate the proper technique for preparing, wrapping, and autoclaving instruments.
- 0737.3.6 Define and apply techniques of surgical asepsis including sterile technique, gloving, use of transfer forceps assisting with minor surgery, and wound care.

Standard 4: POL Regulations and Safety (0737.S.4)

Students will apply basic safety standards.

POL Regulations and Safety Objectives

Students will:

- 0737.4.1 Name six general rules for safety within the medical laboratory.
- 0737.4.2 Identify the regulatory agencies associated with Physician's Office Laboratories.
- 0737.4.3 Identify CDC standard precautions.
- 0737.4.4 Explain and discuss lab practices that yield quality assurance and quality control in the medical laboratory.
- 0737.4.5 Discuss safety issues associated with processing specimens.
- 0737.4.6 Demonstrate correct completion of a laboratory requisition.

Standard 5: Hematology (0737.S.5)

Students will understand the purposes and procedures of hematological procedures.

Hematology Objectives

Students will:

- 0737.5.1 Discuss how hematology is used in the diagnosis and treatment of disease.
- 0737.5.2 Differentiate between serum and plasma.
- 0737.5.3 Explain the principle of the evacuated system.
- 0737.5.4 State the manner in which anticoagulants prevent coagulation.
- 0737.5.5 Name the anticoagulant associated with color-coded tubes.
- 0737.5.6 State the purposes of additives.
- 0737.5.7 Explain the methods for correct patient identification, complete specimen labeling and proper storage and delivery.
- 0737.5.8 List basic office hematology procedures.
- 0737.5.9 Identify equipment and supplies required for each.
- 0737.5.10 Understand and practice acceptable standards for collecting hematology specimens.
- 0737.5.11 List general types of hematology instruments used in the ambulatory care setting and describe their general technology.
- 0737.5.12 Describe how CLIA '88 regulates the use of quality control in automated hematology instruments.
- 0737.5.13 Collect blood samples for analysis.

Standard 6: Urinalysis (0737.S.6)

Students will understand the importance of urinalysis as a diagnostic tool and the procedures for a common urinalysis.

Urinalysis Objectives

Students will:

- 0737.6.1 Explain the process of urine formation.
- 0737.6.2 Describe and practice safety procedures and quality control standards necessary when collecting urine specimens.
- 0737.6.3 Describe common urine tests.
- 0737.6.4 Identify the equipment and supplies for common urine test.
- 0737.6.5 Perform physical and chemical analysis on urine.
- 0737.6.6 Identify parts of a microscope.
- 0737.6.7 Identify the proper method of preparing urine sediment for microscopic examination.
- 0737.6.8 Collect urine specimen.
- 0737.6.9 Prepare a slide for microscopic examination.
- 0737.6.10 Record results and compare to normal values.
- 0737.6.11 Report abnormal findings.

Standard 7: Electrocardiogram (0737.S.7)

Students will understand underlying physiology related to electrocardiography and perform electrocardiography procedures.

Electrocardiogram Objectives

Students will:

- 0737.7.1 Trace the circulation of blood through the heart.
- 0737.7.2 Describe the electrical conduction of the heart.
- 0737.7.3 Define electrocardiogram and discuss the purposes.
- 0737.7.4 Identify the equipment and supplies used to perform an EKG and describe the function of each.
- 0737.7.5 Discuss safety measures associated to EKG.
- 0737.7.6 Identify the twelve leads of an EKG and describe what area of the heart each lead represents.
- 0737.7.7 Apply limb and chest electrodes properly.
- 0737.7.8 Perform a twelve lead EKG.
- 0737.7.9 Define artifact and list causes.
- 0737.7.10 Identify the placement of the Holter Monitor electrodes.
- 0737.7.11 Describe the reason for a patient activity diary during ambulatory electrocardiography.
- 0737.7.12 Describe the procedure for mounting an EKG tracing.

Standard 8: Technology (0737.S.8)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0737.8.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0737.8.2 Utilize the Internet as a resource/research tool.

Standard 9: Student Organization (0737.S.9)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organization Objectives

Students will:

- 0737.9.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0737.9.2 Apply parliamentary procedure in organizational meetings.
- 0737.9.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0737.9.4 Take part in local, state, and national health care and education projects.

Medical Assistant Orientation

WVEIS Code 0738

This course contains the beginning concepts and skills students will need for entry-level employment as a Medical Assistant. Major instructional concepts include: the general purposes and organization of the various health care systems, orientation to the career of Medical Assistant, ethics and liability, communication, medical terminology and structure and function of the human body. Current technology will be utilized to master course standards. Students are provided the opportunity to participate in a Career and Technical Student Organization (CTSO).

Standard 1: Role, Function and Career Preparation (0738.S.1)

Students will identify concepts concerning the role, function and career preparation for the medical assistant.

Role, Function and Career Preparation Objectives

Students will:

- 0738.1.1 Describe the function of the health care team.
- 0738.1.2 Analyze the role and responsibilities of a medical assistant and discuss how it relates to the health care team.
- 0738.1.3 Identify, evaluate and apply ideal attributes of a medical assistant.
- 0738.1.4 Research medical assistant career opportunities.
- 0738.1.5 Identify student and professional organizations applicable to the medical assistant.
- 0738.1.6 Explain accreditation, certification, licensure and continuing education as they pertain to the professional medical assistant.

Standard 2: Ethics (0738.S.2)

Students will describe medical ethics in relationship to the performance of patient care by the Medical Assistant.

Ethics Objectives

Students will:

- 0738.2.1 Summarize the difference between ethical and legal issues impacting health care.
- 0738.2.2 Explain the Code of Ethics for Medical Assistants and the Medical Assistant Creed.
- 0738.2.3 Research and describe basic professional standards of behavior for health care workers.
- 0738.2.4 Explain and demonstrate how these standards apply to: hygiene, dress, language, confidentiality, reliability, discrimination, adaptability, and personal behavior.
- 0738.2.5 Explain how professional ethics impact patient care.
- 0738.2.6 Compare and contrast ethical and unethical behavior and its consequences.

Standard 3: Liability (0738.S.3)

Students will describe medical law as applicable to the scope of practice of the Medical Assistant.

Liability Objectives

Students will:

- 0738.3.1 Analyze legal responsibilities, limitations, and implication of actions.
- 0738.3.2 Describe scope of practice.
- 0738.3.3 Describe behavior and practices that could result in malpractice, liability, or negligence.
- 0738.3.4 Define and describe "The Patient Bill of Rights" and "Advanced Directives."
- 0738.3.5 Define and apply "Privileged Communication."
- 0738.3.6 Illustrate instances of legally required disclosure.
- 0738.3.7 Compare and contrast implied and expressed consent and their application.
- 0738.3.8 Describe the policies and regulations affecting documentation and record keeping.
- 0738.3.9 Identify civil and criminal law as it pertains to the medical office.

Standard 4: Communication (0738.S.4)

Students will practice effective communication with clients and personnel in the medical office.

Communication Objectives

Students will:

- 0738.4.1 Analyze and demonstrate the principles of verbal and non-verbal communication.
- 0738.4.2 Apply active listening skills using reflection, restatement, and clarification.
- 0738.4.3 Distinguish between subjective and objective information and give examples.
- 0738.4.4 Adapt communication to individual needs including multicultural, multilingual, and sensory impairment.
- 0738.4.5 Convey and explain proper patient instruction as it relates to basic health care, common medical procedures, and applicable community resources.
- 0738.4.6 Organize, compile, and compose technical information and summaries.
- 0738.4.7 Correctly incorporate medical terminology in written and oral communication.

Standard 5: Medical Terminology (0738.S.5)

Students will interpret basic medical terminology.

Medical Terminology Objectives

Students will:

- 0738.5.1 Interpret commonly used medical roots, prefixes and suffixes.
- 0738.5.2 Interpret commonly used abbreviations.
- 0738.5.3 Incorporate standard medical terms and abbreviations in written and oral communications to interpret, transcribe, and communicate information, data, and observations.

Standard 6: Anatomy and Physiology (0738.S.6)

Students will describe basic structure and function for each system of the human body.

Anatomy and Physiology Objectives

Students will:

- 0738.6.1 Describe homeostasis and how it is affected at the cellular, tissue, organ, and system levels.
- 0738.6.2 Identify and describe the major structures of each body system.
- 0738.6.3 Identify and analyze the major functions of each body system.
- 0738.6.4 Analyze the interdependence of body systems as they relate to wellness, disease, disorders, care, and rehabilitation.
- 0738.6.5 Define, pronounce and spell terms and abbreviations commonly used.
- 0738.6.6 Describe common disorders in body systems and their diagnosis and treatment.

Standard 7: Technology (0738.S.7)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0738.7.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0738.7.2 Utilize the Internet as a resource/research tool.

Standard 8: Student Organization (0738.S.8)

Students will participate in a Career and Technical Student Organization (CTSO)

Students Organization Objectives

Students will:

- 0738.8.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0738.8.2 Apply parliamentary procedure in organizational meetings.
- 0738.8.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0738.8.4 Take part in local, state, and national health care and education projects.

Nutrition and Wellness

WVEIS Code 0739

Within this course students will examine nutrition in relationship to the maintenance and/or restoration of wellness. Components of this course include food composition, nutritional guidelines, therapeutic diets, eating disorders, menu planning, and patient teaching.

Standard 1: Digestive System (0739.S.1)

Students will identify the structures and functions of the digestive system and accessory organs.

Digestive Systems Objectives

Students will:

- 0739.1.1 Identify the parts of the alimentary canal.
- 0739.1.2 Describe the digestive and absorption processes that occur in each organ of the digestive tract.
- 0739.1.3 Explain the function of enzymes in digestion.
- 0739.1.4 Describe the roles of accessory organs in digestion.

Standard 2: Metabolism (0739.S.2)

Students will discuss metabolism and the relationship between metabolism, nutrition, and activity.

Metabolism Objectives

Students will:

- 0739.2.1 Explain the purpose of metabolism and the conditions needed for it to occur.
- 0739.2.2 Explain the role of energy in metabolism.
- 0739.2.3 Compare anabolism and catabolism.
- 0739.2.4 Explain the process that stores and transfers energy in the body.
- 0739.2.5 Relate the influence of various factors to metabolic rate.
- 0739.2.6 Evaluate weight-loss diets and exercise habits in relation to metabolism and health.

Standard 3: Nutrition Basics and Food Composition (0739.S.3)

Students will understand basic nutrition and food composition.

Nutrition Basics and Food Composition Objectives

Students will:

- 0739.3.1 Define nutrition.
- 0739.3.2 Relate the understanding of nutrition to physical well-being.
- 0739.3.3 Define essential nutrients.
- 0739.3.4 Name the six essential nutrients, their function and source.
- 0739.3.5 Describe Recommended Dietary Allowances (RDAs).
- 0739.3.6 List the basic chemical composition of fat, carbohydrates, and protein.
- 0739.3.7 Define carbohydrate, including use and storage in the body.
- 0739.3.8 Summarize how glucose is made available to the body.
- 0739.3.9 Compare and contrast simple and complex carbohydrates.
- 0739.3.10 Contrast healthy blood glucose regulation to the complication of diabetes.
- 0739.3.11 Define lipid, including use and storage in the body.
- 0739.3.12 Explain the three categories of lipids.
- 0739.3.13 Compare and contrast saturated and unsaturated fats.
- 0739.3.14 Define cholesterol, differentiating between cholesterol made by the body and dietary cholesterol.
- 0739.3.15 Explain the relationship between cholesterol and heart disease.
- 0739.3.16 Define LDL and HDL, explaining their relationship to the risk of heart disease.
- 0739.3.17 Define protein, including use and storage in the body.

- 0739.3.18 Define amino acids.
- 0739.3.19 Explain the significance of essential amino acids and complete protein.
- 0739.3.20 Define calorie and state the caloric value of carbohydrate, fat, and protein.
- 0739.3.21 Calculate individual minimum caloric requirement.
- 0739.3.22 Explain the function of vitamins and minerals in the body.
- 0739.3.23 Distinguish between water-soluble and fat soluble vitamins.
- 0739.3.24 Evaluate food as sources of various vitamins and minerals.
- 0739.3.25 Relate vitamin and mineral deficiencies to the diseases that result.

Standard 4: Nutrition Guidelines (0739.S.4)

Students will apply nutritional guidelines in the evaluation and preparation of menus.

Nutrition Guidelines Objectives

Students will:

- 0739.4.1 Explain the Food Guide Pyramid.
- 0739.4.2 Describe what is meant by a serving and give examples.
- 0739.4.3 Discuss the nutritional principles established by the US Department of Agriculture and demonstrate their application.
- 0739.4.4 Plan healthful menus using the Food Guide Pyramid given the age, sex, and activity of the patient.
- 0739.4.5 Summarize the effect of culture and religion on nutrition.
- 0739.4.6 Describe sensory characteristics that affect food preferences.

Standard 5: Therapeutic Diets (0739.S.5)

Students will understand therapeutic diets in relationship to the physiology and pathology of the body.

Therapeutic Diets Objectives

Students will:

- 0739.5.1 Define diet therapy.
- 0739.5.2 Name, describe and explain the purpose of at least eight therapeutic diets.
- 0739.5.3 Discuss life cycles when nutrient requirements change.
- 0739.5.4 Analyze the factors involved in planning diabetic diets.
- 0739.5.5 Summarize the methods used to calculate diabetic diets.
- 0739.5.6 Describe calorie-controlled diets, give examples, and explain when they would be used.
- 0739.5.7 Analyze the factors involved in planning cardiac diets.
- 0739.5.8 Compare cardiac diets and explain how they are used.
- 0739.5.9 Discuss diets for patients with renal disease.
- 0739.5.10 Discuss diets for patients with gastrointestinal diseases.
- 0739.5.11 Discuss diets designed to treat nutritional deficiencies and food allergies.
- 0739.5.12 Demonstrate the proper procedure for planning therapeutic diets.

Standard 6: Regular Diet (0739.S.6)

Students will plan menus, understanding nutritional and caloric requirements.

Regular Diet Objectives

Students will:

- 0739.6.1 Create a sample menu for a regular diet based on nutritional guidelines and caloric requirements.
- 0739.6.2 Calculate the caloric value of the sample menu.
- 0739.6.3 Calculate the nutritional value of the sample menu.
- 0739.6.4 Analyze the information on food labels.
- 0739.6.5 Describe how the information on food labels applies to good nutritional planning.

Standard 7: Eating Disorders (0739.S.7)

Students will describe eating disorders and the appropriate dietary plan for each.

Eating Disorders Objectives

Students will:

- 0739.7.1 Describe types of eating disorders and compare their symptoms.
- 0739.7.2 Assess the factors that contribute to eating disorders.
- 0739.7.3 Discuss the methods of treatment for eating disorders.
- 0739.7.4 Create a dietary plan for a patient with an eating disorder.

Standard 8: Patient Teaching (0739.S.8)

Students will describe the teaching process and plan of care regarding patient nutritional needs.

Patient Teaching Objectives

Students will:

- 0739.8.1 Summarize the health care professional's role in patient teaching regarding nutrition.
- 0739.8.2 Discuss the communication skills necessary for effective patient teaching.
- 0739.8.3 Explain the components of a patient teaching plan.
- 0739.8.4 Analyze the factors that influence patient compliance.
- 0739.8.5 Create a patient teaching plan for selected therapeutic diets.

Standard 9: Technology (0739.S.9)

Students will apply knowledge of computers and their use within the health care system.

Technology Objectives

Students will:

- 0739.9.1 Integrate the use of software, hardware, and the Internet to practice and master standards identified in the course.
- 0739.9.2 Utilize the Internet as a resource/research tool.

Standard 10: Student Organization (0739.S.10)

Students will participate in a Career and Technical Student Organization (CTSO).

Student Organization Objectives

Students will:

- 0739.10.1 Participate in Health Occupations Students of America (HOSA) or SkillsUSA/Vocational Industrial Clubs of America (SkillsUSA/VICA).
- 0739.10.2 Apply parliamentary procedure in organizational meetings.
- 0739.10.3 Demonstrate team membership skills, such as cooperation and leadership.
- 0739.10.4 Take part in local, state, and national health care and education projects.

Lodging Management Program I A

WVEIS Code 1203

The Lodging Management Program (LMP) is a two-year lodging curriculum developed by the Educational Institute of the American Hotel and Lodging Association with input from thousands of lodging professionals across the nation. The courses integrate academic and hands-on activities to provide an overview of the industry and competencies necessary for success in various areas of the lodging industry. Completers of the Lodging Management Program are eligible for a national certificate from the American Hotel and Lodging Association. Students must pass rigorous tests at the end of each course and complete a 400 hour, off-campus, paid internship.

Standard 1: Organization and Structure (1203.S.1)

Students will describe the organization and structure of lodging property management.

Organization and Structure Objectives

Students will:

- 1203.1.1 Identify types of lodging properties.
- 1203.1.2 Define and discuss each type of lodging property.
- 1203.1.3 Group lodging properties based on their purpose, location and guests served.
- 1203.1.4 Identify the classes of lodging properties.
- 1203.1.5 Identify the differences in levels of service provided by each class of lodging property.
- 1203.1.6 Explain lodging property ownership and affiliation differences.
- 1203.1.7 Create an organization chart for a lodging property.
- 1203.1.8 Classify functional areas of a lodging property by revenue or support centers.
- 1203.1.9 Diagram the functional areas of the front-of-the-house and the back-of-the-house at a lodging property.
- 1203.1.10 Create a chart that lists hotel divisions and departments.
- 1203.1.11 Explain the functions of each division and department at a lodging property.

Standard 2: Guest Service (1203.S.2)

Students will explore the elements and strategies of guest services.

Guest Service Objectives

Students will:

- 1203.2.1 Identify the elements of good guest service.
- 1203.2.2 Distinguish between marketing tangible products and intangible products to guests.
- 1203.2.3 Describe the involvement of customers in service.
- 1203.2.4 Describe the concerns of maintaining quality control in relation to guest services.
- 1203.2.5 Distinguish between controlling inventory and controlling guest demand.
- 1203.2.6 Analyze time distribution channels in service.
- 1203.2.7 Explain the role of strategic planning in guest service.
- 1203.2.8 Create a flow chart showing the steps needed in a strategic plan for guest services.
- 1203.2.9 Define moments of truth in guest services.
- 1203.2.10 Set guest services standards for a lodging property.

Standard 3: Careers in Lodging Management Program (1203.S.3)

Students will prepare for positions in the hospitality industry.

Careers in Lodging Management Program Objectives

Students will:

- 1203.3.1 Chart entry, skilled and managerial level positions in the lodging industry.
- 1203.3.2 List the career opportunities available for the lodging and food service industry.
- 1203.3.3 List and discuss career opportunities available with clubs, airlines, cruise lines and travel agencies.

- 1203.3.4 Create a career ladder for the lodging industry.
- 1203.3.5 Complete an application and write a letter of application.
- 1203.3.6 Write a resume.
- 1203.3.7 Participate in the interview process through mock interviews.
- 1203.3.8 Compile a career portfolio.

Standard 4: Front Office Responsibilities (1203.S.4)

Students will identify tasks and demonstrate procedures performed by front office employees.

Front Office Responsibilities Objectives

Students will:

- 1203.4.1 Outline the stages in the guest cycle.
- 1203.4.2 Categorize the events that occur during the guest's pre-approval, arrival, occupancy and departure stages.
- 1203.4.3 Examine the importance of protecting a guest's right to privacy.
- 1203.4.4 Use a logbook to record front office activities.
- 1203.4.5 Explain the importance of good communication skills in front office positions.
- 1203.4.6 Create an information directory.
- 1203.4.7 Create a split folio and master folio.
- 1203.4.8 List types of equipment and supplies loaned to guests and identify property policies for those items.
- 1203.4.9 Demonstrate proper handling of guest mail and packages.
- 1203.4.10 Identify special needs guests and explain roles and responsibilities of the staff.
- 1203.4.11 Categorize the types of guest complaints and create a priority list.
- 1203.4.12 Identify and create policies on how to handle guest complaints.
- 1203.4.13 Develop a follow-up checklist for guest complaints.
- 1203.4.14 Evaluate the role of the front office employees in security.
- 1203.4.15 Define and explain types of keys used and key control measures taken to protect guests.
- 1203.4.16 Outline locking systems and their role in protecting guests.
- 1203.4.17 Create a plan for front desk surveillance, access control, protecting hotel funds and limiting liability of safe deposit boxes.
- 1203.4.18 Describe lost and found procedures and timelines.
- 1203.4.19 Develop emergency response procedures and assign staff responsibilities.

Standard 5: Telecommunications (1203.S.5)

Students will analyze the role of telecommunications in the front office.

Telecommunications Objectives

Students will:

- 1203.5.1 Explain direct-dial calling, operated assisted calls and premium price calls of the guest.
- 1203.5.2 Outline the functions of a PBX system.
- 1203.5.3 Demonstrate how a HOBIC works.
- 1203.5.4 Define a call accounting system.
- 1203.5.5 List types of phones and map their locations at a lodging property.
- 1203.5.6 Take and deliver faxes and messages to the guest.
- 1203.5.7 Demonstrate wake up call procedures and voice mail instructions.
- 1203.5.8 Demonstrate email and TDD technology offered to the guest.

Standard 6: Guest Reservation (1203.S.6)

Students will learn the functions required for making a guest reservation.

Guest Reservation Objectives

Students will:

- 1203.6.1 Define various types of reservations.
- 1203.6.2 List the factors of a binding agreement between the lodging property and a potential guest.
- 1203.6.3 Describe a global distribution system.
- 1203.6.4 Define an intersell agency.
- 1203.6.5 List the ways properties directly receive reservations.
- 1203.6.6 Make a reservation through the internet.
- 1203.6.7 Contrast affiliate and non-affiliate reservations office.
- 1203.6.8 Outline the functions of a central reservation networks.
- 1203.6.9 Access and perform tasks necessary for operating a reservation computer system.
- 1203.6.10 Identify information needed for forecasting occupancy rates.
- 1203.6.11 Calculate percentages of no-shows, walk-ins, overstays and understays.
- 1203.6.12 Create a three-day and ten-day forecast.

Standard 7: Guest Registration Cycle (1203.S.7)

Students will describe the processes involved in the guest registration cycle.

Guest Registration Cycle Objectives

Students will:

- 1203.7.1 Identify the functions and purposes of pre-registration.
- 1203.7.2 Demonstrate the use of guest registration cards.
- 1203.7.3 Describe and chart the flow of registration information throughout the lodging property.
- 1203.7.4 Determine when a room is available for sale and how to communicate room status reports.
- 1203.7.5 List and interpret rate schedules and special room rates.
- 1203.7.6 Demonstrate upselling techniques.
- 1203.7.7 Describe procedures used when turning guests away and referring guest to another property.
- 1203.7.8 Outline complete registration procedures.
- 1203.7.9 Discuss various forms of payment accepted.
- 1203.7.10 Explain property policies on issuing room keys.
- 1203.7.11 Instruct guest about promotional or special incentive programs available to them.
- 1203.7.12 Identify features of the guest accounting module of the computer system.
- 1203.7.13 Create individual, master, non-guest, employee, control, semi-permanent and permanent folios.
- 1203.7.14 Discuss various types of entries that can be made to guest accounts.

Lodging Management Program I B

WVEIS Code 1204

The Lodging Management Program (LMP) is a two-year lodging curriculum developed by the Educational Institute of the American Hotel and Lodging Association with input from thousands of lodging professionals across the nation. The courses integrate academic and hands-on activities to provide an overview of the industry and competencies necessary for success in various areas of the lodging industry. Completers of the Lodging Management Program are eligible for a national certificate from the American Hotel and Lodging Association. Students must pass rigorous tests at the end of each course and complete a 400 hour, off-campus, paid internship.

Standard 1: Guest Checkout (1204.S.1)

Students will learn to perform guest checkout and settlement procedures.

Guest Checkout Objectives

Students will:

- 1204.1.1 Resolve outstanding account balances using various forms of payments.
- 1204.1.2 Update room status.
- 1204.1.3 Create a guest history.
- 1204.1.4 List departure procedures and three methods of check out options.
- 1204.1.5 List the steps involved in internal control.
- 1204.1.6 Complete a front office cash sheet and explain the procedures used for cash banks.
- 1204.1.7 Explain the purpose of a financial records audit.
- 1204.1.8 Complete a daily operations report.
- 1204.1.9 Calculate occupancy ratios and opening ratios.
- 1204.1.10 Interpret room revenue and room division budget reports.

Standard 2: Night Audit (1204.S.2)

Students will demonstrate night audit procedures.

Night Audit Objectives

Students will:

- 1204.2.1 Identify and describe the functions of a night auditor.
- 1204.2.2 Use the basic account posting formula to complete outstanding postings.
- 1204.2.3 Reconcile room status discrepancies and balance departmental revenue.
- 1204.2.4 Verify room rates and no-show reservations.
- 1204.2.5 Post room rates and taxes.
- 1204.2.6 Prepare a cash deposit.
- 1204.2.7 Distribute reports after backing up the system.

Standard 3: Housekeeping (1204.S.3)

Students will explain the functions of the housekeeping department.

Housekeeping Objectives

Students will:

- 1204.3.1 Identify and create a checklist for the cleaning responsibilities of the housekeeping department.
- 1204.3.2 Create an inventory list of work performance standards and a frequency schedule.
- 1204.3.3 Identify steps necessary in staffing and scheduling for the housekeeping department.

Standard 4: Inventory Control in Housekeeping (1204.S.4)

Students will explain the role of inventory control in housekeeping department.

Inventory Control in Housekeeping Objectives

Students will:

- 1204.4.1 Identify how recycled and non-recycled inventories are maintained.
- 1204.4.2 Calculate expected inventories and establish inventory levels.
- 1204.4.3 Identify types of linens and calculate necessary par levels for each type.
- 1204.4.4 Take a physical inventory of linens and describe effective inventory control methods.
- 1204.4.5 Describe purchasing responsibilities of the executive housekeeper.
- 1204.4.6 Identify factors to be considered in an annual linen purchase.

Standard 5: Cleaning Procedures (1204.S.5)

Students will demonstrate correct guest room cleaning procedures.

Cleaning Procedures Objectives

Students will:

- 1204.5.1 Assemble guest room cleaning supplies on a housekeeping cart.
- 1204.5.2 Complete a guest room assignment sheet and a room status report.
- 1204.5.3 Enter a guest room properly.
- 1204.5.4 Perform basic cleaning tasks in a safe and efficient manor and conduct an inspection.
- 1204.5.5 Identify new technology that has affected guest room cleaning.

Standard 6: Laundry Management (1204.S.6)

Students will demonstrate knowledge of on-premise laundry management practices.

Laundry Management Objectives

Students will:

- 1204.6.1 Explain the characteristics of various fabric types.
- 1204.6.2 List the steps in the laundry cycle.
- 1204.6.3 Oversee the collection and transportation of soiled linens.
- 1204.6.4 Demonstrate the proper procedures for sorting, loading, extracting and washing of different linen types.
- 1204.6.5 Demonstrate the proper procedures for drying, ironing, folding and storing linens.
- 1204.6.6 Identify types of commercial laundry equipment.
- 1204.6.7 Outline the importance of a safe preventive maintenance program.

Standard 7: Carpet Maintenance (1204.S.7)

Students will discuss carpet construction and maintenance procedures.

Carpet Maintenance Objectives

Students will:

- 1204.7.1 Identify carpet types and durability factors.
- 1204.7.2 Identify primary and secondary backings used on carpets.
- 1204.7.3 Identify preventative measures and solutions for carpet wicking, shedding, pilling and mildew.
- 1204.7.4 Demonstrate how to use a floor plan and calendars to schedule routine and preventive carpet maintenance.
- 1204.7.5 Identify the types and functions of carpet care equipment.
- 1204.7.6 Demonstrate vacuuming procedures and dry powder cleaning methods.
- 1204.7.7 Identify applications for antimicrobial cleaning methods, electrostatic dissipation treatments and extraction techniques.

Standard 8: Safety, Chemical and Security (1204.S.8)

Students will address safety, chemical and security management in detail.

Safety, Chemical and Security Objectives

Students will:

- 1204.8.1 Identify potentially hazardous conditions present at a lodging property.
- 1204.8.2 Demonstrate safe use of ladders and electrical equipment.
- 1204.8.3 Store, handle and label chemicals properly.
- 1204.8.4 Analyze the safety of housekeeping jobs.
- 1204.8.5 Describe the concerns of using water to clean.
- 1204.8.6 Explain how to use bathroom cleaners safely.
- 1204.8.7 Identify common all-purpose cleaners and their additives.
- 1204.8.8 Compile the safety equipment needed when handling chemicals.
- 1204.8.9 List the five steps needed to comply with the HazComm standard.
- 1204.8.10 Create a hazardous chemicals list for the housekeeping department.
- 1204.8.11 Obtain Material Safety Data Sheets (MSDS) from chemical suppliers.
- 1204.8.12 List and explain possible housekeeping security risks.
- 1204.8.13 Define types of fires and create a safety training procedures plan.

Lodging Management Program II A

WVEIS Code 1205

The Lodging Management Program (LMP) is a two-year lodging curriculum developed by the Educational Institute of the American Hotel and Lodging Association with input from thousands of lodging professionals across the nation. The courses integrate academic and hands-on activities to provide an overview of the industry and competencies necessary for success in various areas of the lodging industry. Completers of the Lodging Management Program are eligible for a national certificate from the American Hotel and Lodging Association. Students must pass rigorous tests at the end of each course and complete a 400 hour, off-campus, paid internship.

Standard 1: Management Styles (1205.S.1)

Students will define various management styles and their functions.

Management Styles Objectives

Students will:

- 1205.1.1 List the challenges managers face in balancing the focus of management with the vision of leadership.
- 1205.1.2 Define empowerment.
- 1205.1.3 Distinguish between centralized and decentralized organizations.
- 1205.1.4 Illustrate why a manager's authority must equal the manager's responsibility.
- 1205.1.5 Define quality service, a guest's perceived value and moments of truth.
- 1205.1.6 Describe a manager's role and responsibility in quality guest service.
- 1205.1.7 Define diversity and the role that it plays for a hospitality manager.
- 1205.1.8 Summarize the Americans with Disabilities Act.
- 1205.1.9 Respond to potential sexual harassment issues.

Standard 2: Communication (1205.S.2)

Students will explain the role and necessity of excellent communication skills in the lodging industry.

Communication Objectives

Students will:

- 1205.2.1 List the seven myths about communication.
- 1205.2.2 Identify ways that managers can improve their communication skills.
- 1205.2.3 Outline the barriers to effective communication.
- 1205.2.4 Outline tips for effective speaking and presentations (formal and informal).
- 1205.2.5 Use visual aids effectively.
- 1205.2.6 List techniques for active listening.
- 1205.2.7 Explain the importance of good business writing.
- 1205.2.8 List basic business writing rules.
- 1205.2.9 Write a standard business letter and business memorandum.

Standard 3: Team Building (1205.S.3)

Students will possess a thorough knowledge of effective team building techniques.

Team Building Objectives

Students will:

- 1205.3.1 Define a team.
- 1205.3.2 Explain the stages of team development.
- 1205.3.3 Describe the roles of individuals as team members.
- 1205.3.4 Create a team using teambuilding techniques.

Standard 4: Career Development (1205.S.4)

Students will prepare a personal career development plan.

Career Development Objectives

Students will:

- 1205.4.1 Discuss the importance of self-assessment.
- 1205.4.2 Recognize the reasons for self-marketing and personal promotion.
- 1205.4.3 Prepare for a first and second interview.
- 1205.4.4 Respond to job offers.

Standard 5: Sales and Marketing (1205.S.5)

Students will discuss hospitality sales and marketing plans.

Sales and Marketing Objectives

Students will:

- 1205.5.1 Explain the difference between marketing and sales.
- 1205.5.2 Identify the roles and responsibilities of the various positions in the sales and marketing department.
- 1205.5.3 Explain the four P's of marketing.
- 1205.5.4 Identify and define lodging market segments.

Standard 6: Marketing Plan (1205.S.6)

Students will create a marketing plan.

Marketing Plan Objectives

Students will:

- 1205.6.1 Identify the components and list the steps used in developing a marketing plan.
- 1205.6.2 Perform a marketing audit.
- 1205.6.3 Explain target markets and positioning.
- 1205.6.4 Describe marketing objectives, action plans and evaluation procedures.

Standard 7: Sales Office (1205.S.7)

Students will explain the functions of a sales office at a lodging property.

Sales Office Objectives

Students will:

- 1205.7.1 List types of meetings and sales records.
- 1205.7.2 Explain the purpose of a function book and guest room control book.
- 1205.7.3 Discuss the various filing systems used in a sales office.
- 1205.7.4 Explain the role of automated systems used to make lists, reports, analyze applications and to provide client information.

Standard 8: Sales Department (1205.S.8)

Students will explain the purpose and functions of the banquet and meeting room sales departments.

Sales Department Objectives

Students will:

- 1205.8.1 Outline the basic responsibilities and duties of banquet department employees.
- 1205.8.2 Explain types of advertising and promotion used in the banquet department.
- 1205.8.3 Identify the different types of food and beverage sales at a lodging property.
- 1205.8.4 List types of meeting rooms and meeting room set-ups.

1205.8.5 Book and manage the meeting room functions of a lodging property.

Lodging Management Program II B

WVEIS Code 1206

The Lodging Management Program (LMP) is a two-year lodging curriculum developed by the Educational Institute of the American Hotel and Lodging Association with input from thousands of lodging professionals across the nation. The courses integrate academic and hands-on activities to provide an overview of the industry and competencies necessary for success in various areas of the lodging industry. Completers of the Lodging Management Program are eligible for a national certificate from the American Hotel and Lodging Association. Students must pass rigorous tests at the end of each course and complete a 400 hour off-campus, paid internship.

Standard 1: Sales Responsibilities (1206.S.1)

Students will explain why selling is everyone's responsibility.

Sales Responsibilities Objectives

Students will:

- 1206.1.1 Identify the importance of training and motivating an employee "to sell" the property's products and service.
- 1206.1.2 Discuss the importance of relationship selling.
- 1206.1.3 Describe what is meant by upgrading, suggestive selling and cross selling.
- 1206.1.4 Illustrate the roles of switchboard operators, reservationists, front desk personnel and food and beverage employees in sales.

Standard 2: Telephone Sales (1206.S.2)

Students will describe the various telephone sales methods.

Telephone Sales Objectives

Students will:

- 1206.2.1 Explain the basis of effective telephone communication.
- 1206.2.2 Make sales, promotional, service and public relations calls.
- 1206.2.3 List and explain the various types of incoming calls.
- 1206.2.4 Describe a telephone sales blitz.
- 1206.2.5 Explain the necessary steps in setting up a telemarketing program.

Standard 3: Hotels and Foodservice Industry (1206.S.3)

Students will describe the relationship between hotels and the food service industry.

Hotels and Foodservice Industry Objectives

Students will:

- 1206.3.1 List and describe the different types of foodservice operations and the markets that they serve.
- 1206.3.2 List the primary departments in a large hotel and define their roles and responsibilities.
- 1206.3.3 Identify various positions held in the food and beverage department and define their individual roles and responsibilities.
- 1206.3.4 Explain the critical role of food sanitation practices in food and beverage operations.

Standard 4: Menu Knowledge (1206.S.4)

Students will demonstrate the importance of menu knowledge to the food and beverage operations.

Menu Knowledge Objectives

Students will:

- 1206.4.1 Describe menu styles and schedules.
- 1206.4.2 List and explain menu types.

1206.4.3 Explain the importance of menu planning, menu design and menu pricing.

Standard 5: Dining and Beverage Service (1206.S.5)

Students will discuss the structure and scope of dining and beverage service.

Dining and Beverage Service Objectives

Students will:

- 1206.5.1 Identify dining service staff positions.
- 1206.5.2 Define dining service styles and procedures.
- 1206.5.3 List the factors that describe superior guest service.
- 1206.5.4 Identify Beverage Service Procedures.
- 1206.5.5 Explain the components of responsible beverage service.

Standard 6: Restaurants (1206.S.6)

Students will discuss the concepts of casual/theme restaurants.

Restaurants Objectives

Students will:

- 1206.6.1 Explain what is meant by a marketing perspective.
- 1206.6.2 Describe how managers set quality standards and deal with training issues.
- 1206.6.3 List typical dining service staff positions and explain their roles and responsibilities.
- 1206.6.4 Identify the steps used in the delivery of guest service.

Standard 7: Banquets (1206.S.7)

Students will book and plan banquets and catered events.

Banquets Objectives

Students will:

- 1206.7.1 Identify elements of a contract or letter of agreement and provide an example of each.
- 1206.7.2 Set up a function room and prepare the staff schedule for the event.
- 1206.7.3 Prepare, plate, hold and serve food at an event.
- 1206.7.4 Identify challenges for delivery service at a function.
- 1206.7.5 Discuss protocol issues.
- 1206.7.6 Explain payment plan options for banquets and catered events.
- 1206.7.7 Discuss the importance of customer feedback after delivery of service.

Standard 8: Room Service (1206.S.8)

Students will explain the purpose and functions of room service operations.

Room Service Objectives

Students will:

- 1206.8.1 List the key elements of a well-managed room service operation.
- 1206.8.2 Evaluate staffing issues and the role of forecasting in staff scheduling.
- 1206.8.3 Demonstrate how to take, route, prepare, deliver and follow-up room service orders.

Standard 9: Internship (1206.S.9)

Students will complete a 400 hour, off-campus, paid internship in a lodging property.

Internship Objectives

Students will:

- 1206.9.1 Develop task performance necessary for success in each functional area as described in the LMP workplace competency checklist.

- 1206.9.2 Develop work habits necessary for success in each functional area as described in the LMP workplace competency checklist.
- 1206.9.3 Develop the applied knowledge necessary for success in each functional area as described in the LMP workplace competency checklist.

Advertising

WVEIS Code 0401

This course focuses on the purpose of the promotional strategy of advertising and its role in the marketing environment. Emphasis is placed on the different types of print, broadcast and specialty media, and the advantages and disadvantages of each type. This course will also give an overview of other promotional tools used in the marketing arena.

Standard 1: Fundamentals of Marketing (0401.S.1)

Describe the Fundamentals of Marketing.

Fundamentals of Marketing Objectives

Students will:

- 0401.1.1 Define the role of marketing and its importance.
- 0401.1.2 Explain the functions of marketing.
- 0401.1.3 State the marketing concept.
- 0401.1.4 Describe the economic benefits of marketing.
- 0401.1.5 Identify the 4 P's of the marketing mix.
- 0401.1.6 Illustrate the use of product positioning.
- 0401.1.7 Analyze variables in both the consumer and industrial markets (demographics, geographics, psychographics) that determine the target market.
- 0401.1.8 Construct a customer profile.

Standard 2: Promotion (0401.S.2)

Define Promotion.

Promotion Objectives

Students will:

- 0401.2.1 Explain the role of promotion.
- 0401.2.2 Explain the concept of the promotional mix.
- 0401.2.3 Develop a promotional plan.
- 0401.2.4 Evaluate ethical standards of various promotional media.
- 0401.2.5 Distinguish between advertising, publicity, sales promotion and visual merchandising.

Standard 3: Advertising as a Promotional Tool (0401.S.3)

Explore Advertising as a Promotional Tool.

Advertising as a Promotional Tool Objectives

Students will:

- 0401.3.1 Identify the characteristics and benefits of advertising.
- 0401.3.2 Explore advertising careers.
- 0401.3.3 Explore the history of advertising.
- 0401.3.4 Differentiate between the roles of an advertising agency and an in-house advertising department.
- 0401.3.5 Describe how the advertising agency industry is regulated.

Standard 4: Advertising Media (0401.S.4)

Analyze Various Types of Advertising Media.

Advertising Media Objectives

Students will:

- 0401.4.1 Identify the various types of media.
- 0401.4.2 Analyze the advantages and disadvantages of each type of media.

- 0401.4.3 Select the appropriate media for the target market.
- 0401.4.4 Identify standards for selecting advertising media.
- 0401.4.5 Evaluate the effectiveness of advertising media.

Standard 5: Advertising Budget (0401.S.5)

Describe the Purpose of an Advertising Budget.

Advertising Budget Objectives

Students will:

- 0401.5.1 Identify methods of advertising budgeting.
- 0401.5.2 Calculate media costs.
- 0401.5.3 Develop a budget.
- 0401.5.4 Develop an advertising schedule.
- 0401.5.5 Explain the role of advertising as an investment.
- 0401.5.6 Explain placement costs for print and broadcast advertisements.

Standard 6: Advertisement Development (0401.S.6)

Develop Advertisements.

Advertisement Development Objectives

Students will:

- 0401.6.1 Identify the parts of a print advertisement.
- 0401.6.2 Create advertising headlines.
- 0401.6.3 Write advertising body copy.
- 0401.6.4 Analyze illustrations.
- 0401.6.5 Choose appropriate styles of typeface.
- 0401.6.6 Explain the levels of Maslow's Hierarchy of needs.
- 0401.6.7 Illustrate the types of eye flow patterns.
- 0401.6.8 Differentiate between the optical center and focal point.
- 0401.6.9 Explain the steps of developing print advertisements.
- 0401.6.10 Develop an advertisement layout.
- 0401.6.11 Develop a television storyboard.
- 0401.6.12 Write a radio commercial.
- 0401.6.13 Explain the psychological use of lines.
- 0401.6.14 Demonstrate the use of color in advertising.
- 0401.6.15 Create a slogan, logo and signature.
- 0401.6.16 Describe how to check advertising proofs.

Standard 7: Visual Merchandising as a Promotional Tool (0401.S.7)

Create a Visual Merchandising Display.

Visual Merchandising Objectives

Students will:

- 0401.7.1 Identify the characteristics and benefits of visual merchandising.
- 0401.7.2 Identify window and interior display arrangements.
- 0401.7.3 Illustrate types of display patterns of arrangements.
- 0401.7.4 Explain how exterior and interior features contribute to the store's image.
- 0401.7.5 Identify the artistic considerations in display preparations.
- 0401.7.6 Select display fixtures.
- 0401.7.7 Design a display sign.
- 0401.7.8 Select merchandise for display.

- 0401.7.9 Create a display.
- 0401.7.10 Describe the procedures for maintaining and dismantling displays.

Standard 8: Public Relations/Publicity as a Promotional Tool (0401.S.8)

Define Public Relations/Publicity as a Promotional Tool.

Public Relations/Publicity Objectives

Students will:

- 0401.8.1 Identify the characteristics and benefits of public relations.
- 0401.8.2 Identify the audiences for public relations.
- 0401.8.3 Explain the importance of company participation in community activities.
- 0401.8.4 Write a media release.

Standard 9: Technology (0401.S.9)

Explore the Use of Technology in Promotion.

Technology Objectives

Students will:

- 0401.9.1 Identify technology-based promotion.
- 0401.9.2 Utilize software applications in the development of promotional tools.

Standard 10: Sales Promotion as a Promotional Tool (0401.S.10)

Define Sales Promotion as a Promotional Tool.

Sales Promotion Objectives

Students will:

- 0401.10.1 Identify the characteristics and benefits of sales promotion.
- 0401.10.2 Differentiate between the various types of sales promotion.
- 0401.10.3 Analyze the advantages and disadvantages of the various types of sales promotion.
- 0401.10.4 Select appropriate sales promotion.
- 0401.10.5 Develop a sales promotion.
- 0401.10.6 Evaluate the effectiveness of a sales promotion.
- 0401.10.7 Justify the need for sponsorship.

Economics of Business

WVEIS Code 0404

This course focuses on the impact of economics as it relates to businesses and individuals. Because businesses are part of the overall economy, the success of any individual business is strongly affected by events in the economy as a whole. In addition, the economy as a whole is affected by the actions of the individual members within it.

Standard 1: Economic Principles (0404.S.1)

Describe the importance of economic principles in today's society.

Economic Principles in Today's Society Objectives

Students will:

- 0404.1.1 Identify opportunity costs and trade-offs involved in making choices about how to use scarce economic resources.
- 0404.1.2 Give examples of economic wants and needs.
- 0404.1.3 Identify the resources (factors of production) that are used to satisfy wants and needs.
- 0404.1.4 Define economic goods and services.
- 0404.1.5 Explain how the concept of scarcity affects the availability of economic goods and services.

Standard 2: Productivity, Specialization and Division of Labor Change (0404.S.2)

Explain the importance of productivity and discuss how specialization and division of labor change productivity.

Productivity, Specialization and Division of Labor Change Objectives

Students will:

- 0404.2.1 Analyze the methods of increasing productivity.
- 0404.2.2 Demonstrate specialization and division of labor.
- 0404.2.3 Explain how the relationship of input to output affects the level of productivity.

Standard 3: Basic Economic Systems Differences (0404.S.3)

Explain why societies develop economic systems and identify the basic features of different economic systems.

Basic Economic Systems Differences Objectives

Students will:

- 0404.3.1 Explain why a society needs an economic system.
- 0404.3.2 Discuss advantages and disadvantages of different types of economic systems.
- 0404.3.3 Discuss how an economic system addresses the questions what is to be produced, how it is to be produced, and for whom.

Standard 4: Role of Core U.S. Economic Institutions and Incentives (0404.S.4)

Explain the role of core economic institutions and incentives in the U.S. economy.

Core U.S. Economic Institutions and Incentives Objectives

Students will:

- 0404.4.1 Describe the concept of profit in the free enterprise system.
- 0404.4.2 Provide examples of economic institutions and incentives.
- 0404.4.3 Analyze reasons why a society's allocation of resources will be affected by its laws, public policy, and taxation.

Standard 5: Role of Exchange and Money (0404.S.5)

Explain the role of exchange and money in an economic system and describe the effect of interdependence on economic activity.

Role of Exchange and Money Objectives

Students will:

- 0404.5.1 Demonstrate the concept of barter.
- 0404.5.2 Explain why and illustrate how money can contribute to an increased number of exchanges, greater specialization and interdependence, and a higher standard of living in an economy.

Standard 6: Role of Supply and Demand as related to Markets and Prices in the U.S (0404.S.6)

Describe the role of law of supply and demand in the U.S. economy.

Role of Markets and Prices in the U.S. Economy Objectives

Students will:

- 0404.6.1 Define the concept of supply and demand.
- 0404.6.2 Analyze prices as determined by supply and demand.
- 0404.6.3 Identify determinants of supply and demand for goods and services.
- 0404.6.4 Describe how relative prices affect buying and selling decisions of producers and consumers.
- 0404.6.5 Graph the concept of price on a supply and demand curve.

Standard 7: Types of Competitive Structures and Markets (0404.S.7)

Describe different types of competitive structures and illustrate the role of competitive markets in the U.S. and other economies.

Types of Competitive Structures and Markets Objectives

Students will:

- 0404.7.1 Explain how competition among sellers affects prices and profits.
- 0404.7.2 Determine the role of government in preventing private monopolies and regulating public monopolies.
- 0404.7.3 Research U.S. laws and government regulations that are designed to maintain competition.
- 0404.7.4 Compare and contrast price and non-price competition.

Standard 8: Personal Financial Resources and Consumer Decisions (0404.S.8)

Manage limited personal financial resources and recognize that more of the wants and needs of members of a society can be satisfied if wise consumer decisions are made.

Personal Financial Resources and Consumer Decisions Objectives

Students will:

- 0404.8.1 Analyze the consumer decision making process for products and explain why there is variance in price for a given item bought from different suppliers.
- 0404.8.2 Use published consumer resources to collect information for making buying decisions.
- 0404.8.3 Identify sources and types of credit.
- 0404.8.4 Calculate the cost of credit.
- 0404.8.5 Develop a plan to allocate financial resources to meet an individual's financial goals.
- 0404.8.6 Describe the advantages and disadvantages of different saving and investing plans.
- 0404.8.7 Identify services that financial institutions provide to customers.
- 0404.8.8 Perform the steps involved in opening and using a checking account.
- 0404.8.9 Reconcile a bank statement.

Standard 9: U.S. Economy Functions and Measures (0404.S.9)

Explain how the U.S. economy functions as a whole and describe economic measures of economic activity such as gross domestic product, unemployment and inflation.

U.S. Economy Functions and Measures of Activities Objectives

Students will:

0404.9.1 Explain the Consumer Price Index.

0404.9.2 Analyze the factors that affect Gross Domestic Product.

Standard 10: Role of Government in an Economic System (0404.S.10)

Discuss the role of government in an economic system, especially the necessary and desirable role of government in the U.S. economy.

Role of Government in an Economic System Objectives

Students will:

0404.10.1 Explain how government taxation affects consumers and producers.

0404.10.2 Define and give examples of progressive, regressive, and proportional taxes.

0404.10.3 Analyze the effect of national debt on the level of economic activity.

Standard 11: U.S. Economy Citizens Rights and Responsibilities (0404.S.11)

Describe rights and responsibilities of citizens in the U.S. economy.

U.S. Economy Citizens Rights and Responsibilities Objectives

Students will:

0404.11.1 Identify consumer rights.

0404.11.2 Describe how legislation defines and protects consumer rights.

0404.11.3 Examine how society's needs are balanced against the individual's rights and responsibilities.

0404.11.4 Explain how consumer legislation affects product.

0404.11.5 Distinguish between fraudulent, misleading, and legitimate product claims.

Standard 12: Economic Relationships Among Nations (0404.S.12)

Examine the importance of economic relationships among nations and discuss the role of international trade and investment and international monetary relations in the global economy.

Economic Relationships Among Nations Objectives

Students will:

0404.12.1 Explain the importance of imports and exports in a global economy.

0404.12.2 Identify examples of goods and services that imported and exported.

0404.12.3 Explain foreign exchange rates and why the value of currency changes.

0404.12.4 Explain the advantages and disadvantages of free trade agreements between and among nations.

Fashion Marketing

WVEIS Code 0407

This course is designed for students to gain basic knowledge of the fashion marketing industry and provide the learner with skills for a career in the field of Fashion Marketing.

Standard 1: Nature of Fashion (0407.S.1)

Explore the Nature of Fashion.

Nature of Fashion Objectives

Students will:

0407.1.1 Explain the concept of fashion in terms of apparel, home fashion and accessories.

0407.1.2 Explain the components of fashion.

Standard 2: Fundamentals of Marketing (0407.S.2)

Describe the Fundamentals of Marketing.

Fundamentals of Marketing Objectives

Students will:

0407.2.1 Define the role of marketing and its importance.

0407.2.2 List examples of marketing functions and related activities.

0407.2.3 Differentiate between the concepts of marketing segmentation, niche and mass marketing.

0407.2.4 Identify the elements of the marketing mix.

0407.2.5 Demonstrate the flow of products in the channel of distribution.

0407.2.6 State the marketing concept.

Standard 3: History and Trends of Fashion (0407.S.3)

Explore the History and Trends of Fashion.

History and Trends of Fashion Objectives

Students will:

0407.3.1 Research and describe the theories of the origin of fashion.

0407.3.2 Describe the influence of historical events on fashion.

0407.3.3 Analyze the influences that economic, culture, social, political, geographic and psychological factors have on fashion.

0407.3.4 Explain the use and importance of fashion cycles.

0407.3.5 Differentiate between fashion trends, fads and classics.

0407.3.6 Identify current trends in fashion.

Standard 4: Color and Design Fundamentals (0407.S.4)

Analyze Color and Design Fundamentals.

Color and Design Fundamentals Objectives

Students will:

0407.4.1 Describe elements and principles of line and design.

0407.4.2 Discuss how to use design to create illusions that enhance appearance.

0407.4.3 Analyze standardized sizing in the fashion industry.

0407.4.4 Explain the principles of color psychology and symbolism and its relationship to fashion.

0407.4.5 Identify purpose of color wheel and analyze color schemes.

Standard 5: Textile Characteristics (0407.S.5)

Evaluate Textile Characteristics.

Textile Characteristics Objectives

Students will:

- 0407.5.1 Identify the characteristics of natural and man-made fibers.
- 0407.5.2 Describe the relationship between fabric characteristics and product use.
- 0407.5.3 Identify the most common fabric constructions.

Standard 6: Economic Principles as Related to the Fashion Industry (0407.S.6)

Describe the Importance of Economic Principles as it relates to the Fashion Industry.

Economic Principles Objectives

Students will:

- 0407.6.1 Differentiate between goods and services.
- 0407.6.2 Discuss advantages and disadvantages of the different types of economic systems.
- 0407.6.3 Explain the concept of profit.
- 0407.6.4 Discuss the benefits of competition.
- 0407.6.5 Analyze the law of supply and demand.
- 0407.6.6 Examine the relationship between cost and price.
- 0407.6.7 Explain utility.

Standard 7: Communication Skills (0407.S.7)

Enhance Communication Skills.

Communication Skills Objectives

Students will:

- 0407.7.1 Explain the importance of verbal and nonverbal communication.
- 0407.7.2 Demonstrate proper telephone communication skills.
- 0407.7.3 Use effective writing skills.

Standard 8: Customer Service Skills (0407.S.8)

Develop Customer Service Skills.

Customer Service Skills Objectives

Students will:

- 0407.8.1 Explain the importance of customer service as it relates to a retail business.
- 0407.8.2 Demonstrate procedures for handling customer complaints.
- 0407.8.3 Handle multiple tasks simultaneously.
- 0407.8.4 Interpret company policies to customers.

Standard 9: Principles of Selling (0407.S.9)

Apply the Principles of Selling.

Principles of Selling Objectives

Students will:

- 0407.9.1 Identify the steps in the selling process.
- 0407.9.2 Identify and explain the different approaches of opening a sale.
- 0407.9.3 Conduct a sales presentation for a product or service.

- 0407.9.4 Choose the proper method of handling objections in order to close a sale.
- 0407.9.5 Identify and explain the different types of closing a sale.
- 0407.9.6 Explore various sales careers in the fashion industry.
- 0407.9.7 Apply textile knowledge to a sales presentation.

Standard 10: Careers in Fashion Marketing (0407.S.10)

Research Careers in Fashion Marketing.

Careers in Fashion Marketing Objectives

Students will:

- 0407.10.1 Identify personal traits important in a fashion career.
- 0407.10.2 Identify career opportunities in fashion sales, textiles and manufacturing industries.
- 0407.10.3 Identify an acceptable fashion image for work, school and social activities.

Standard 11: Technology in the Fashion Industry (0407.S.11)

Explore Technology in the Fashion Industry.

Fashion Industry Technology Objectives

Students will:

- 0407.11.1 Investigate computer technology applications in fashion marketing.
- 0407.11.2 Identify computer technology used in fashion/fabric design and production.

Standard 12: Principles of Promotion (0407.S.12)

Demonstrate the Principles of Promotion.

Principles of Promotion Objectives

Students will:

- 0407.12.1 Identify the elements of the promotional mix in fashion marketing.
- 0407.12.2 Analyze types of media used in fashion retail advertising.
- 0407.12.3 Identify the parts of a print advertisement.
- 0407.12.4 Prepare a broadcast advertisement.
- 0407.12.5 Analyze visual merchandising displays using the elements of display arrangements, color schemes, display background, mannequins and lighting.

Standard 13: Workplace Skills (0407.S.13)

Develop Job-Seeking, Job-Keeping and Job Learning Skills for the Workplace.

Job-Seeking, Job-Keeping and Job Learning Objectives

Students will:

- 0407.13.1 Explain the concept of work ethics.
- 0407.13.2 Explain the importance of positive working relationships and employer expectations.
- 0407.13.3 Complete the procedures for obtaining employment (resume, cover letter, job application, job search, interview, follow-up letter).

Standard 14: Risk Management (0407.S.14)

Explore Risk Management.

Risk Management Objectives

Students will:

- 0407.14.1 Identify the impact of internal theft and shoplifting.
- 0407.14.2 Demonstrate basic safety rules relevant to job safety.
- 0407.14.3 Describe the first aid measures to be used in case of an emergency or accident.
- 0407.14.4 Classify type A, B, and C fires and describe their characteristics in order to extinguish them properly.

Standard 15: Inventory Control Procedures (0407.S.15)

Describe Inventory Control Procedures.

Inventory Control Procedure Objectives

Students will:

- 0407.15.1 Describe the importance of inventory control.
- 0407.15.2 Describe receiving procedures.
- 0407.15.3 Explain procedures used to issue items and keep track of inventory.

Standard 16: Fashion Market Centers and Designers (0407.S.16)

Identify Fashion Market Centers and Designers.

Fashion Market Centers and Designers Objectives

Students will:

- 0407.16.1 Identify domestic fashion market centers.
- 0407.16.2 Identify international fashion market centers.
- 0407.16.3 Recognize influential fashion designers.

International Business and Marketing

WVEIS Code 0410

This course is for students with a career interest in the field of international trade or for students who intend to pursue a business/marketing degree. This course provides students with an understanding of the various careers in international trade, finance and marketing. Fundamental concepts, principles, and theories of marketing in an international setting are considered.

Standard 1: Role of International Business (0410.S.1)

Explain the Role of International Business.

Role of International Business Objectives

Students will:

- 0410.1.1 Identify examples of international trade in the local and state community.
- 0410.1.2 Describe the impact of international business activities on the local, regional and national levels.
- 0410.1.3 Analyze the impact of a domestic company involving itself in international trade opportunities.
- 0410.1.4 Describe the resources (e.g., ports, trade routes, transportation centers, foreign trade zones and natural, financial, and human resources) of major cities around the world.
- 0410.1.5 Identify business opportunities in countries in various levels of economic development.

Standard 2: Communication Strategies (0410.S.2)

Apply Communication Strategies in International Business Relations.

Communication Strategies Objectives

Students will:

- 0410.2.1 Compose effective business communications.
- 0410.2.2 Analyze international business blunders resulting from ineffective or incorrect communication patterns.
- 0410.2.3 Identify international cultural differences in food, dress, social behaviors and language.
- 0410.2.4 Compare business protocol of various countries.
- 0410.2.5 State examples of non-verbal communication affecting international businesses.

Standard 3: Social, Cultural, Political, Legal, and Economic Factors (0410.S.3)

Describe Factors That Shape and Impact the International Business Environment.

Social, Cultural, Political, Legal and Economic Factors that Impact the International Business Environment Objectives

Students will:

- 0410.3.1 Identify distinctive social and cultural factors affecting business activities (e.g. time, workday, workweek, schedules, holidays).
- 0410.3.2 Describe how trade barriers, tariffs, quotas and taxation policies affect choice of location for companies operating internationally.
- 0410.3.3 Recognize legal differences that exist between and among countries in areas such as consumer protection, product guidelines, labor laws, contract formulation, liability and taxation.
- 0410.3.4 Define terms such as GDP (GNP), balance of trade, foreign debt and cost of living.
- 0410.3.5 Analyze the availability of resources and economic potential in various countries.
- 0410.3.6 Identify the economic systems used to decide what to produce, how it is produced, and for whom it is produced in a country.
- 0410.3.7 Evaluate the competitive strengths and weaknesses faced by a company involved in international business.

Standard 4: International Finance and Risk Management (0410.S.4)

Explain the Role, Importance, and Concepts of International Finance and Risk Management.

International Finance and Risk Management Objectives

Students will:

- 0410.4.1 Explain how currency exchange rates affect companies.
- 0410.4.2 Identify risks associated with international trade.

Standard 5: Operations and Management of Human Resources (0410.S.5)

Address the Operations and Management of Human Resources.

Operations and Management of Human Resources Objectives

Students will:

- 0410.5.1 Describe the production processes used to create goods and services in different countries.
- 0410.5.2 Discuss factors that influence the type of merchandise/inventory control systems used by companies operating internationally.
- 0410.5.3 Identify the factors that influence the application of managerial styles in different countries.
- 0410.5.4 Describe how compensation and employee benefits differ in various cultures.
- 0410.5.5 Identify how differences in occupational health and safety standards impact the conduct of business internationally.

Standard 6: Marketing Concepts (0410.S.6)

Apply Marketing Concepts to International Business.

Marketing Concepts Objectives

Students will:

- 0410.6.1 Describe how a company markets a product/service in other countries.
- 0410.6.2 Illustrate how social, cultural, technological and geographic factors influence consumer buying behavior in different countries.
- 0410.6.3 Evaluate market potential for a good or service in a foreign market.
- 0410.6.4 Describe how the marketing mix elements need to be adapted for international marketing efforts.
- 0410.6.5 Analyze buying patterns of consumers in a foreign market.
- 0410.6.6 Explain how the marketing research process, including data collection, differs in an international application.
- 0410.6.7 Give examples of countries that have absolute and comparative advantage.
- 0410.6.8 Explain how brands and packages are affected by culture.
- 0410.6.9 Explain how the business environment affects prices charged in foreign markets.
- 0410.6.10 Select distribution channels for a company involved in international business.
- 0410.6.11 Discuss media used in different foreign markets.
- 0410.6.12 Analyze the influence of social and cultural factors affecting promotions used in foreign markets.

Standard 7: Trade Concepts in the Import/Export Process (0410.S.7)

Relate Balance of Trade Concepts to the Import/Export Process.

Trade Concepts Objectives

Students will:

- 0410.7.1 Identify goods and services imported to or exported from a country.
- 0410.7.2 Analyze the import or export potential for a good or service.

- 0410.7.3 Describe the role that U.S. Customs and the customs agencies of other countries play in international trade activities.
- 0410.7.4 Define why trade barriers are imposed by governments (such as quotas, tariffs, licensing requirements, exchange rate controls).
- 0410.7.5 Describe international trade agreements (e.g., GATT, NAFTA).

Standard 8: Business Ownership and Entrepreneurial Opportunities (0410.S.8)

Identify Forms of Business Ownership and Entrepreneurial Opportunities.

Forms of Business Ownership and Entrepreneurial Opportunities Objectives

Students will:

- 0410.8.1 Analyze various forms of business ownership (e.g., sole proprietorship, corporation, partnership) for different international business situations.
- 0410.8.2 Determine social and cultural influences on the form of business ownership used or required in different countries.
- 0410.8.3 Identify potential new international business ventures for locally based companies.
- 0410.8.4 Distinguish between licensing and franchising for international business activities.

Standard 9: Technology in International Business. (0410.S.9)

Identify Technology Utilized in International Business.

Technology in International Business Objectives

Students will:

- 0410.9.1 Describe how the use of technology impacts the global market.
- 0410.9.2 Identify global e-commerce legal issues.

Introduction to Business and Marketing

WVEIS Code 0413

This course is an introduction course that explores careers in business and marketing, the role of marketing in today's business world and a broad overview of economics.

Standard 1: Careers in Business and Marketing (0413.S.1)

Explore Careers in Business and Marketing.

Careers Objectives

Students will:

- 0413.1.1 Research and present information regarding careers in business and marketing.
- 0413.1.2 Explain how economic trends affect employment in business and marketing careers.
- 0413.1.3 Complete an interest survey to determine potential career options.

Standard 2: Private Enterprise System (0413.S.2)

Define and Explain How the Market Works in a Private Enterprise System.

Private Enterprise Objectives

Students will:

- 0413.2.1 Explore the benefits businesses provide to the economy.
- 0413.2.2 Compare and contrast the private enterprise system with other economic systems.
- 0413.2.3 Distinguish between consumer needs and wants and how they are satisfied.
- 0413.2.4 Explain how consumers affect the supply and demand for goods and services.
- 0413.2.5 Explain how prices affect consumers and producers.
- 0413.2.5 Describe the economic resources used in the production of goods and services.
- 0413.2.6 Identify and discuss economic measurements.
- 0413.2.7 Describe the four phases of the business cycle.

Standard 3: Social and Ethical Environment of Business (0413.S.3)

Explore Policies of a Diverse Workforce in Business and Marketing.

Social and Ethical Environment Objectives

Students will:

- 0413.3.1 Describe reasons for layoffs and downsizing.
- 0413.3.2 Write a job description.
- 0413.3.3 Discuss on-the-job policies dealing with diversity, drug use on the job, theft in the workplace and sexual harassment.
- 0413.3.4 Identify the functions, levels and responsibilities of managers.
- 0413.3.5 Discuss the pros, cons and implications of unionization.
- 0413.3.6 Explain what is meant by the social responsibilities of business.

Standard 4: Financial Management (0413.S.4)

Demonstrate the Handling of Business Finances.

Financial Management Objectives

Students will:

- 0413.4.1 Explain the types and purposes of financial statements.
- 0413.4.2 Describe the responsibilities of the Federal Reserve System.
- 0413.4.3 Calculate interest and finance charges.
- 0413.4.4 Identify the purpose, process and implications of obtaining credit.

- 0413.4.5 Identify laws that protect the consumer when applying for credit.
- 0413.4.6 Prepare a personal budget.
- 0413.4.7 Reconcile a bank statement.
- 0413.4.7 Obtain information regarding services provided by a financial institution.
- 0413.4.8 Identify the purpose and types of insurance.

Standard 5: Role of Marketing (0413.S.5)

Define the Role of Marketing in Today's World.

Role of Marketing Objectives

Students will:

- 0413.5.1 Apply the four elements of the marketing mix to products and services.
- 0413.5.2 Identify the stages of the product life cycle.
- 0413.5.3 Determine the appropriate channel of distribution for products.
- 0413.5.4 Identify the steps of pricing.
- 0413.5.5 Identify the functions of marketing.

Standard 6: Business Structure

Explore Development and Maintenance of a Business.

Business Structure Objectives

Students will:

- 0413.6.1 Identify unique characteristics of an entrepreneur.
- 0413.6.2 Compare and contrast the advantages and disadvantages of the types of business ownerships.
- 0413.6.3 Discuss the opportunities available to an entrepreneur.
- 0413.6.4 Identify the parts of a business plan and the components.

Standard 7: Government and Business Relationships (0413.S.7)

Explore the Relationship Between Government and Business.

Relationship Between Government and Business Objectives

Students will:

- 0413.7.1 Examine regulations that are encountered when starting a small business.
- 0413.7.2 Distinguish between progressive, proportional and regressive taxes.

Standard 8: International Business (0413.S.8)

Define the Importance of International Business in the Market Place.

International Business Objectives

Students will:

- 0413.8.1 Discuss the pros and cons of free trade.
- 0413.8.2 List examples of United States imports and exports.
- 0413.8.3 Identify specific products that currently are subject to government trade policies.
- 0413.8.4 Compare and contrast the economic systems.
- 0413.8.5 Identify benefits and challenges to competition in the international marketplace.

Standard 9: Role of a Consumer (0413.S.9)

Identify the Role of a Consumer in Business and Marketing.

Role of a Consumer Objectives

Students will:

- 0413.9.1 Describe choices consumers make when buying goods and services.
- 0413.9.2 Discuss the basic rights and responsibilities of a consumer.
- 0413.9.3 Research why regulations are implemented and the effects the regulations have on consumer safety.

Management and Entrepreneurship

WVEIS Code 0416

This course provides a background for the development and operation of a business starting with the role of the entrepreneur in our economy to the development of a business plan and the application of specific marketing skills and concepts within the business environment. This course also explores the planning, organizing and controlling of a business, including organizational and human aspects, with emphasis on various theories of management, the knowledge and understanding necessary for managing people and functions, and decision making.

Standard 1: Careers in Supervision and Management (0416.S.1)

Explore the career of a supervisor/manager.

Supervision and Management Career Objectives

Students will:

- 0416.1.1 Identify unique characteristics of an entrepreneur.
- 0416.1.2 Compare and contrast the scientific management, functional, human relations/behavioral school and quantitative approaches of management.
- 0416.1.3 Identify the characteristics of a successful supervisor/manager.
- 0416.1.4 Identify and discuss the major demographic and societal trends that will affect supervisors/managers in the future.
- 0416.1.5 Summarize the difficulties supervisors/managers face in fulfilling managerial roles.

Standard 2: Managerial Functions of Supervision (0416.S.2)

Apply the managerial functions to a supervisor or manager's role.

Managerial Function Objectives

Students will:

- 0416.2.1 Describe and apply the basic steps of the decision-making process.
- 0416.2.2 Discuss the functions utilized in management.
- 0416.2.3 Write a mission statement for a business or department.
- 0416.2.4 Identify examples of strategic plans, tactical plans and operational plans.
- 0416.2.5 Explain the concept of a chain of command.

Standard 3: Management Communication Skills (0416.S.3)

Explain the importance of effective communication in the manager's role.

Effective Communication Objectives

Students will:

- 0416.3.1 Define communication and discuss its implication for effective management in the manager's role.
- 0416.3.2 Diagram the communication process and explain the importance of each component to the process.
- 0416.3.3 Identify barriers to communication and suggest methods to overcome those barriers.
- 0416.3.4 Compare and contrast the formal, informal, horizontal and vertical channels of communication.
- 0416.3.5 Demonstrate effective communication skills.

Standard 4: Employee Motivation (0416.S.4)

Apply employee motivational factors to the manager's role.

Employee Motivation Objectives

Students will:

- 0416.4.1 Compare various motivation theories and explain their importance for understanding employee behavior.
- 0416.4.2 Analyze the application of Theory X and Theory Y in motivating employees.
- 0416.4.3 Classify motivational factors according to Maslow's hierarchy of needs.
- 0416.4.4 Define job rotation, job enlargement, and job enrichment and their implications in motivating employees.
- 0416.4.5 Investigate the significance of Total Quality Management (TQM).
- 0416.4.6 Explain the concept of authority, responsibility and power as a requirement of any managerial position.
- 0416.4.7 Define delegation, responsibility and accountability and describe their relationship with one another.

Standard 5: Entrepreneurship (0416.S.5)

Explore the role of an entrepreneur.

Entrepreneur Objectives

Students will:

- 0416.5.1 Compare and contrast the advantages and disadvantages of the types of ownership.
- 0416.5.2 Identify entrepreneurial opportunities.
- 0416.5.3 Analyze the parts of a business plan and components included in each part.
- 0416.5.4 Write and present a business plan for a small business.

Standard 6: Marketing Plan (0416.S.6)

Write a marketing plan for a small business.

Marketing Plan Objectives

Students will:

- 0416.6.1 Complete a demographic study to determine a market.
- 0416.6.2 Determine market potential.
- 0416.6.3 Identify direct and indirect competition.
- 0416.6.4 Evaluate competitive strengths and weaknesses.
- 0416.6.5 Explain the importance of choosing a proper location for a business.
- 0416.6.6 Describe the different types of goods and services.
- 0416.6.7 State the marketing concept.
- 0416.6.8 Utilize market segmentation and target marketing.
- 0416.6.9 Identify and apply the components of the marketing mix.
- 0416.6.10 Evaluate the importance of price.
- 0416.6.11 Describe different pricing strategies.
- 0416.6.12 Calculate price.
- 0416.6.13 Describe the steps in the selling process.

Standard 7: Financial Plan (0416.S.7)

Write a financial plan for a small business.

Financial Plan Objectives

Students will:

- 0416.7.1 Analyze the components of a financial plan.
- 0416.7.2 Compute capital needs.

- 0416.7.3 Prepare financial statements (income statement, balance sheet, statement of cash flow).
- 0416.7.4 Analyze financial statements to ascertain financial health of a business.
- 0416.7.5 Identify parts of an accounting system.
- 0416.7.6 Write a personal resume.
- 0416.7.7 Calculate personal net worth.
- 0416.7.8 Identify personal/financial assets available to collateralize.
- 0416.7.9 List potential sources of funds for a business.

Standard 8: Management Plan (0416.S.8)

Write a management plan for a small business.

Management Plan Objectives

Students will:

- 0416.8.1 Compare and contrast types of business ownership.
- 0416.8.2 Develop an organizational chart.
- 0416.8.3 Explain how small businesses recruit effectively.
- 0416.8.4 Prioritize staffing needs.
- 0416.8.5 Identify motivational techniques for employees.
- 0416.8.6 Explain employment laws.
- 0416.8.7 Monitor results of revenue and explain its impact on inventory, personnel, insurance and promotion.
- 0416.8.8 Analyze inventory procedures.
- 0416.8.9 Identify resources available for small business assistance.
- 0416.8.10 Identify government regulations.
- 0416.8.11 Research business risks and prevention control.
- 0416.8.12 List and explain components of a legally enforceable contract.
- 0416.8.13 Discuss business ethics and social responsibility.

Marketing Principles I

WVEIS Code 0422

This course includes instructional areas designed to provide an understanding of the fundamental marketing processes and the role of marketing in a free enterprise economy.

Standard 1: Marketing Education and Cooperative Procedures (0422.S.1)

Demonstrate Knowledge of Marketing Education and Cooperative Procedures.

Marketing Education and Cooperative Procedures Objectives

Students will:

- 0422.1.1 Explain the three components of a marketing education program.
- 0422.1.2 Participate in a simulated business activity.

Standard 2: Human Relation Skills (0422.S.2)

Demonstrate Effective Human Relations Skills.

Human Relations Objectives

Students will:

- 0422.2.1 Demonstrate the nature of positive consumer/client relations for personal and business success.
- 0422.2.2 Exhibit appropriate personal appearance, positive attitude, enthusiasm, initiative and behavior in the classroom and in the workplace.
- 0422.2.3 Demonstrate self-control while handling difficult customers/clients.
- 0422.2.4 Develop gender-free attitudes about participation in activities in the workplace.
- 0422.2.5 Analyze self-understanding and self-esteem in the motivation of employees.
- 0422.2.6 Demonstrate self-control in the handling of customer complaints.
- 0422.2.7 Set personal goals for the future.
- 0422.2.8 Use time management principles in creating a schedule of activities.

Standard 3: Job-Seeking, Keeping and Learning Skills (0422.S.3)

Develop Job-Seeking, Job-Keeping and Job Learning Skills for the Workplace.

Job-Seeking, Keeping and Learning Skill Objectives

Students will:

- 0422.3.1 Explore various marketing occupations.
- 0422.3.2 Complete the procedures for obtaining employment (resume, cover letter, job application, job search, interview, follow-up letter).
- 0422.3.3 Identify examples of non-verbal, verbal and written communications.
- 0422.3.4 Use proper grammar and vocabulary in verbal and written communication.
- 0422.3.5 Prepare a portfolio of sample work to be utilized in an interview.
- 0422.3.6 Prepare for and practice an interview for a potential job.

Standard 4: Basic Marketing Math Skills (0422.S.4)

Perform Basic Marketing Math Skills that are utilized in the workplace.

Basic Marketing Math Skills Objectives

Students will:

- 0422.4.1 Perform procedures associated with the handling of cash, credit cards, and checks (e.g. making change, preparing and closing cash drawers, correcting register errors).
- 0422.4.2 Operate a calculator to calculate tax, discounts and net sales.

0422.4.3 Process exchanges, returns, allowances, layaways and other types of sales transactions.

Standard 5: Fundamentals of Marketing (0422.S.5)

Describe the Fundamentals of Marketing.

Marketing Fundamental Objectives

Students will:

- 0422.5.1 Define the role of marketing and its importance.
- 0422.5.2 Explain the functions of marketing.
- 0422.5.3 State the marketing concept.
- 0422.5.4 Describe the economic benefits of marketing.
- 0422.5.5 Identify the 4 P's of the marketing mix.
- 0422.5.6 Illustrate the use of product positioning.
- 0422.5.7 Analyze variables in the consumer and industrial market (demographics, geographics, psychographics) that determine the target market.
- 0422.5.8 Construct a customer profile.

Standard 6: Basic Safety Techniques (0422.S.6)

Apply and Demonstrate Basic Safety Techniques.

Basic Safety Techniques Objectives

Students will:

- 0422.6.1 Demonstrate basic safety rules relevant to job safety by reading the appropriate operating instructions and explain the role of OSHA.
- 0422.6.2 Describe the first aid measures to be used in case of an emergency on the job, along with the procedures to be followed in case of an accident.
- 0422.6.3 Classify type A, B, and C fires and describe characteristics in order to extinguish properly.
- 0422.6.4 Discuss appropriate practices for handling and storing hazardous materials.
- 0422.6.5 Explain the role of OSHA.

Standard 7: Principles of Selling (0422.S.7)

Apply the Principles of Selling.

Principles of Selling Objectives

Students will:

- 0422.7.1 Identify the steps in the selling process.
- 0422.7.2 Identify the different approaches in the sales process.
- 0422.7.3 Identify the different methods of closing a sale.
- 0422.7.4 Choose the proper method of determining needs and handling objections in closing a sale.
- 0422.7.5 Conduct a sales presentation.

Standard 8: Consumer Characteristics (0422.S.8)

Analyze Consumer Characteristics and Behaviors as They Relate to Marketing Goods and Services.

Consumer Characteristics Objectives

Students will:

- 0422.8.1 Categorize buying transactions according to buying motives.
- 0422.8.2 Discuss how customers make buying decisions.
- 0422.8.3 Analyze external influences on the consumer buying decision.

Standard 9: Economic Principles (0422.S.9)

Describe the Importance of Economic Principles in Today's Society.

Economic Principles Objectives

Students will:

- 0422.9.1 Identify the various measurements used to analyze the economy.
- 0422.9.2 Distinguish between economic wants and needs.
- 0422.9.3 Define economic goods and services.
- 0422.9.4 Identify the resources (factors of production) that are used to satisfy wants and needs.
- 0422.9.5 Explain how scarcity affects the availability of economic goods and services.
- 0422.9.6 Explain the benefits of competition.
- 0422.9.7 Identify the opportunity costs and trade-offs involved in making choices.
- 0422.9.8 Explain the effects of the business cycle on consumers, businesses and government.
- 0422.9.9 Explain what an economy is.
- 0422.9.10 Discuss advantages and disadvantages of different types of economic systems.
- 0422.9.11 Discuss how an economic system addresses the questions (what is to be produced, how it is to be produced, and for whom).
- 0422.9.12 Analyze the relationship of price to scarcity.
- 0422.9.13 Describe how prices affect buying and selling decisions.
- 0422.9.14 Graph the concept of price on a supply and demand curve.

Standard 10: Business Ethics and Social Responsibility (0422.S.10)

Discuss Business Ethics and Social Responsibility.

Business Ethics and Social Responsibility Objectives

Students will:

- 0422.10.1 Explain the basic functions of a business.
- 0422.10.2 Name the areas in which businesses are thought to have social responsibilities.
- 0422.10.3 List ways that business activities have impacted the environment.
- 0422.10.4 Suggest how marketers can make ethical choices.
- 0422.10.5 Define consumerism.
- 0422.10.6 Describe current trends that are likely to improve the workplace for employees.

Standard 11: The Global Marketplace (0422.S.11)

Discuss the Importance of International Trade to Nations.

Global Marketplace Objectives

Students will:

- 0422.11.1 Distinguish between imports and exports.
- 0422.11.2 Discuss the interdependence of nations.
- 0422.11.3 Explain the advantages and disadvantages of international trade.
- 0422.11.4 Discuss the U.S. balance of trade.
- 0422.11.5 Identify trade barriers, trade support and trade agreements.
- 0422.11.6 Analyze how cultural, economic and political factors impact businesses engaged in international trade.

Marketing Principles II

WVEIS Code 0425

Prerequisite: MARKETING PRINCIPLES

This course includes instructional areas designed to prepare for a career in the field of marketing and management. Instruction will prepare students to perform one or more of the marketing functions such as selling, promoting, marketing research, and management. The course can utilize cooperative education to support classroom instruction.

Standard 1: Cooperative Education

Demonstrate Knowledge of Cooperative Education (co-op).

Cooperative Education Objectives

The student will:

- 0425.1.1 Explain co-op objectives and procedures.
- 0425.1.2 Analyze co-op rules and regulations.
- 0425.1.3 Participate in a co-op or project experience.

Standard 2: Principles of Promotion

Demonstrate the Principles of Promotion.

Principles of Promotion Objectives

The student will:

- 0425.2.1 Define promotion and its role in the economy.
- 0425.2.2 Explain the role of an advertising agency.
- 0425.2.3 Describe the nature and scope of public relations and publicity.
- 0425.2.4 Apply the promotional mix to products and services.
- 0425.2.5 Determine the target market.
- 0425.2.6 Identify the types of advertising media and discuss the advantages and disadvantages of each type.
- 0425.2.7 Develop a print advertisement using effective headlines, copy, illustrations, layouts, color and type face for a product or service.
- 0425.2.8 Calculate cost per thousand advertising costs to determine cost effectiveness.
- 0425.2.9 Create visual merchandising displays using various types of display arrangements, color schemes, display backgrounds, mannequins and lighting.
- 0425.2.10 Prepare a broadcast advertisement.
- 0425.2.11 Calculate media cost.
- 0425.2.12 Compare and contrast the elements of visual merchandising.

Standard 3: Fundamentals of Distribution

Define the Fundamentals of Distribution.

Fundamentals of Distribution Objectives

The student will

- 0425.3.1 Demonstrate the flow of products in the channel of distribution.
- 0425.3.2 Choose the most cost-effective distribution channel for products.
- 0425.3.3 Calculate shipping costs using shipping terms.
- 0425.3.4 Describe three levels of distribution intensity.
- 0425.3.5 Identify transportation systems for the distribution of products.
- 0425.3.6 Identify various types of warehouses.

Standard 4: Analyze Pricing

Analyze Pricing Procedures.

Analyze Pricing Objectives

The student will

- 0425.4.1 Identify various pricing techniques.
- 0425.4.2 Identify the factors affecting selling price.
- 0425.4.3 Distinguish between market share and market position.
- 0425.4.4 Analyze the psychological effects of pricing in the consumer's buying behavior.
- 0425.4.5 Perform pricing calculations.
- 0425.4.6 Calculate break-even point, mark-up and markdown.
- 0425.4.7 Determine the selling price of a product or service.

Standard 5: Reducing Marketing Risk

Identify Techniques to Reduce Marketing Risk.

Reducing Marketing Risk Objectives

The student will

- 0425.5.1 Describe the types of risk that businesses encounter.
- 0425.5.2 Determine methods to prevent, reduce, control or transfer risks.
- 0425.5.3 Outline effective routine security precautions for a business.
- 0425.5.4 Identify methods of internal theft and shoplifting.

Standard 6: Business Purchasing Procedures

Identify Purchasing Procedures Used by a Business.

Business Purchasing Procedures Objectives

The student will

- 0425.6.1 Define purchasing and the procedures used in buying/purchasing.
- 0425.6.2 Explain the buying process.
- 0425.6.3 Select appropriate products to sell.
- 0425.6.4 Choose a vendor for a product.
- 0425.6.5 Decide proper inventory levels for products.
- 0425.6.6 Compare and contrast inventory control systems.
- 0425.6.7 Calculate merchandising related discounts and extensions.
- 0425.6.8 Describe how merchandise is received, checked and marked.
- 0425.6.9 Prepare purchase orders and invoices.

Standard 7: Finance Principles

Identify the Principles of Finance.

Principles of Finance Objectives

The student will

- 0425.7.1 Explain the functions of financing.
- 0425.7.2 Explain the purposes, types and importance of credit.
- 0425.7.3 Calculate interest cost.
- 0425.7.4 Summarize credit legislation.

Standard 8: Product/Service Planning

Identify the Aspects of Product/Service Planning

Product/Service Planning Objectives

- 0425.8.1 Explain the nature and scope of product planning.
- 0425.8.2 Analyze the steps in the consumer buying process.
- 0425.8.3 Research the impact of consumer protection provisions on the consumer's buying behavior using primary and secondary data.
- 0425.8.4 Describe extended product features such as warranties and contracts.
- 0425.8.5 List the principle functions of product packaging and labeling.
- 0425.8.6 Explain the nature and scope of branding.
- 0425.8.7 Define the product life cycle.
- 0425.8.8 Summarize the major provisions of product legislation.

Standard 9: Marketing Research

Define the Nature and Scope of Marketing Research.

Marketing Research Objectives

The student will

- 0425.9.1 Discuss the importance of marketing research in planning and implementing marketing strategies.
- 0425.9.2 Explain the function of a marketing information system.
- 0425.9.3 Describe the four important areas of marketing research.
- 0425.9.4 Describe the five steps in conducting marketing research.
- 0425.9.5 Write research instruments.
- 0425.9.6 Conduct marketing research to identify the market for a product or service.

Standard 10: Management Skills

Explain the Functions of Management.

Management Skills Objectives

The student will

- 0425.10.1 Describe how management teams are organized.
- 0425.10.2 Explain the functions of management.
- 0425.10.3 Analyze the advantages and disadvantages of a career in management.
- 0425.10.4 Identify management techniques.

Standard 11: Entrepreneurship

Examine Entrepreneurship Opportunities.

Entrepreneurship Objectives

The student will

- 0425.11.1 Define entrepreneurship.
- 0425.11.2 Identify the risks involved in entrepreneurship.
- 0425.11.3 Discuss the advantages and disadvantages of entrepreneurship.
- 0425.11.4 Identify the personal characteristics and skills entrepreneurs need.
- 0425.11.5 Discuss business ownership opportunities.

Marketing Work Experience/Internship

WVEIS Code 0428

Marketing Work Experience/Internship is a method of instruction for students to receive on-the-job training that contributes to the over-all instructional program. The instruction, through written agreement between school and employers, is a combination of study in school with employment in the appropriate field. The related classroom instruction and on-the-job experiences are planned and supervised by employers and teacher coordinators to complete the student's education as to his/her career objective.

Standard 1: Human Relations Skills (0428.S.1)

Demonstrate Human Relations Skills.

Human Relations Skills Objectives

Students will:

- 0428.1.1 Demonstrate honesty and integrity.
- 0428.1.2 Use proper business ethics in all business activities.
- 0428.1.3 Demonstrate respect for customers, co-workers and management.
- 0428.1.4 Demonstrate initiative in completing job duties.
- 0428.1.5 Maintain a positive attitude and positive relationship with customers, co-workers and management.
- 0428.1.6 Adapt to changes in job responsibilities.
- 0428.1.7 Appreciate diversity in the workplace.
- 0428.1.8 Exhibit self-control when working with customers, co-workers and management.
- 0428.1.9 Use appropriate assertiveness.
- 0428.1.10 Exhibit empathy for customers, co-workers and management.
- 0428.1.11 Use feedback from others for personal growth.
- 0428.1.12 Practice proper business etiquette.
- 0428.1.13 Identify procedures to respond to sexual harassment.

Standard 2: Business Communications (0428.S.2)

Demonstrate Appropriate Business Communication Skills.

Communications Objectives

Students will:

- 0428.2.1 Use correct grammar and vocabulary in written and oral communications.
- 0428.2.2 Listen to and follow directions.
- 0428.2.3 Explain policies and procedures to customers and clients.
- 0428.2.4 Perform proper telephone techniques appropriately.
- 0428.2.5 Demonstrate the proper procedure for job termination.

Standard 3: Basic Work Skills (0428.S.3)

Demonstrate Mastery of Basic Work Skills for a Chosen Occupation.

Basic Work Skills Objectives

Students will:

- 0428.3.1 Maintain punctuality, appropriate attendance and dependability.
- 0428.3.2 Work independently without direct supervision.
- 0428.3.3 Stay with an assigned task until successful completion.
- 0428.3.4 Utilize time management principles when completing assignments.
- 0428.3.5 Apply organizational skills in daily activities.
- 0428.3.6 Participate as a team member when completing a work project.

- 0428.3.7 Produce quality work.
- 0428.3.8 Accept accountability for one's performance.
- 0428.3.9 Perform basic mathematical functions.
- 0428.3.10 Operate the most common electronic equipment with speed and accuracy.
- 0428.3.11 Maintain appropriate records for use on the job and in class.
- 0428.3.12 Demonstrate leadership skills when completing a project or task.
- 0428.3.13 Exhibit decision-making skills.
- 0428.3.14 Solve problems individually and as a team member.
- 0428.3.15 Participate in company meetings and activities.

Standard 4: Basic Safety Techniques (0428.S.4)

Apply and Demonstrate Basic Safety Techniques.

Basic Safety Techniques Objectives

Students will:

- 0428.4.1 Practice basic safety rules.
- 0428.4.2 Handle company equipment properly and safely.
- 0428.4.3 Demonstrate safety procedures for handling and lifting heavy materials.
- 0428.4.4 Follow procedures in the case of an accident, including reporting procedures.
- 0428.4.5 Follow security procedures.
- 0428.4.6 Practice proper safety procedures for handling and storing hazardous materials.
- 0428.4.7 Recognize and report hazardous conditions.
- 0428.4.8 Read and interpret operating instructions before using equipment.
- 0428.4.9 Explain and practice procedures for safe evacuation.
- 0428.4.10 Classify type A, B, and C fires and describe characteristics in order to extinguish properly.
- 0428.4.11 Identify proper agencies for safety procedures (fire department, police department, OSHA, hospital).

Professional Selling/Salesmanship

WVEIS Code 0431

This course focuses on the purpose of the promotional strategy of selling and its role in the marketing environment. Emphasis is placed on the purpose and steps of the sales process, and the importance of completing each step in the presentation. Professional Selling as a career is also explored.

Standard 1: Fundamentals of Marketing (0431.S.1)

Describe the Fundamentals of Marketing.

Fundamentals of Marketing Objectives

The student will:

- 0431.1.1 Define the role of marketing and its importance.
- 0431.1.2 Explain the functions of marketing.
- 0431.1.3 State the marketing concept.
- 0431.1.4 Describe the economic benefits of marketing.
- 0431.1.5 Identify the 4 P's of the marketing mix.
- 0431.1.6 Illustrate the use of product positioning.
- 0431.1.7 Analyze variables in both the consumer and industrial markets (demographics, geographics, psychographics) that determine the target market.
- 0431.1.8 Construct a customer profile.

Standard 2: Promotion (0431.S.2)

Define Promotion.

Promotion Objectives

The student will:

- 0431.2.1 Explain the role of promotion.
- 0431.2.2 Explain the concept of the promotional mix.
- 0431.2.3 Develop a promotional plan.
- 0431.2.4 Evaluate ethical standards of various promotional media.
- 0431.2.5 Distinguish between personal selling, advertising, publicity, sales promotion and visual merchandising.

Standard 3: Selling as a Promotional Tool (0431.S.3)

Explore Selling as a Promotional Tool.

Selling As a Promotional Tool Objectives

The student will:

- 0431.3.1 Identify the characteristics and benefits of selling.
- 0431.3.2 Explore sales as a career.
- 0431.3.3 Distinguish between the different types of sales positions.
- 0431.3.4 Identify the characteristics of a successful salesperson.
- 0431.3.5 Differentiate between consumer and industrial sales.
- 0431.3.6 Identify the steps in the sales process.
- 0431.3.7 Recognize cultural differences that are encountered in sales.
- 0431.3.8 Write a sales manual.
- 0431.3.9 Conduct a sales presentation.

Standard 4: Know Your Customer (0431.S.4)

Analyze the Importance of Knowing Your Customer.

Know Your Customer Objectives

The student will:

- 0431.4.1 Distinguish between rational and emotional buying motives.
- 0431.4.2 Explain the customer decision-making process.
- 0431.4.3 Differentiate between a consumer and a customer.
- 0431.4.4 Identify various customer personality types.

Standard 5: Product Knowledge (0431.S.5)

Analyze the Importance of Product Knowledge.

Product Knowledge Objectives

The student will:

- 0431.5.1 Identify features and benefits of a product or service.
- 0431.5.2 Demonstrate product/company knowledge needed for effecting selling.
- 0431.5.3 Research sources of product knowledge.

Standard 6: Preapproach Activities (0431.S.6)

Identify Preapproach Activities.

Preapproach Activities Objectives

The student will:

- 0431.6.1 Prepare a prospect list.
- 0431.6.2 Qualify the customer for the list.
- 0431.6.3 Identify stock keeping and house keeping activities.
- 0431.6.4 Review sales records concerning the customer.
- 0431.6.5 Prepare sales materials.

Standard 7: Approach Activities (0431.S.7)

Identify Approach Activities.

Approach Activities Objectives

The student will:

- 0431.7.1 Discuss the purpose and importance of the approach.
- 0431.7.2 Identify types of retail approaches.
- 0431.7.3 Identify activities in the industrial approach.

Standard 8: Determine Customer Needs (0431.S.8)

Explain Why Determining Customer Needs is Essential in the Sales Process.

Determine Customer Needs Objectives

The student will:

- 0431.8.1 Describe methods used for determining customer needs.
- 0431.8.2 Discuss various questioning techniques.
- 0431.8.3 Consider the importance of nonverbal communication.
- 0431.8.4 Explain the necessity of effective listening.

Standard 9: Demonstration/Presentation (0431.S.9)

Identify Characteristics of a Demonstration/Presentation.

Demonstration/Presentation Objectives

The student will:

- 0431.9.1 Demonstrate how selling points are used in the demonstration/presentation.
- 0431.9.2 Explain how products are selected for the demonstration/presentation.
- 0431.9.3 Identify products to present to customer.
- 0431.9.4 Display the product for customer consideration.
- 0431.9.5 Involve the customer in the demonstration/presentation.
- 0431.9.6 Prepare sales aids.
- 0431.9.7 Utilize proper vocabulary to demonstrate product.
- 0431.9.8 Evaluate customer feedback.

Standard10: Handling Customer Objections and Questions (0431.S.10)

Identify Methods to Handle Objections and Questions.

Objections and Questions Objectives

The student will:

- 0431.10.1 Explain the difference between an excuse and an objection.
- 0431.10.2 Prepare an objection and analysis sheet.
- 0431.10.3 Identify common sources of objections.
- 0431.10.4 Explain the process of handling objections.
- 0431.10.5 Identify specialized methods of handling objections.
- 0431.10.6 Give examples of open ended and closed ended questions.

Standard11: Closing the Sale (0431.S.11)

Identify Techniques for Closing a Sale.

Closing the Sale Objectives

The student will:

- 0431.11.1 List buying signals that a customer sends.
- 0431.11.2 Explain the general rules for closing a sale.
- 0431.11.3 Describe specialized methods of closing the sale.
- 0431.11.4 Recognize the importance of closing the sale.
- 0431.11.5 Evaluate the reasons for failing to close a sale.
- 0431.11.6 Demonstrate methods of closing a sale.

Standard12: Suggestion Selling (0431.S.12)

Identify the Importance of Suggestion Selling.

Suggestion Selling Objectives

The student will:

- 0431.12.1 Identify the benefits of suggestion selling.
- 0431.12.2 Explain the rules of suggestion selling.
- 0431.12.3 Demonstrate methods of suggestion selling.

Standard13: Follow-Up Activities (0431.S.13)

Identify Follow-Up Activities.

Follow-Up Activities Objectives

The student will:

- 0431.13.1 Define the importance of relationship marketing.
- 0431.13.2 Summarize the importance of after-sale activities.
- 0431.13.3 Send thank you letters.
- 0431.13.4 Process payments.
- 0431.13.5 Identify sources of customer support.

Standard14: Selling Math Activities (0431.S.14)

Perform Selling Math Activities.

Selling Math Activities Objectives

The student will:

- 0431.14.1 Perform procedures associated with the handling of cash, credit cards, and checks (e.g. making change, preparing and closing cash drawers, correcting register errors).
- 0431.14.2 Describe the arrangement of currency and coins in a cash register.
- 0431.14.3 State the rules for safeguarding money in the cash register.
- 0431.14.4 Operate a calculator to calculate tax, discounts and net sales.
- 0431.14.5 Process exchanges, returns, allowances, layaways and other types of sales transactions.
- 0431.14.6 Prepare a purchase order and invoice.
- 0431.14.7 Calculate shipping costs.
- 0431.14.8 Identify methods of fraud protection.

Standard15: Sales Management (0431.S.15)

Identify Sales Management Activities.

Sales Management Activities Objectives

The student will:

- 0431.15.1 Track sales figures.
- 0431.15.2 Prepare a sales report.
- 0431.15.3 Identify techniques for motivating employees.
- 0431.15.4 Prepare sales goals.

Sports, Entertainment, Recreation In Marketing WVEIS Code 0434

This course includes instructional areas designed to prepare for a career in the field of sports, entertainment and/or recreational marketing. The function of Sports Marketing is to determine the interests of the consumer and plan a product or service that the spectator will buy.

Standard 1: Marketing Sports, Entertainment and Recreational Events (0434.SD.1)

Explain the Importance of Sports, Entertainment, and Recreation Marketing.

Importance of Marketing Sports, Entertainment and Recreational Events Objectives

The student will:

- 0434.1.1 Identify the place of sports, entertainment and recreation (SER) in the field of marketing.
- 0434.1.2 Identify SER careers.
- 0434.1.3 Analyze the growth and trends of SER as an industry in the local, state, national and international arenas.

Standard 2: Marketing and Business Overview (0434.SD.2)

Investigate an Overview of Marketing and Business.

Marketing and Business Objectives

The student will:

- 0434.2.1 Define the marketing functions.
- 0434.2.2 Identify the components of the marketing mix.
- 0434.2.3 State the marketing concept.
- 0434.2.4 Identify the use of market positioning.
- 0434.2.5 Explain the need and describe the methods of market research.
- 0434.2.6 Identify types of segmentation and determine the target market.
- 0434.2.7 Describe the four stages in the product life cycle.

Standard 3: Business Structure (0434.SD.3)

Explain the Business Structure of Sports, Entertainment, and Recreation.

Business Structure Objectives

The student will:

- 0434.3.1 Identify examples of business ownership.
- 0434.3.2 Explain reasons for operating as a profit or not-for-profit organization.
- 0434.3.3 Describe the partnership of business and government to develop SER opportunities.

Standard 4: Communication Strategies (0434.SD.4)

Develop Effective Communication Strategies.

Communication Strategies Objectives

The student will:

- 0434.4.1 Explain the components of the communication process.
- 0434.4.2 Identify listening strategies and barriers to effective communication.
- 0434.4.3 Compose written business communications.
- 0434.4.4 Interpret nonverbal communication.

Standard 5: Promotion (0434.SD.5)

Develop Promotion.

Promotion Objectives

The student will:

- 0434.5.1 Describe the five elements of the promotional mix.
- 0434.5.2 Differentiate between product and institutional promotions.
- 0434.5.3 Develop a logo, trademark, slogan and trade character.
- 0434.5.4 Describe the importance of selling.
- 0434.5.5 Identify the steps of a sale.
- 0434.5.6 Describe the four major types and uses of sales promotion.
- 0434.5.7 Develop a promotion campaign.
- 0434.5.8 Identify the responsibilities of a Sports Information Director or Public Relations person.
- 0434.5.9 Explain the composition of the media and effective ways to work with each.
- 0434.5.10 Develop a media/press release, letterhead, mailing list and PSA.
- 0434.5.11 Explain the types of advertising media.
- 0434.5.12 Describe the elements of an advertisement.

Standard 6: Sponsorship (0434.SD.6)

Analyze the Purpose of Sponsorship.

Sponsorship Objectives

The student will:

- 0434.6.1 Explain the reasons for a company to use sponsorship.
- 0434.6.2 Explain the sociological rationales for buying into sports and entertainment.
- 0434.6.3 Identify reasons for athlete/entertainer endorsements.
- 0434.6.4 Evaluate a sponsorship marketing plan/proposal and discuss legal issues.
- 0434.6.5 Analyze the pricing of sponsorships.

Standard 7: Legal Considerations (0434.SD.7)

Investigate Legal Considerations.

Legal Considerations Objectives

The student will:

- 0434.7.1 Explain expressed, implied, unilateral and bilateral contracts.
- 0434.7.2 Identify essential elements of contracts and the legal implications.
- 0434.7.3 Explain the role of licensing.

Standard 8: Agents and Personal Managers (0434.SD.8)

Examine the Role of Agents and Personal Managers.

Agents and Personal Managers Objectives

The student will:

- 0434.8.1 Identify the role of agents and personal managers.
- 0434.8.2 Explain the types of agreements/contracts and financial compensation.
- 0434.8.3 Identify the factors involved in selection of an agent/personal manager.
- 0434.8.4 Identify the agent's role in pre-negotiations and endorsement contracts.

Standard 9: Labor Unions (0434.SD.9)

Appraise the Role of Labor Unions.

Labor Union Objectives

The student will:

- 0434.9.1 Examine the role of unions in sports, entertainment, and recreation marketing.
- 0434.9.2 Explain the use of collective bargaining in union negotiations.

Standard 10: Business Ethics (0434.SD.10)

Explore Business Ethics.

Business Ethic Objectives

The student will:

- 0434.10.1 Explain management's role in ethical practices.
- 0434.10.2 Describe ways to improve ethical behavior in business.
- 0434.10.3 Explain bootlegging and the ways companies are affected.

Standard 11: Risk Management (0434.SD.11)

Explain the Importance of Risk Management.

Risk Management Objectives

The student will:

- 0434.11.1 Identify risks.
- 0434.11.2 Analyze the importance of security and insurance.
- 0434.11.3 Determine methods to prevent, reduce, control or transfer risks.

Standard 12: Event Planning (0434.SD.12)

Develop and Plan an Event.

Event Planning Objectives

The student will:

- 0434.12.1 Analyze the growth and trends of event planning.
- 0434.12.2 Explore sports or entertainment events.
- 0434.12.3 Illustrate job duties in event planning.
- 0434.12.4 Develop an event plan.
- 0434.12.5 Evaluate the event plan.

Standard 13: Financial Planning (0434.SD.13)

Determine the Importance of Financial Planning.

Financial Planning Objectives

The student will:

- 0434.13.1 Identify sources of costs for SER businesses.
- 0434.13.2 Explain net profit/net loss and how it is calculated.
- 0434.13.3 Identify the components of a budget.
- 0434.13.4 Identify revenue sources.

Standard 14: Product Development (0434.SD.14)

Analyze Product Development.

Product Development Objectives

The student will:

0434.14.1 Describe types of concessions.

0434.14.2 Identify factors affecting product development and concessions.

0434.14.3 Define internal/external merchandise opportunities.

Tour/Hospitality Marketing

WVEIS Code 0437

This course focuses on the importance of marketing in the tourism and hospitality industry. Careers in the tourism and hospitality are also explored.

Standard 1: Fundamentals of Marketing (0437.S.1)

Describe the fundamentals of marketing.

Fundamentals of Marketing Objectives

The student will:

- 0437.1.1 Describe the environment for marketing in the hospitality and travel industry.
- 0437.1.2 Define the role of marketing and its importance.
- 0437.1.3 Explain the functions of marketing.
- 0437.1.4 State the marketing concept.
- 0437.1.5 Describe the economic benefits of marketing.
- 0437.1.6 Identify the 4 P's of the marketing mix.
- 0437.1.7 Illustrate the use of product positioning.
- 0437.1.8 Analyze variables in both the consumer and industrial markets (demographics, geographics, psychographics) that determine the target market.
- 0437.1.9 Construct a customer profile.

Standard 2: Marketing and Travel (0437.S.2)

Identify the importance of marketing in the travel industry.

Marketing and Travel Objectives

The student will:

- 0437.2.1 Explain the meaning of services marketing.
- 0437.2.2 Differentiate between the marketing of services and the marketing of products.
- 0437.2.3 Discuss the fundamentals of the hospitality and travel marketing system.
- 0437.2.4 List the benefits of using the hospitality and travel marketing system.
- 0437.2.5 Define long- and short-term marketing planning.
- 0437.2.6 Distinguish between a strategic market plan and a marketing plan.

Standard 3: Marketing Opportunities in Tourism and Hospitality (0437.S.3)

Analyze marketing opportunities.

Marketing Opportunities Objectives

The student will:

- 0437.3.1 Differentiate between situation, market and feasibility analyses.
- 0437.3.2 Describe the steps in a situation analysis.
- 0437.3.3 Describe the steps in a market analysis.
- 0437.3.4 Describe the steps in a feasibility analysis.

Standard 4: Marketing Research (0437.S.4)

Analyze the importance of marketing research.

Marketing Research Objectives

The student will:

- 0437.4.1 Discuss the importance of marketing research in planning and implementing marketing strategies.
- 0437.4.2 Explain the function of a marketing information system.
- 0437.4.3 Describe the four important areas of marketing research.

- 0437.4.4 Describe the five steps in conducting marketing research.
- 0437.4.5 Write research instruments.
- 0437.4.6 Conduct marketing research to identify the market.
- 0437.4.7 Discuss the criteria used to determine the viability of market segments.
- 0437.4.8 List the bases that can be used to segment hospitality and travel markets.
- 0437.4.9 Describe the major demand and supply trends that influence the industry.
- 0437.4.10 Describe how the effectiveness of various marketing strategies varies with the product life cycle and an organization's position in the industry.
- 0437.4.11 Identify the factors that have made positioning essential in the industry.
- 0437.4.12 Describe the approaches to positioning.

Standard 5: Customer Behavior (0437.S.5)

Discuss customer behavior.

Customer Behavior Objectives

The student will:

- 0437.5.1 Describe personal factors that influence customer behavior.
- 0437.5.2 Explain the factors that influences customers' perception of the industry.
- 0437.5.3 Describe interpersonal factors that influence customer behavior.
- 0437.5.4 List the steps in the customer buying process.

Standard 6: Marketing Plan (0437.S.6)

Write a marketing plan.

Marketing Plan Objectives

The student will:

- 0437.6.1 Identify the characteristics of a marketing plan.
- 0437.6.2 List requirements for an effective marketing plan.
- 0437.6.3 Explain the benefits of having a marketing plan.
- 0437.6.4 Complete a demographic study to determine a market.
- 0437.6.5 Determine market potential.
- 0437.6.6 Identify direct and indirect competition.
- 0437.6.7 Evaluate competitive strengths and weaknesses.
- 0437.6.8 State the marketing concept.
- 0437.6.9 Utilize market segmentation and target marketing.
- 0437.6.10 Identify and apply the components of the marketing mix.
- 0437.6.11 Explain approaches to develop a marketing budget.

Standard 7: Product Development (0437.S.7)

Analyze the importance of product development.

Product Development Objectives

The student will:

- 0437.7.1 Identify the components of an organization's product/service mix.
- 0437.7.2 Explain the steps in product development.
- 0437.7.3 Explain the potential benefits of marketing partnerships to hospitality and travel organizations.

Standard 8: People and Service Quality (0437.S.8)

Explain why people and service quality are important to the industry.

People and Service Quality Objectives

The student will:

- 0437.8.1 Explain the key role played by people in the marketing mix.
- 0437.8.2 Describe the total quality management (TQM) concept.
- 0437.8.3 Explain the importance of employee selection, orientation, training and motivating programs.
- 0437.8.4 Describe the concept of empowering employees.
- 0437.8.5 Describe the customer mix.

Standard 9: Distribution (0437.S.9)

Explain distribution in the industry.

Distribution Objectives

The student will:

- 0437.9.1 Differentiate between the distribution mix in the hospitality and travel industry and other industries.
- 0437.9.2 List the major travel trade intermediaries.
- 0437.9.3 Explain the roles played by each of the major travel trade intermediaries.

Standard10: Communication and the Promotional Mix (0437.S.10)

Identify the connection between communication and the promotional mix.

Communication and the Promotional Mix Objectives

The student will:

- 0437.10.1 List the elements of the promotional mix.
- 0437.10.2 Explain the communication process.
- 0437.10.3 Describe how the customer's buying process stage and the buying decision classification influence the effectiveness of promotions.
- 0437.10.4 Discuss the goals of promotion.
- 0437.10.5 Explain the relationship of the promotional mix and the marketing mix.

Standard11: Advertising (0437.S.11)

Identify the importance of advertising in the industry.

Advertising Objectives

The student will:

- 0437.11.1 Identify the various types of media.
- 0437.11.2 Analyze the advantages and disadvantages of each type of media.
- 0437.11.3 Select the appropriate media for the target market.
- 0437.11.4 Identify standards for selecting advertising media.
- 0437.11.5 Evaluate the effectiveness of the advertising media.
- 0437.11.6 Explain the difference between consumer and trade advertising.
- 0437.11.7 Explain how the hospitality and travel industry tends to use advertising.
- 0437.11.8 Describe the role of advertising agencies.

Standard12: Sales Promotion (0437.S.12)

Identify the importance of sales promotion in the industry.

Sales Promotion Objectives

The student will:

- 0437.12.1 Identify the characteristics and benefits of sales promotion.
- 0437.12.2 Differentiate between the various types of sales promotion.
- 0437.12.3 Analyze the advantages and disadvantages of the various types of sales promotion.
- 0437.12.4 Select appropriate sales promotion.
- 0437.12.5 Explain the difference between special communication and special offer promotions.

- 0437.12.6 Develop a sales promotion.
- 0437.12.7 Evaluate the effectiveness of a sales promotion.

Standard13: Personal Selling (0437.S.13)

Identify the importance of personal selling in the industry.

Personal Selling Objectives

The student will:

- 0437.13.1 Identify the characteristics and benefits of selling.
- 0437.13.2 Differentiate between consumer and industrial sales.
- 0437.13.3 Describe the characteristics of the successful salesperson.
- 0437.13.4 Identify the steps in the sales process.
- 0437.13.5 Recognize cultural differences that are encountered in sales.
- 0437.13.6 Conduct a sales presentation.

Standard14: Public Relations (0437.S.14)

Identify the importance of public relations in the industry.

Public Relations Objectives

The student will:

- 0437.14.1 Identify the characteristics and benefits of public relations and publicity.
- 0437.14.2 Identify the audiences for public relations.
- 0437.14.3 Describe the steps in developing a public relations plan.
- 0437.14.4 Identify the vehicles used for public relations and publicity.
- 0437.14.5 Explain the role and advantages of public relations consultants.
- 0437.14.6 Write a media release.

Child Development Specialist I

WVEIS Code 1003

Child Development Specialist I provides an overview of early childhood career paths, early childhood programs, regulatory requirements, universal precautions, rough and tumble play, fine motor skills, gaining competence, and outcomes of children's play.

Standard 1: Career Paths (1003.S.1)

Students will analyze career paths within early childhood education and services.

Career Paths Objectives

Students will:

- 1003.1.1 Describe the roles and functions of individual engaged in early childhood education and services.
- 1003.1.2 List opportunities for employment and entrepreneurial endeavors.
- 1003.1.3 Examine education and training requirements and opportunities for career paths in childhood education and services.
- 1003.1.4 Design a personal career plan incorporating education and training requirements and opportunities for career paths in early childhood education and services.
- 1003.1.5 Relate the impact of early childhood education and services occupations on local, state, national, and global economies.
- 1003.1.6 Develop the material for a professional portfolio.
- 1003.1.7 Create a professional portfolio that shows application of content standards for CDSI.

Standard 2: Overview of Early Childhood Programs (1003.S.2)

Students will gain knowledge of the overall view of early childhood programs.

Overview of Early Childhood Programs Objectives

Students will:

- 1003.2.1 Know what kinds of programs are available to young children.
- 1003.2.2 Recognize the missions of different early childhood programs.
- 1003.2.3 Recognize the common elements among early childhood programs.
- 1003.2.4 Know the name of and how to contact local regulatory agencies.
- 1003.2.5 Understand how to observe and document behaviors, development, and contact in early childhood.

Standard 3: Regulatory Requirements (1003.S.3)

Students will explore and analyze regulatory requirements.

Regulatory Requirements Objectives

Students will:

- 1003.3.1 Understanding the purpose of regulatory requirements.
- 1003.3.2 Describe the functions of regulatory agencies.
- 1003.3.3 Identify strategies for working constructively with regulatory personnel.
- 1003.3.4 Know the name of and how to contact local regulatory agencies that govern the program you are working in.
- 1003.3.5 Understand how to observe and document behaviors, development, and contacts in early childhood.
- 1003.3.6 Identify security and emergency procedures.

Standard 4: Universal Precautions (1003.S.4)

Students will demonstrate the universal precautions used in early childhood programs.

Universal Precautions Objectives

Students will:

- 1003.4.1 Demonstrate the proper use of universal precautions.
- 1003.4.2 Know the proper procedures for hand washing, diaper changing, and food handling.
- 1003.4.3 Know the four ways that germs spread.

Standard 5: Reporting Child Abuse and Neglect (1003.S.5)

Students will develop necessary skills for recognizing and reporting abuse and neglect cases.

Reporting Child Abuse and Neglect Objectives

Students will:

- 1003.5.1 Explain the meaning of mandated reporting.
- 1003.5.2 Know why you should report abuse and neglect.
- 1003.5.3 Know who should report abuse and neglect.
- 1003.5.4 Know how to make a report of abuse and neglect.
- 1003.5.5 Identify symptoms of neglect and abuse.

Standard 6: Code of Ethical Conduct (1003.S.6)

Students will review and analyze the code of ethical conduct in the early childhood profession.

Code of Ethical Conduct Objectives

Students will:

- 1003.6.1 Recognize ethical dilemmas that occur in the work place.
- 1003.6.2 Demonstrate an awareness of the Code of Ethics for the early childhood profession.
- 1003.6.3 Introduce the code of ethical conduct from NAEYC.
- 1003.6.4 Defend and sign an ethics code.

Standard 7: Gaining Mobility (1003.S.7)

Students will examine different movements and patterns that allow babies to gain mobility.

Gaining Mobility Objectives

Students will:

- 1003.7.1 Describe how development moves from simple to complex.
- 1003.7.2 Illustrate the sequence of developing mobility.
- 1003.7.3 Articulate the relationship between increasing mobility and development in other domains.
- 1003.7.4 Know four ways that teachers can assist young children with developing mobility.
- 1003.7.5 Determine special needs of children.
- 1003.7.6 Prepare activities for special needs of children.

Standard 8: Refining Motor Skills (1003.S.8)

Students will identify the need for active play and activities for children of different ages.

Refining Motor Skills

Students will:

- 1003.8.1 Demonstrate an understanding of the need for active play.
- 1003.8.2 Identify activities that are appropriate for active play for different stages of motor development.
- 1003.8.3 Describe how to plan environments that support active play.
- 1003.8.4 Design an activity for the age of children you care for, and observe and document the results.

Standard 9: Rough and Tumble Play (1003.S.9)

Students will investigate the need for and results of rough and tumble play.

Rough and Tumble Play Objectives

Students will:

- 1003.9.1 Recognize healthy rough and tumble play.
- 1003.9.2 Relate the importance of rough and tumble play to development in other domains.
- 1003.9.3 Demonstrate knowledge of how to manage appropriate rough and tumble play.

Standard 10: Fine Motor Skills (1003.S.10)

Students will explore fine motor development.

Fine Motor Skills Objectives

Students will:

- 1003.10.1 Explain the relationship of the fine motor development to gross motor development.
- 1003.10.2 Identify the sequence of fine motor development.

Standard 11: Gaining Competence (1003.S.11)

Students will analyze developmentally appropriate practices to plan for early childhood development.

Gaining Competence Objectives

Students will:

- 1003.11.1 Convey the importance of experience and practice in helping children develop better coordination and more complex skills.
- 1003.11.2 Identify activities and strategies for increasing competence in using one's body.
- 1003.11.3 Perform activities, routines, and transitions.
- 1003.11.4 Develop objectives and procedures for lesson plans.
- 1003.11.5 Create and implement developmentally appropriate lesson plans.
- 1003.11.6 Actively participate in FCCLA at all levels.

Standard 12: Perceptual Motor Integration (1003.S.12)

Students will develop an understanding of perceptual motor integration.

Perceptual Motor Integration Objectives

Students will:

- 1003.12.1 Define perceptual motor coordination.
- 1003.12.2 Demonstrate an understanding of the role of perceptual motor coordination.
- 1003.12.3 Identify strategies to support increased perceptual motor coordination.

Standard 13: Representation (1003.S.13)

Students will explore how a child's past exploration of their environment influence their future explorations.

Representation Objectives

Students will:

- 1003.13.1 Explain how representation emerges from previous experiences.
- 1003.13.2 Identify strategies and activities for encouraging representations.
- 1003.13.3 Articulate the benefits of open-ended art.

Standard 14: Nutrition and Growth (1003.S.14)

Students will study the importance of healthy brain development.

Nutrition and Growth Objectives

Students will:

- 1003.14.1 Explain the relationship between nutrition and development.
- 1003.14.2 Identify strategies for promoting good nutrition.

Standard 15: Brain Development (1003.S.15)

Students will study the importance of healthy brain development.

Brain Development Objectives

Students will:

- 1003.15.1 Explain the relationship between nutrition and development.
- 1003.15.2 Articulate the importance of optimal environments for brain development.
- 1003.15.3 Describe strategies that provide optimal environments for healthy brain development.

Standard 16: Outcomes of Children's Play-Physical Development (1003.S.16)

Students will describe the relationship of child's play to physical development.

Outcomes of Children's Play-Physical Development Objectives

Students will:

- 1003.16.1 Articulate the role of play in the healthy development of children.
- 1003.16.2 Recognize the value of play for integrating development of the whole child.

Child Development Specialist II

WVEIS Code 1004

Child Development Specialist II allows students to visit ethic issues, attachments, trust, temperament types, the secure base, separation, autonomy, initiative, social competence, building community, relationships with adults, prosocial environment, scaffolding prosocial behavior, and social challenges.

Standard 1: Review of First Semester (1004.S.1)

Students will gain more in depth knowledge of previously studied concepts and develop engrained habits.

Review of First Semester Objectives

Students will:

- 1004.1.1 Articulate the value of review and the importance of learning throughout ones professional life.

Standard 2: Revisiting Ethics (1004.S.2)

Students will look at ways to develop two or more solutions to a conflict.

Revisiting Ethics Objectives

Students will:

- 1004.2.1 Recognize ethical dilemmas.
- 1004.2.2 Apply the code of ethics in making decisions about dilemmas concerning children.
- 1004.2.3 State and apply the professional ethical standards as accepted by the recognizes professional organizations (NAEYS, SACUS, and WWAYC).

Standard 3: Attachments (1004.S.3)

Students will explore the importance of children's developing attachments to people as well as objects in their lives.

Attachments Objectives

Students will:

- 1004.3.1 Define attachments and understand how it forms.
- 1004.3.2 Explain the importance of attachments to overall development.
- 1004.3.3 Identify ways to support the development of attachments between babies and parents, and babies and their caregivers.

Standard 4: Trust (1004.S.4)

Students will describe how trust is developed within babies.

Trust Objectives

Students will:

- 1004.4.1 Describe how trust is formed.
- 1004.4.2 Identify appropriate ways to respond to babies' needs and demands.

Standard 5: Temperament Types (1004.S.5)

Students will have an understanding of the different ways babies' respond emotionally to situations.

Temperament Types Objectives

Students will:

- 1004.5.1 Distinguish among the different general types of temperaments.
- 1004.5.2 Identify the underlying characteristics that contribute to the differences among temperament

- types.
- 1004.5.3 Describe the temperament of children in an objective manner.
 - 1004.5.4 Explain how temperament can affect relationships.

Standard 6: The Secure Base (1004.S.6)

Students will identify the different factors involved in babies' developing a secure base.

The Secure Base Objectives

Students will:

- 1004.6.1 Describe how bases emerge and how to recognize them.
- 1004.6.2 Identify ways to support development of secure bases for children as they mature.
- 1004.6.3 Explain and identify ways to support the role of transitional objects as an extension of the secure base.

Standard 7: Separation (1004.S.7)

Students will explain the different stages of separation.

Separation Objectives

Students will:

- 1004.7.1 Describe separation issues during infancy and preschool years.
- 1004.7.2 Identify developmentally appropriate ways of supporting children when they are faced with separation and transition.
- 1004.7.3 Present information to parents regarding developmental issues and concerns related to children.

Standard 8: Autonomy (1004.S.8)

Students will outline appropriate autonomy behavior.

Autonomy Objectives

Students will:

- 1004.8.1 Describe the stage of autonomy including expected behavior.
- 1004.8.2 Identify environments, activities, and methods that support successful accomplishment of autonomy.
- 1004.8.3 Outline and implement developmentally appropriate guidelines for behavior.

Standard 9: Initiative (1004.S.9)

Students will recognize the different stages of behavior as a child moves from exploring their world to altering their world.

Initiative Objectives

Students will:

- 1004.9.1 Describe the stage of initiative including expected behavior.
- 1004.9.2 Identify environments, activities, and methods that support successful accomplishment of autonomy.
- 1004.9.3 Identify interpersonal skills that promote positive and productive relationships with children and among children.
- 1004.9.4 Demonstrate interpersonal skills that promote positive and productive relationships with children.
- 1004.9.5 Implement strategies for constructive and supportive interactions between children and families.

Standard 10: Social Competence (1004.S.10)

Students will identify socially competent behavior.

Social Competence Objectives

Students will:

- 1004.10.1 Identify socially competent behavior.
- 1004.10.2 Explain the importance of social competence to relationship formation.
- 1004.10.3 Describe the components of socially competent behavior.

Standard 11: Building Community (1004.S.11)

Students will plan an environment that supports social development with a strong sense of community.

Building Community Objectives

Students will:

- 1004.11.1 Describe the meaning of community in a group of children.
- 1004.11.2 Identify environmental conditions that promote community in groups of children.

Standard 12: Relationships with Adults (1004.S.12)

Students will identify the importance of children forming positive relationships with adults.

Relationships with Adults Objectives

Students will:

- 1004.12.1 Describe the importance of their own role in forming relationships with children.
- 1004.12.2 Explain how positive relationships with children foster cooperative behavior.
- 1004.12.3 Identify techniques that form positive relationships with children.

Standard 13: The Prosocial Environment (1004.S.13)

Students will clarify different strategies that support/undermine social development.

The Prosocial Environment Objectives

Students will:

- 1004.13.1 Identify strategies that support social development.
- 1004.13.2 Identify commonly used strategies that undermine social development and alternatives to these strategies.

Standard 14: Scaffolding Prosocial Behavior (1004.S.14)

Students will distinguish between specific knowledge that children need in order to develop social competence and practices that help children to develop social competence.

Scaffolding Prosocial Behavior Objectives

Students will:

- 1004.14.1 Identify strategies for creating environments that permit the practice of social skills.
- 1004.14.2 Describe how to scaffold a child in developing social skills.

Standard 15: Social Challenges (1004.S.15)

Students will describe social challenges and effectively ways to address them.

Social Challenges Objectives

Students will:

- 1004.15.1 Identify strategies to address social difficulties children experience.

- 1004.15.2 Convey the importance of addressing social difficulties at an early age.
- 1004.15.3 List problem-solving skills with children.

Standard 16: Practices and Standards (1004.S.16)

Students will recognize professional practices related to working with children.

Practices and Standards Objectives

Students will:

- 1004.16.1 Classify and implement federal, state, and local standards, policies, regulations, and laws that impact children, families, and programs.
- 1004.16.2 Explain and demonstrate the importance of enthusiasm, initiative, and commitment to program goals and improvements.
- 1004.16.3 Recognize business management skills to planning businesses in early childhood education and services.
- 1004.16.4 Actively participate in FCCLA at all levels.

School Age Growth and Development

WVEIS Code 1021

The students will explore the physical, social, emotional, and cognitive development of children aged five through twelve. Emphasis will be placed on preparing for a career as a teacher's aide, exploring current educational theories, practices, laws, and completion of specialized computer research.

Standard 1: Developmental Practices (1021.S.1)

Students will analyze developmentally appropriate practices to plan for early childhood education and services.

Developmental Practices Objectives

Students will:

- 1021.1.1 Examine child development theories and their applications for educational and childcare practices as they relate to physical, social, emotional, and cognitive development of children.
- 1021.1.2 Determine a variety of assessment methods to observe and interpret children's growth and development.
- 1021.1.3 Consider cultural and environmental influences when assessing children's development.
- 1021.1.4 Determine special needs of children

Standard 2: Curriculum and Instruction (1021.S.2)

Students will demonstrate integration of curriculum and instruction to meet children's developmental needs and interests.

Curriculum and Instruction Objectives

Students will:

- 1021.2.1 Examine a variety of curriculum and instructional models.
- 1021.2.2 Demonstrate a variety of teaching methods to meet individual needs of children.

Standard 3: Professional Practices (1021.S.3)

Students will demonstrate professional practices and standards related to working with children.

Professional Practices Objectives

Students will:

- 1021.3.1 Examine education and training requirements and opportunities for career paths in early childhood education and services.
- 1021.3.2 Examine the impact of early childhood education and services occupations on local, state, national, and global economies.

The Education Profession

WVEIS Code 1022

This course will allow the student to examine the roles of school staff members and explore employment and entrepreneurial opportunities. Students will develop a professional portfolio, conduct research and write a research paper.

Standard 1: Careers in Education (1022.S.1)

Students will describe careers in education.

Careers in Education Objectives

Students will:

- 1022.1.1 Determine the roles and functions of individuals engaged in early childhood education and services.
- 1022.1.2 Explore opportunities for employment and entrepreneurial endeavors.
- 1022.1.3 Examine education and training requirements and opportunities for career paths in early childhood education and services.
- 1022.1.4 Examine the impact of early childhood education and services occupations on local, state, national, and global economies.

Standard 2: Professionalism (1022.S.2)

Students will demonstrate professional practices and standards related to working with children.

Professionalism Objectives

Students will:

- 1022.2.1 Utilize opportunities for continuing training and education.
- 1022.2.2 Apply professional ethical standards as accepted by the recognized professional organizations.
- 1022.2.3 Demonstrate enthusiasm, initiative, and commitment to program goals and improvements.

Standard 3: Business Management (1022.S.3)

Students will develop business management skills.

Business Management Objectives

Students will:

- 1022.3.1 Apply business management skills to planning businesses in early childhood education and services.
- 1022.3.2 Implement federal, state, and local standards, policies, regulations, and laws which impact children, families, and programs.

Elementary School Aide

WVEIS Code 1023

Students will work with elementary or middle school age children in a school setting. Students may grade papers, record student progress, run errands, assist with classroom chores, copy worksheets, prepare classroom teaching materials, design bulletin boards, and tutor students. Emphasis is placed on applying appropriate work habits and professional work ethics.

Standard 1: Developmental Practice (1023.S.1)

Students will analyze developmentally appropriate practices to plan for early childhood education and services.

Developmental Practices Objectives

Students will:

- 1023.1.1 Demonstrate effective strategies that promote children's growth and development.
- 1023.1.2 Demonstrate integration of curriculum and instruction to meet children's developmental needs and interests.
- 1023.1.3 Implement learning activities in all curriculum areas that meet the developmental needs of children.
- 1023.1.4 Implement an integrated curriculum that incorporates a child's language, learning styles, home experiences, and cultural values.
- 1023.1.5 Arrange learning centers that provide for children's exploration, discovery, and development
- 1023.1.6 Establish activities, routines, and transitions.

Standard 2: Learning Environment (1023.S.2)

Students will demonstrate a safe and healthy learning environment for children.

Learning Environment Objectives

Students will:

- 1023.2.1 Manage physical space to maintain a safe and healthy learning environment.
- 1023.2.2 Apply safe and healthy practices that comply with state regulations.
- 1023.2.3 Implement strategies to teach children health, safety, and sanitation habits.
- 1023.2.4 Document symptoms of child abuse and neglect and use appropriate procedures to report suspected abuse or neglect to the designated authorities.
- 1023.2.5 Implement basic health practices and prevention procedures for workers and children regarding childhood illness and communicable diseases.
- 1023.2.6 Demonstrate security and emergency procedures.

Standard 3: Collaborative Relationships (1023.S.3)

Students will demonstrate techniques for positive collaborative relationships with children.

Collaborative Relationships Objectives

Students will:

- 1023.3.1 Establish developmentally appropriate guidelines for behavior.
- 1023.3.2 Demonstrate problem-solving skills with children.
- 1023.3.3 Demonstrate interpersonal skills that promote positive and productive relationships with children.

Standard 4: Regulatory Requirement (1023.S.4)

Students will demonstrate professional practices and standards related to working with children.

Regulatory Requirement Objectives

Students will:

1023.4.1 Implement federal, state, and local standards, policies, regulations, and laws, which impact children, families, and programs.

ACDS Apprenticeship

WVEIS Code 1029

ACDS Apprenticeship is designed to provide students with on the job training in early care and education of children. A students is required to work with children 20 hours per week and be 17 years of age. Upon completion of the training program an apprentice receives a nationally recognized certificate as a Child Development Specialist from the U. S. Department of Labor. Apprentices must complete 3200-4000 hours of on the job training.

1. Must maintain a minimum of 20 hours a week working in a paid position with children.
2. Child care center must be registered with the U. S. Department of Labor as an approved site.
3. Maintain a journal describing activities participated in with children.
4. Complete a monthly time log of on the job hours. Must be signed by sponsor center supervisor. One copy for portfolio and one for ACDS headquarters.
5. Sponsoring center will evaluate apprentice. The evaluations must be complete and signed with copies going to the apprentice and their instructor.
6. Evaluation of apprenticeship is based on employer evaluation of job performance.
7. The student should apply concepts learned in the Child Care Specialist Program as listed in the content standards.

Standard 1: Child Development Specialist I Assignments

Students will complete the objectives as assigned.

Standard 1: Child Development Specialist II Assignments

Students will complete the objectives as assigned.

Standard 1: Child Development Specialist III Assignments

Students will complete the objectives as assigned.

Standard 1: Child Development Specialist IV Assignments

Students will complete the objectives as assigned.

* A student may receive up to four credit hours

ProStart I A

WVEIS Code 1013

ProStart is a foodservice curriculum developed by the Educational Foundation of the National Restaurant Association with input from thousands of foodservice professionals across the nation. The courses integrate academic and hands-on learning to provide an overview of the industry and competencies necessary for success in the foodservice industry. Completers of the ProStart program are eligible for a national certificate from the National Restaurant Association Educational Foundation. Students must pass rigorous tests at the completion of ProStart IA/IB, ProStart IIA/IIB, and complete 400 hour off-campus, paid internship. This course focuses on the basics of preparing and service of safe food, preventing accidents, using foodservice equipment and preparing certain types of food. It also addresses the business topics of human relations, customer service, controlling costs and certain math concepts.

Standard 1: Career Preparation (1013.S.1)

Students will prepare for a successful career in foodservice management.

Career Preparation Objectives

Students will:

- 1013.1.1 Explain how the food service industry provides a unique workplace environment.
- 1013.1.2 Describe the importance of customer service to success in foodservice and explain the elements of excellent service.
- 1013.1.3 Identify effective ways to communicate with customers and coworkers.
- 1013.1.4 Describe a variety of customers that have special needs.
- 1013.1.5 List employee workplace guidelines.
- 1013.1.6 Discuss the qualities of successful foodservice employees.
- 1013.1.7 Identify career opportunities within the foodservice industry.
- 1013.1.8 Describe the steps in looking for a job.
- 1013.1.9 Complete the necessary documents for a job interview including the resume, portfolio, cover letter and application.
- 1013.1.10 Participate in a job interview and write a follow-up thank you letter.

Standard 2: Prepare and Serve Safe Food (1013.S.2)

Students will learn how to prepare and serve safe food.

Prepare and Serve Safe Food Objectives

Students will:

- 1013.2.1 Demonstrate proper sanitary procedures for use in foodservice.
- 1013.2.2 Show how contamination and cross-contamination is most likely to occur.
- 1013.2.3 List the major causes of foodborne illnesses, and describe potentially hazardous foods.
- 1013.2.4 Describe the micro-organisms that cause foodborne illnesses and the conditions in which they thrive.
- 1013.2.5 Demonstrate safe and proper procedures for receiving, storing, preparing, holding, and serving food.
- 1013.2.6 Describe the seven HACCP steps.
- 1013.2.7 Discuss the role of the sanitarian and how managers prepare for health inspections.

Standard 3: Workplace Habits (1013.S.3)

Students will learn how to practice safe workplace habits.

Workplace Habits Objectives

Students will:

- 1013.3.1 Demonstrate proper safety procedures commonly used in foodservice operations including the use of fire extinguishers.
- 1013.3.2 Describe the role of OSHA regulations and explain the Hazard Communication Standard requirement for employers.
- 1013.3.3 Demonstrate proper procedures for reducing accidents involving fire, slips, trips, falls, lifting and carrying, cuts and equipment.
- 1013.3.4 Discuss liability issues relating to customers and employees.
- 1013.3.5 Discuss workman's compensation guidelines.
- 1013.3.6 Explain basic first aid concepts and procedures.
- 1013.3.7 Describe a Material Safety Data Sheet.

Standard 4: Foodservice Equipment Safety (1013.S.4)

Students will learn how to operate foodservice equipment safely and effectively.

Foodservice Equipment Safety Objectives

Students will:

- 1013.4.1 Demonstrate the safe use of foodservice equipment and utensils.
- 1013.4.2 Demonstrate how to sharpen and use different types of knives.
- 1013.4.3 Demonstrate how to cut and mix foods using standard kitchen equipment.
- 1013.4.4 Demonstrate proper maintenance, cleaning and sanitizing of foodservice equipment.
- 1013.4.5 List and describe the measuring utensils, hand tools, knives, pots and pans commonly used in a foodservice operation.
- 1013.4.6 List the equipment commonly used in the receiving, storage, food preparation, baking, holding and service, bar, dishwashing and waste disposal areas.

Standard 5: Math Functions Used In Foodservice Operations (1013.S.5)

Students will demonstrate business math functions used in foodservice operations.

Math Functions Used in Foodservice Operations

Students will:

- 1013.5.1 Demonstrate the four basic math functions as they relate to foodservice operations.
- 1013.5.2 List examples of the way fractions, decimals and percentages are used in foodservice operations.
- 1013.5.3 Discuss yield conversion factors.
- 1013.5.4 Identify the four basic units of measure in the metric system.
- 1013.5.5 Calculate standard recipe cost and cost per serving.
- 1013.5.6 Describe and give examples of controllable costs, fixed costs and variable costs as related to food, beverage and labor in foodservice operations.
- 1013.5.7 Explain the basic guidelines used for establishing controls in purchasing, receiving and storage of food and supplies.
- 1013.5.8 Explain the importance of food production standardization.
- 1013.5.9 List the three standard procedures needed to control production volume.

Standard 6: Basics of Food Preparation (1013.S.6)

Students will demonstrate the basics of food preparation.

Basics of Food Preparation Objectives

Students will:

- 1013.6.1 Describe the various liquid and dry cooking methods and the foods to which they are best

- suited.
- 1013.6.2 Describe standardized recipe components and functions and convert them to smaller and larger quantities.
- 1013.6.3 Demonstrate types of knife cuts used in foodservice.
- 1013.6.4 Identify the tools commonly used in foodservice for wet and dry measure and demonstrate understanding of equivalence of standard American and metric measures.
- 1013.6.5 Define common cooking and foodservice preparation terms.

Standard 7: Nutrition in Foodservice Operation (1013.S.7)

Students will discuss the role of nutrition in foodservice operations.

Nutrition in Foodservice Operation Objectives

Students will:

- 1013.7.1 List and define the six groups of nutrients.
- 1013.7.2 Explain the role of Recommended Dietary Allowances and Food Guide Pyramid in planning healthful meals.
- 1013.7.3 Discuss the Dietary Guidelines for Americans.
- 1013.7.4 Explain the importance of reading nutritional labels.
- 1013.7.5 Discuss special diet concerns of customers.
- 1013.7.6 Demonstrate healthy cooking methods and identify recipes that preserve nutrients.
- 1013.7.7 Plan and prepare appealing and nutritionally balanced meals.

ProStart I B

WVEIS Code 1014

ProStart is a foodservice curriculum developed by the Educational Foundation of the National Restaurant Association with input from thousands of foodservice professionals across the nation. The courses integrate academic and hands-on learning to provide an overview of the industry and competencies necessary for success in the foodservice industry. Completers of the ProStart program are eligible for a national certificate from the National Restaurant Association Educational Foundation. Students must pass rigorous tests at the completion of ProStart IA/IB and ProStart IIA/IIB, and complete 400 hour off-campus, paid internship. This course focuses on the basics of preparing and serving of safe food, preventing accidents, using foodservice equipment and preparing certain types of foods. It also addresses the business topics of human relations, customer service, controlling costs and certain math concepts.

Standard 1: Control Foodservice Costs (1014.S.1)

Students will learn how to control foodservice costs.

Control Foodservice Costs Objectives

Students will:

- 1014.1.1 Explain the four step cost control process.
- 1014.1.2 Calculate projected revenue, average cover and determine the revenue level of a foodservice operation.
- 1014.1.3 Discuss the relationship between cost and sales to determine food cost percentage.
- 1014.1.4 Perform math computations to define cost/volume/profit relationships.
- 1014.1.5 Define and explain the importance of an operative budget.
- 1014.1.6 Demonstrate operational procedures for preventing waste of food, beverages and supplies.
- 1014.1.7 Illustrate the cost percentage formula and apply it to operational procedures.
- 1014.1.8 Explain the three goals of sales control.
- 1014.1.9 Calculate total sales including tax and tip.
- 1014.1.10 Calculate average sales per customer.
- 1014.1.11 Balance cash register receipts.
- 1014.1.12 Explain the importance of an opening and closing inventory.
- 1014.1.13 Illustrate five ways to determine closing inventory and calculate its dollar value.
- 1014.1.14 Determine daily and monthly food cost percentages.
- 1014.1.15 Determine menu pricing using the four standard methods.

Standard 2: Sandwiches and Breakfast Foods (1014.S.2)

Students will prepare sandwiches and breakfast foods.

Sandwiches and Breakfast Foods Objectives

Students will:

- 1014.2.1 Explain how to keep dairy products safe and sanitary.
- 1014.2.2 Define the terms pasteurize and homogenize.
- 1014.2.3 Compare the differences of margarine and butter.
- 1014.2.4 Compare and contrast ripened, unripened, aged and processed cheeses and give examples of each.
- 1014.2.5 List the characteristics of eggs including size and grade.
- 1014.2.6 Prepare and serve eggs using a variety of cooking methods.
- 1014.2.7 Describe and prepare various types of breakfast foods and beverages.
- 1014.2.8 Demonstrate the set up of an efficient sandwich station.
- 1014.2.9 List different types of sandwiches and sandwich fillings.

Standard 3: Salads and Garnishes (1014.S.3)

Students will prepare salads and garnishes.

Sales and Garnishes Objectives

Students will:

- 1014.3.1 Identify and describe the various ingredients used to make assorted salads.
- 1014.3.2 Prepare and store salads properly.
- 1014.3.3 List the ingredients and prepare various salad dressings.
- 1014.3.4 Identify ingredients and prepare several dips.
- 1014.3.5 Demonstrate techniques used to prepare garnishes.
- 1014.3.6 Demonstrate garnishing plates.

Standard 4: Fruits and Vegetables (1014.S.4)

Students will describe the characteristics of fruits and vegetables.

Fruits and Vegetables Objectives

Students will:

- 1014.4.1 Describe and identify the various varieties of fruits and vegetables and the forms in which they are available (fresh, frozen, etc.).
- 1014.4.2 List seasons in which fresh fruits and vegetables are at their best quality and lowest price.
- 1014.4.3 Match different cooking methods to various fruits and vegetables.
- 1014.4.4 Explain how to properly select and purchase, receive, store and handle fruits and vegetables.
- 1014.4.5 Prepare fruits and vegetables in a variety of ways.

Standard 5: Management Techniques (1014.S.5)

Students will understand personnel management techniques.

Management Techniques Objectives

Students will:

- 1014.5.1 Define front of the house and back of the house duties and responsibilities.
- 1014.5.2 Discuss effective methods of recruiting, motivating and retaining employees.
- 1014.5.3 State the importance of legal interviewing skills, new employee orientation programs and employee performance evaluations.
- 1014.5.4 Identify common foodservice personnel problems and describe effective techniques for managing them.
- 1014.5.5 Describe the process involved in staff scheduling.
- 1014.5.6 Explain why the American Disabilities Act and sexual harassment issues can affect a foodservice operation.

Hospitality Industry and Service

WVEIS Code 1015

The course will concentrate on how the hospitality industry's growth effects the trends in foodservice. Job opportunities in various foodservice and hospitality settings will be investigated through the Internet. Entrepreneurship opportunities, education, and training programs for preparation to work in the hospitality industry will be explored. Students will receive practical skills and experience in the front-of-the-house service in the foodservice industry.

Standard 1: Hospitality Basics (1015.S.1)

Students will study and review hospitality basics.

Hospitality Basics Objectives

Students will:

- 1015.1.1 Describe different food production and service opportunities.
- 1015.1.2 Describe career opportunities related to food production and service.

Standard 2: Trends in the Foodservice Industry (1015.S.2)

Students will study and evaluate the trends in the foodservice industry.

Trends in the Foodservice Industry Objectives

Students will:

- 1015.2.1 Describe how foodservice trends affect foodservice operations.
- 1015.2.2 Identify employment opportunities in various commercial and non-commercial foodservice operations.

Standard 3: Education and Training Opportunities (1015.S.3)

Students will identify education and training opportunities in foodservice.

Education and Training Opportunities Objectives

Students will:

- 1015.3.1 Describe educational and training programs that can prepare you for a foodservice career.
- 1015.3.2 List ways to prepare for a foodservice career.

Standard 4: Entrepreneurship Opportunities (1015.S.4)

Students will review and study entrepreneurship opportunities.

Entrepreneurship Opportunities Objectives

Students will:

- 1015.4.1 Identify small business opportunities in foodservice.
- 1015.4.2 Explain the governmental requirements for starting and running a foodservice business.
- 1015.4.3 Describe the function of a business plan.

Standard 5: Service Basics (1015.S.5)

Students will demonstrate service basics.

Service Basics Objectives

Students will:

- 1015.5.1 Identify the role and duties of each member of the service staff.
- 1015.5.2 Demonstrate service skills that provide exceptional customer service.
- 1015.5.3 Give an example of how an employee can use time and motion effectively.

Standard 6: Serving Techniques (1015.S.6)

Students will learn techniques in serving of customers.

Serving Techniques Objectives

Students will:

- 1015.6.1 Describe the role and duties of the server.
- 1015.6.2 Use suggestive selling techniques to increase sales.
- 1015.6.3 Serve food and beverages properly.
- 1015.6.4 Calculate customer checks.

Standard 7: Serving Beverages (1015.S.7)

Students will learn proper techniques for serving beverages.

Serving Beverages Objectives

Students will:

- 1015.7.1 Operate and maintain hot and cold beverage equipment.
- 1015.7.2 Explain how to prepare cold beverage equipment for service.

Standard 8: Dining Characteristics (1015.S.8)

Students will learn the different characteristics of dining today.

Dining Characteristics Objectives

Students will:

- 1015.8.1 Describe the five different types of dining environments.
- 1015.8.2 Explain the characteristics of various types of meal service.
- 1015.8.3 Describe and demonstrate proper dining etiquette.
- 1015.8.4 Demonstrate the different styles of meal service.

Standard 9: Dining Room Environment (1015.S.9)

Students will identify and develop the proper dining room environment.

Dining Room Environment Objectives

Students will:

- 1015.9.1 Restock side station items.
- 1015.9.2 Set glassware, tableware, and flatware appropriately.
- 1015.9.3 Fold napkins into various decorative shapes.
- 1015.9.4 Demonstrate the use of appropriate table settings and centerpiece.

Foodservice Management Practices

WVEIS Code 1016

This class will further prepare students in the ProStart program to understand the responsibilities of a manager in the foodservice industry. The HACCP system of sanitation, workplace safety, employment laws, standards, and regulations will be considered from the manager's perspective. Ordering of foods, production sheets, scheduling, menu planning, costing out dishes, etc. will be practiced. Students will address food-handling procedures, monitoring techniques and record keeping procedures.

Standard 1: Concepts in Foodservice Management (1016.S.1)

Students will define the concepts of foodservice management.

Concepts in Foodservice Management Objectives

Students will:

- 1016.1.1 List the qualities of an effective manager.
- 1016.1.2 Define leadership.
- 1016.1.3 Create an effective managers time management profile.
- 1016.1.4 Explain the role of communication in a foodservice operation.
- 1016.1.5 Illustrate the management structure in a food production and service operation.
- 1016.1.6 Demonstrate the use of different types of foodservice computerized point-of-sale software programs.
- 1016.1.7 Compute, food, beverage and labor cost percentages.
- 1016.1.8 Create a profit and loss statements.
- 1016.1.9 Explain the role of forecasting and breakeven analysis used in foodservice operations.
- 1016.1.10 Discuss the process used in determining purchasing decisions.
- 1016.1.11 List the criteria used for inspecting food at delivery.
- 1016.1.12 Demonstrate effective inventory control procedures using an inventory control tracking system.
- 1016.1.13 Explain the importance of portion control and list ways to minimize waste in an operation.

Standard 2: Responsibilities of a Manager (1016.S.2)

Students will explain a manager's role in supervising employees.

Responsibilities of a Manager Objectives

Students will:

- 1016.2.1 List and explain the challenges that managers face daily.
- 1016.2.2 Describe the process used in employee selection including job description, job applications and interviewing skills.
- 1016.2.3 Participate in a mock interview role play.
- 1016.2.4 Define the terms positive reinforcement and mentorship.
- 1016.2.5 Explain the standards of conduct manager's use in supervising employees.
- 1016.2.6 Create an employee work schedule.
- 1016.2.7 Identify the criteria used when evaluating employees.

Standard 3: Managing a Foodservice Facility (1016.S.3)

Students will possess a through knowledge of effectively managing a foodservice facility.

Managing a Foodservice Facility Objectives

Students will:

- 1016.3.1 Describe how workplace design impacts employees' performance and success in a foodservice operation.
- 1016.3.2 Explain the two elements of an effective work area.
- 1016.3.3 List the six loss prevention factors.

- 1016.3.4 Identify management's responsibility for implementing loss prevention factors.
- 1016.3.5 Explain the importance of effective equipment handling, maintenance and repairs.
- 1016.3.6 Conduct a commercial kitchen inspection.
- 1016.3.7 Explain the considerations of a foodservice operations when purchasing business and facility insurance.

Standard 4: Menu Planning (1016.S.4)

Students will possess a thorough knowledge of menu planning, organization, design and pricing.

Menu Planning Objectives

Students will:

- 1016.4.1 List basic menu planning principles.
- 1016.4.2 Summarize the factors that influence a menu.
- 1016.4.3 Describe the menu types and their advantages and disadvantages.
- 1016.4.4 Outline the Truth-In-More Guidelines.
- 1016.4.5 Develop a list of effective menu item descriptions.
- 1016.4.6 Identify the element that influences menu style and design.
- 1016.4.7 Contrast basic menu formats.
- 1016.4.8 Describe the basic menu categories and how they are organized.
- 1016.4.9 Identify and discuss the influences that affect menu pricing.
- 1016.4.10 Use the factor method and markup-on-cost method of pricing.
- 1016.4.11 Contrast the competitors' pricing method with the psychological pricing method.
- 1016.4.12 Create a menu for a foodservice operation incorporating; menu influences, menu type, menu style and design, menu format, types of meals to be served, menu categories, and menu pricing considerations.

Standard 5: Foodservice Marketing Principles (1016.S.5)

Students will understand foodservice marketing principles.

Foodservice Marketing Principles Objectives

Students will:

- 1016.5.1 Explain the purpose of marketing a foodservice operation.
- 1016.5.2 Describe the three types of business ownerships and list advantages and disadvantages.
- 1016.5.3 Analyze location, customer base, competition and trends used to develop a marketing strategy.
- 1016.5.4 Describe how positioning, atmosphere and customer needs influence marketing.
- 1016.5.5 Develop a position statement for a restaurant.
- 1016.5.6 Contrast advertising and publicity.
- 1016.5.7 Design an ad for a restaurant.
- 1016.5.8 Identify advantages and disadvantages of direct marketing.
- 1016.5.9 Develop a customer comment card.

Standard 6: Foodservice Standards and Regulations (1016.S.6)

Students will discuss foodservice standards and regulations.

Foodservice Standards and Regulations Objectives

Students will:

- 1016.6.1 Outline the standards of quality used to evaluate food.
- 1016.6.2 Identify the various government agencies that regulate the foodservice industry and explain their roles.
- 1016.6.3 Describe food grading and food inspection and why they are used.
- 1016.6.4 Identify industry standards for handling food safely.

Standard 7: Employment Laws (1016.S.7)

Students will possess a thorough knowledge of employment laws.

Employment Laws Objectives

Students will:

- 1016.7.1 Identify and describe the laws related to worker's rights and their safety in a foodservice operation.
- 1016.7.2 Define discrimination, sexual harassment, The Americans with Disability Act and how they affect all public and private employers.
- 1016.7.3 Create a chart listing the employment laws and their provisions.
- 1016.7.4 Discuss the three laws that all foodservice workers should be aware of and the rights that each law protects.
- 1016.7.5 Use the Internet and research a court case about worker's compensation.

Standard 8: Safety (1016.S.8)

Students will explain why safety is everyone's responsibility.

Safety Objectives

Students will:

- 1016.8.1 Identify work place safety guidelines and equipment.
- 1016.8.2 Outline the eight ways to prevent fires.
- 1016.8.3 Create a chart identifying class of fire, type of flammable materials and the type of extinguisher.
- 1016.8.4 Demonstrate using a fire extinguisher.
- 1016.8.5 Demonstrate fire emergency procedures to be used in the event of fire.
- 1016.8.6 Compile a list of emergency phone numbers.
- 1016.8.7 Describe first aid measures for burns and wounds.
- 1016.8.8 List eight ways to prevent falls.
- 1016.8.9 Define Heimlich Maneuver and Cardiopulmonary Resuscitation (CPR).
- 1016.8.10 Demonstrate the Heimlich Maneuver and CPR.
- 1016.8.11 Perform a safety audit in a commercial kitchen.

Standard 9: Sanitation (1016.S.9)

Students will describe the various sanitation challenges and issues.

Sanitation Objectives

Students will:

- 1016.9.1 Compare sources of cross contamination and direct contamination.
- 1016.9.2 Identify biological, chemical, and physical hazards and define each.
- 1016.9.3 Create a list of foodborne illness, their symptoms and the foods involved.
- 1016.9.4 Outline the necessary procedures to be followed when responding to a foodborne illness outbreak.
- 1016.9.5 Describe the function of a sound pest management program.
- 1016.9.6 Create a safety manual for a foodservice operation.

Standard 10: Safe Food-Handlers (1016.S.10)

Students will describe the requirement of safe food-handlers.

Safe Food-Handlers Objectives

Students will:

- 1016.10.1 Demonstrate appropriate grooming practices for the workplace.
- 1016.10.2 Explain when and why gloves are used in the workplace.

1016.10.3 Demonstrate proper hand washing procedures.

Standard 11: HACCP (1016.S.11)

Students will explain the purpose of a HACCP system.

HACCP Objectives

Students will:

- 1016.11.1 Define HACCP.
- 1016.11.2 List and explain the seven steps necessary in setting up a HACCP system.
- 1016.11.3 Identify food safety hazards.
- 1016.11.4 Describe the purpose of a critical control point.
- 1016.11.5 Create a HACCP analysis chart, illustrating the flow of food with potential hazards, control points and corrective actions.
- 1016.11.6 List and explain ways to control hazards in a foodservice operation.
- 1016.11.7 Chart the safe internal cooking temperatures and times for poultry, meats, fish and eggs.
- 1016.11.8 Explain the role of thermometers in keeping food safe.
- 1016.11.9 Demonstrate how to calibrate a thermometer.

Standard 12: Flow of Food (1016.S.12)

Students will learn to identify and safely evaluate the flow of food in a foodservice establishment.

Flow of Food Objectives

Students will:

- 1016.12.1 Explain why it is important to inspect all food products for damage and spoilage when they are received.
- 1016.12.2 Identify the potential problem areas when receiving food.
- 1016.12.3 Outline the twelve general preparation and cooking guidelines.
- 1016.12.4 Describe correct procedures for holding foods, serving foods, cooling foods and reheating foods.
- 1016.12.5 Demonstrate the proper procedure for setting up a three bowl sink for manual dishwashing.
- 1016.12.6 List types of sanitizers and their advantages and disadvantages.
- 1016.12.7 List the general guidelines to be followed when operating a commercial dishwasher.
- 1016.12.8 Demonstrate the proper way to clean and maintain a commercial dishwasher.
- 1016.12.9 Create a safety poster illustrating where potential problems can occur in receiving, storing, preparing, cooking, holding and serving food.

Culinary Nutrition and the Menu

WVEIS Code 1017

Nutrition basics and the guidelines used for foodservice meal planning will be covered in this class. Dietary guidelines and special dietary needs will be used in modifying menu choices. Students will apply healthy cooking techniques to prepared foods.

Standard 1: Nutrition Basics (1017.S.1)

Students will describe nutrition basics and guidelines for meal planning.

Nutrition Basics Objectives

Students will:

- 1017.1.1 Define the six categories of nutrients.
- 1017.1.2 Create vitamin and mineral charts identifying functions in the body and foodservice.
- 1017.1.3 Explain the function of trace minerals.
- 1017.1.4 Define additives and the foods in which they are used.
- 1017.1.5 List three methods a foodservice operation uses to prepare healthful meals.
- 1017.1.6 Explain the purpose of the Dietary Guidelines for Americans, nutrition labels and the Food Guide Pyramid.
- 1017.1.7 Describe how age, activity level, lifestyle and health influence dietary needs.
- 1017.1.8 Create a menu using healthy food choices.
- 1017.1.9 Demonstrate how nutrients in food are affected by time and water.
- 1017.1.10 Prepare, cook and store food to retain nutrients.
- 1017.1.11 List ways to reduce the amount of fat, cholesterol and sodium in recipes.
- 1017.1.12 Describe the role of flavorings and seasonings in healthy cooking.
- 1017.1.13 Create a chart describing different cooking oils and their uses.
- 1017.1.14 Evaluate a restaurant menu for nutritional value, variety and appeal.

Standard 2: Nutritional Concepts (1017.S.2)

Students will define the nutritional concepts used in menu planning.

Nutritional Concepts Objectives

Students will:

- 1017.2.1 Compare traditional menu selections with nutritional menu selections.
- 1017.2.2 Perform a nutritional analysis on items from traditional and nutritional menu selections.
- 1017.2.3 Explain the importance of a nutritionally balanced menu.
- 1017.2.4 List nutritional meal planning food choices.
- 1017.2.5 Demonstrate how color affects plate appeal of nutritional food products.
- 1017.2.6 Discuss why low-fat diet choices should be offered on a menu.
- 1017.2.7 Discuss why diabetic diet choices should be included in the menu planning process.
- 1017.2.8 Discuss the role of nutritional menu item descriptions.
- 1017.2.9 Identify the most common foods and additives known to cause allergic reactions.
- 1017.2.10 Explain considerations used when planning and preparing a vegetarian menu.
- 1017.2.11 Plan and prepare a nutritionally balanced meal.
- 1017.2.12 Create a nutritionally balanced menu.

Baking and Pastry Applications

WVEIS Code 1018

Baking formulas and equipment functions and use will be taught in this class along with sanitation and safety in the foodservice industry. After understanding bakeshop ingredients and procedure, the students will have hands-on lab experience in baking the following: Yeast Breads, Biscuits, Cookies, Pies, Quick Breads, Muffins, Cakes and Specialty Desserts.

Standard 1: Bakeshop Formulas, Ingredients and Equipment (1018.S.1)

Students will possess a thorough knowledge of bakeshop formulas, equipment and bakeshop ingredients.

Bakeshop Formulas, Ingredients and Equipment Objectives

- 1018.1.1 Define and discuss bakeshop formulas.
- 1018.1.2 Demonstrate accurate volume and weight measure using balance scale weights and measurement methods.
- 1018.1.3 Demonstrate the yield of a doubled recipe.
- 1018.1.4 Define a baker's percentage and explain its function.
- 1018.1.5 Convert a cake recipe using a baker's percentage formula.
- 1018.1.6 Identify and demonstrate the function of bakeshop equipment and tools.
- 1018.1.7 Demonstrate the use and cleaning of pastry bags and decorator tips.
- 1018.1.8 Prepare and bake a double crust fruit pie using a various baking and pastry tools.
- 1018.1.9 Prepare, bake, and decorate a two-tier cake.
- 1018.1.10 Demonstrate how a sheeter is used in baking.
- 1018.1.11 Explain the importance of using exact ingredients and the role of key ingredients in baking.
- 1018.1.12 Create a chart identifying the different types of flours and their baking characteristics.
- 1018.1.13 Identify various liquids used in baking and their affects on the outcome of the baked product.
- 1018.1.14 Demonstrate how different fats are used in the baking process.
- 1018.1.15 Identify the functions of sugars and sweeteners and their contributions to baking.
- 1018.1.16 Discuss the functions of eggs and egg products in baking.
- 1018.1.17 Describe the different leavening agents and their functions when used in the baking process.
- 1018.1.18 Create a chart describing spices and their uses in the bakeshop.
- 1018.1.19 Describe the assortment of flavorings, chocolates, cocoas and their uses in baking.
- 1018.1.20 Identify the nuts and additives used in baking and identify the baking products that they are primarily used in.

Standard 2: Batter (1018.S.2)

Students will identify proper procedures for preparing batters and doughs.

Batter Objectives

- 1018.2.1 Describe the ingredients' ratio used in batters.
- 1018.2.2 Describe the ingredients' ratio used in doughs.
- 1018.2.3 Prepare bread doughs and batters using the nine different ways to mix them.
- 1018.2.4 Describe the impact of carryover baking.

Standard 3: Yeast Dough (1018.S.3)

Students will identify proper procedures and ingredients for yeast dough production.

Yeast Dough Objectives

Students will:

- 1018.3.1 Describe the characteristics of quality yeast products.
- 1018.3.2 Explain why temperature control is important in preparing yeast doughs.
- 1018.3.3 List the three common types of yeast used in baking.
- 1018.3.4 Define the term starter and list the ingredients in a starter mixture.
- 1018.3.5 Describe the function that each ingredient plays in yeast dough production.

- 1018.3.6 List the three most common types of yeast doughs and prepare one of each type.
- 1018.3.7 Define the rolled-in fat yeast dough process.
- 1018.3.8 List the twelve stages that apply to all yeast dough products.
- 1018.3.9 Describe the three basic methods of mixing yeast dough ingredients: the straight dough method, the modified straight dough method and the sponge method.
- 1018.3.10 Define the "240 factor".
- 1018.3.11 Describe the process of fermentation in yeast dough.
- 1018.3.12 Identify common causes of failure in yeast bread production.
- 1018.3.13 List the four actions of dough punching.
- 1018.3.14 Demonstrate dividing, rounding, proofing, shaping and panning dough.
- 1018.3.15 Explain how washing, slashing and docking affect the baking quality and eye appeal of finished products.
- 1018.3.16 Discuss the five factors that affect oven temperature and baking times of bread and roll doughs.
- 1018.3.17 List the four stages of the baking process that contribute to the final product.
- 1018.3.18 Define glazing, staling prevention and proper packaging and storage of yeast products.
- 1018.3.19 Evaluate a finished yeast product using shape, volume, crumb, crust, color, tenderness and taste as the criteria.

Standard 4: Quick Bread Basics (1018.S.4)

Students will learn the basics of quick bread preparation.

Quick Bread Objectives

Students will:

- 1018.4.1 Identify the characteristics of quick breads.
- 1018.4.2 Explain the functions of quick bread ingredients.
- 1018.4.3 Compare quick bread doughs and batters.
- 1018.4.4 List the nutrients contained in quick breads.
- 1018.4.5 Explain the difference in the actions of baking soda versus baking powder in the baking process.
- 1018.4.6 Prepare a loaf bread.
- 1018.4.7 Describe how quick breads are leavened.

Standard 5: Biscuit Making Techniques (1018.S.5)

Students will learn the basics of biscuit preparation and baking.

Biscuit Making Techniques Objectives

Students will:

- 1018.5.1 Demonstrate the biscuit method of baking.
- 1018.5.2 Identify quality standards and characteristics of biscuits.
- 1018.5.3 Describe how biscuits are cut and formed.
- 1018.5.4 Prepare quality biscuits.

Standard 6: Muffin Making Techniques (1018.S.6)

Students will learn the basics of muffin preparation and baking.

Muffin Making Techniques Objectives

Students will:

- 1018.6.1 Demonstrate the blending and creaming methods of mixing.
- 1018.6.2 Identify quality standards and characteristics of muffins.
- 1018.6.3 Describe how to properly portion muffin batter.
- 1018.6.4 Prepare quality muffins.

Standard 7: Cake and Cookie Preparation (1018.S.7)

Students will gain knowledge and demonstrate ability in the preparation and baking of cookies and cakes.

Cake and Cookie Preparation Objectives

Students will:

- 1018.7.1 Identify characteristics of the five different types of cookies.
- 1018.7.2 Identify the factors that influence the spread of cookies.
- 1018.7.3 Demonstrate the one-stage and creaming methods used in mixing cookies.
- 1018.7.4 Mix, pan and bake two types of cookies.
- 1018.7.5 Cool, serve, and store cookies properly.
- 1018.7.6 Describe the five types of cakes and demonstrate their mixing methods.
- 1018.7.7 Demonstrate how to scale and pan cakes.
- 1018.7.8 Identify the five types of butter creams.
- 1018.7.9 Bake, cool, ice and properly serve two types of cakes.

Standard 8: Pies (1018.S.8)

Students will identify correct pie making techniques.

Pies Objectives

Students will:

- 1018.8.1 Describe pie dough preparation basics.
- 1018.8.2 Prepare a flaky and a mealy pie dough.
- 1018.8.3 Mix, shape, roll and pan a basic pie dough.
- 1018.8.4 Name the three major types of pie fillings.
- 1018.8.5 Prepare a single and double crust pie.
- 1018.8.6 Demonstrate proper pie storage and serving techniques.

Standard 9: Specialty Desserts (1018.S.9)

Students will possess a through knowledge of specialty dessert preparation.

Specialty Desserts Objectives

Students will:

- 1018.9.1 List specialty dessert options and explain their differences.
- 1018.9.2 Contrast custards and puddings.
- 1018.9.3 Describe common ingredients and preparation methods used in Bavarian cream, mousse and chiffons.
- 1018.9.4 Discuss food safety concerns in cream dessert preparation and storage.
- 1018.9.5 Prepare, serve and store two types of specialty desserts properly.

ProStart II A

WVEIS Code 1019

ProStart is a foodservice curriculum developed by the Educational Foundation of the National Restaurant Association with input from thousands of foodservice professionals across the nation. The courses integrate academic and hands-on learning to provide an overview of the industry and competencies necessary for success in the foodservice industry. Completers of the ProStart program are eligible for a national certificate from the National Restaurant Association Educational Foundation. Students must pass rigorous tests at the completion of ProStart IA/IB and ProStart IIA/IIB, and complete a 400 hour off-campus, paid internship. This course focuses on the basics of quality table service, menu planning, industry careers and preparing certain types of foods. It also addresses the business topics of marketing, communication, accounting, purchasing, and inventory control.

Standard 1: History of Foodservice (1019.S.1)

Students will discuss the history of foodservice.

History of Foodservice Objectives

Students will:

- 1019.1.1 Define the key terms of foodservice and their origins.
- 1019.1.2 List famous chefs from history and note their accomplishments.
- 1019.1.3 Explain the pasteurization process.
- 1019.1.4 Describe the key terms used for different cuisines of the world.
- 1019.1.5 Identify global cultures and traditions related to food.
- 1019.1.6 Demonstrate preparation methods used in cuisines of the world.
- 1019.1.7 Discuss the growth of foodservice and different types of foodservice operations in the United States.
- 1019.1.8 List historical entrepreneurs who have influenced foodservice in the United States.
- 1019.1.9 Identify present and future trends that influence the foodservice industry.
- 1019.1.10 Explain the differences between aquaculture, organic farming and hydroponics farming.

Standard 2: Potatoes, Grains and Pasta (1019.S.2)

Students will prepare potatoes, grains and pasta.

Potatoes, Grains and Pasta Objectives

Students will:

- 1019.2.1 Explain how to properly select, receive and store potatoes, grains and pasta.
- 1019.2.2 Identify types of grains, meals, flours and other starches and their uses.
- 1019.2.3 Identify types of dried pasta and noodles and their uses.
- 1019.2.4 Identify types of potatoes and their uses.
- 1019.2.5 Match different cooking methods to potatoes, grains and pasta.
- 1019.2.6 Prepare potatoes, grains and pasta using a variety of cooking techniques.
- 1019.2.7 Identify and describe different types of legumes.
- 1019.2.8 Prepare a variety of recipes using different cooking techniques for legumes.

Standard 3: Accounting Practices (1019.S.3)

Students will learn how to use standard accounting practices.

Accounting Practices Objectives

Students will:

- 1019.3.1 Define and explain key accounting terms and principles used in foodservice operations.
- 1019.3.2 Demonstrate basic accounting principles and apply them to common foodservice operations.
- 1019.3.3 Practice double-entry accounting (recording transactions in balanced T accounts).
- 1019.3.4 Read and interpret income statements and balance sheets.

- 1019.3.5 Calculate cost of sales using opening and closing inventory figures.
- 1019.3.6 Use the balance sheet equation to determine assets, liabilities and owners equity.

Standard 4: Quality Service (1019.S.4)

Students will explain and demonstrate the techniques necessary for quality service.

Quality Service Objectives

Students will:

- 1019.4.1 Describe and demonstrate the similarities and differences between American, French, English, Russian and quick service.
- 1019.4.2 Demonstrate tableside preparation techniques.
- 1019.4.3 Describe traditional service staff and list the duties and responsibilities of each staff position.
- 1019.4.4 Identify various server tools and dining utensils and explain specific uses for each.
- 1019.4.5 Explain and demonstrate the correct way to stock a service station.
- 1019.4.6 List factors considered when ordering and using cups, glassware and china.
- 1019.4.7 Demonstrate the correct way to set and clear the table.
- 1019.4.8 Show how servers should properly identify, describe and recommend menu items to guests.
- 1019.4.9 Present a guest check, receive payment and say goodbye to a guest properly.
- 1019.4.10 Describe methods used to effectively resolve customer complaints.

Standard 5: Desserts and Baked Goods (1019.S.5)

Students will prepare desserts and baked goods.

Desserts and Baked Goods Objectives

Students will:

- 1019.5.1 Identify the functions of basic ingredients used in desserts and breads.
- 1019.5.2 Describe common desserts and methods used to prepare them.
- 1019.5.3 Prepare various desserts and baked goods and store them properly.
- 1019.5.4 Bake different types of breads and quick breads.
- 1019.5.5 Describe different types of cookies and demonstrate various preparation methods.
- 1019.5.6 Identify and describe types and roles of strengtheners, shortenings, sweeteners, flavoring, leaveners and thickeners.
- 1019.5.7 Describe how chocolate is made, tempered and stored.
- 1019.5.8 Define the key terms associated with chocolate.
- 1019.5.9 Explain how crème anglaise, pastry creams and Bavarian creams are prepared.
- 1019.5.10 List the steps used to prepare poached fruits and tortes.

Standard 6: Purchasing and Inventory Control (1019.S.6)

Students will practice appropriate purchasing and inventory control procedures.

Purchasing and Inventory Control Objectives

Students will:

- 1019.6.1 Define the key terms associated with purchasing decisions in the foodservice industry.
- 1019.6.2 List the three main layers in a channel of distribution.
- 1019.6.3 Describe the factors involved in selecting appropriate suppliers.
- 1019.6.4 Explain the differences between formal and informal buying and the formal bidding process.
- 1019.6.5 Define franchise, independent, chain and commissary types of foodservice operations.
- 1019.6.6 Prepare a purchase order and develop a purchase specification list for items based on inventory information.
- 1019.6.7 Determine when and how often to order inventory items using both perpetual and physical inventory methods.
- 1019.6.8 Describe proper receiving and storage procedures and necessary documentation requirements.

1019.6.9 Explain procedures used to issue items and track inventory.

ProStart II B

WVEIS Code 1020

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Standard 1: Soups, Stocks and Sauces (1020.S.1)

Students will prepare soups, stocks and sauces.

Soups, Stocks and Sauces Objectives

- 1020.1.1 List the common ingredients of and describe the proper procedure for making a quality stock.
- 1020.1.2 Prepare a stock.
- 1020.1.3 Identify and prepare the two basic kinds of soup.
- 1020.1.4 List and define specialty or national soups.
- 1020.1.5 Explain the preparation methods and the basic ingredients for broth, consommé, puree, clear and cream soups.
- 1020.1.6 Define and prepare the grant or "mother" sauces and the sauces derived from them.
- 1020.1.7 List and define terms associated with the miscellaneous sauces.
- 1020.1.8 Match each miscellaneous sauce with its primary ingredients.
- 1020.1.9 Discuss factors to be considered when selecting a sauce to serve with a meal.

Standard 2: Menu (1020.S.2)

Students will plan an effective menu.

Menu Objectives

Students will:

- 1020.2.1 Explain two reasons why a menu is essential to the overall success of an operation.
- 1020.2.2 List and describe types of menus and the operations in which they are most commonly used.
- 1020.2.3 Discuss the factors to be considered in menu development.
- 1020.2.4 Prepare a menu analysis worksheet.
- 1020.2.5 Design a creative menu that uses a correct menu format.
- 1020.2.6 Critique the physical layout of menus from existing foodservice operations.

Standard 3: Marketing Techniques (1020.S.3)

Students will describe how marketing techniques are used in food service.

Marketing Techniques Objectives

Students will:

- 1020.3.1 Describe the basic marketing concepts and terms.
- 1020.3.2 Describe the elements and create one marketing plan.
- 1020.3.3 Describe elements of successful community and public relations.
- 1020.3.4 Write an effective press release.
- 1020.3.5 Explain the various advertising media and list advantages and disadvantages of each.
- 1020.3.6 Plan a successful marketing and promotional campaign using commonly used professional tools.

Standard 4: Meats, Poultry and Seafood (1020.S.4)

Students will prepare meats, poultry and seafood.

Meats, Poultry and Seafood Objectives

Students will:

- 1020.4.1 Explain the federal grading systems for meat, poultry, fish and shellfish.
- 1020.4.2 Describe the various forms of meat, poultry, fish and shellfish.
- 1020.4.3 Discuss proper procedures for receiving, storing and handling meat, poultry, fish and shellfish.
- 1020.4.4 Prepare meat, poultry, pork, fish and shellfish using a variety of cooking methods.
- 1020.4.5 Identify prime cuts for beef, veal, lamb and pork.
- 1020.4.6 Define key terms relating to meat, poultry, pork, veal, lamb and seafood.
- 1020.4.7 Match various cooking methods with different forms of meat, poultry, pork, veal, lamb and seafood.

Standard 5: Communication (1020.S.5)

Students will learn the techniques on how to communicate well with customers.

Communication Objectives

Students will:

- 1020.5.1 Define excellent customer service.
- 1020.5.2 Define the rule of 10.
- 1020.5.3 List the signs of a dissatisfied guest.
- 1020.5.4 Discuss ways to respond and resolve customer complaints.
- 1020.5.5 List and demonstrate the skills of effective written communication.
- 1020.5.6 Define the ABC's of business writing.
- 1020.5.7 Demonstrate proper and courteous telephone skills.
- 1020.5.8 Discuss guidelines for a manager to follow when communicating in customer crisis situations.
- 1020.5.9 Explain how to effectively communicate with the media.
- 1020.5.10 List and discuss good listening skills.
- 1020.5.11 Demonstrate effective speaking skills.
- 1020.5.12 Define non-verbal communication skills.
- 1020.5.13 List and give examples of innovative ways to attract and keep customers.
- 1020.5.14 Demonstrate suggestive selling techniques.

Standard 6: Lodging Operations (1020.S.6)

Students will explain the characteristics, activities, opportunities and types of lodging operations.

Lodging Operations Objectives

Students will:

- 1020.6.1 Define the term "lodging property" and discuss each of the characteristics types of lodging operations.
- 1020.6.2 List and discuss the five key elements that differentiate one lodging establishment from another.
- 1020.6.3 Identify the two national organizations that rate commercial lodging.
- 1020.6.4 Identify ten services offered by some, but not all, lodging properties.
- 1020.6.5 Discuss career opportunities in the lodging industry and the qualifications commonly sought by lodging employers.
- 1020.6.6 Outline the responsibilities of the front desk, housekeeping, front office and engineering departments.
- 1020.6.7 Describe the different types of rates and what makes them different.
- 1020.6.8 Explain how foodservice plays a role in lodging operations.
- 1020.6.9 Create an organizational chart listing all positions and departments of a large lodging

property.

Standard 7: Tourism Industry (1020.S.7)

Students will describe the characteristics, components and opportunities of the tourism industry.

Tourism Industry Objectives

Students will:

- 1020.7.1 Describe the role of travel and tourism in the hospitality industry.
- 1020.7.2 Recognize career opportunities offered in travel and tourism.
- 1020.7.3 Distinguish the segments that make up the travel industry.
- 1020.7.4 Describe the kinds of customer skills required of people who work in the travel industry.

Standard 8: Internship (1020.S.8)

Students will complete a 400 hour, off-campus, paid internship in a foodservice establishment.

Internship Objectives

Students will:

- 1020.8.1 Develop personal qualities and skills necessary for success in the foodservice industry as described in the ProStart workplace competency checklist.
- 1020.8.2 Develop long-term work qualities and skills necessary for success in the foodservice industry as described in the ProStart workplace competency checklist.
- 1020.8.3 Develop short-term observable skills necessary for success in the foodservice industry as described in the ProStart workplace competency checklist.

Basic Control Circuits

WVEIS Code 1601

This course will introduce students to basic electricity fundamentals, including all related math calculations required. Ohm's law, various circuits, reading schematic diagrams, and troubleshooting electrical circuits will be covered.

Standard 1: Troubleshoot, test, and repair or replace electrical components. (1601.S.1)

Troubleshoot, Test, And Repair Or Replace Electrical Components Objectives

Students will:

- 1601.1.1 Troubleshoot electrical faults on series and parallel circuit and calculate unknown values.**
- 1601.1.2 Measure resistance of open and hermetic motor windings.**
- 1601.1.3 Test and replace split phase motors (PSC, RSIR, CSCR, CSIR, and Shaded Pole).**
- 1601.1.4 Test and install motor starting relays (Current, hot wire, potential, solid state).**
- 1601.1.5 Test and replace capacitor (start and run).**
- 1601.1.6 Test and replace contactors, switching relays, overload protectors, transformers and resistance heaters.**
- 1601.1.7 Inspect, replace and repair switches, male and female plugs.**
- 1601.1.8 Identify types of thermostats, test, install and adjust heat anticipators.**

Domestic Refrigeration

WVEIS Code 1603

This course covers testing, analyzing, and repair of domestic refrigeration systems (refrigerators, air conditioners, central air conditioning, and dehumidifiers).

Standard 1: Demonstrate testing & service skills for domestic refrigeration systems. (1603.S.1)

Demonstrate Testing & Service Skills For Domestic Refrigeration Systems Objectives

Students will:

- 1603.1.1 Label all components (electrical and mechanical) on domestic refrigeration systems.**
- 1603.1.2 Test and replace all components (electrical and mechanical) of domestic refrigeration systems.**
- 1603.1.3 Test and record temperature, relative humidity and pressure controls.**

Fundamentals of Air Conditioning/Refrigeration WVEIS Code 1605

This course will introduce students to the air conditioning, and refrigeration field. Students will become familiar with the skills needed in basic compression refrigeration.

Standard 1: Identify, explore, and evaluate career opportunities related to air conditioning and refrigeration. (1605.S.1)

Career Opportunities Related to Air Conditioning and Refrigeration Objectives

Students will:

- 1605.1.1 Describe a variety of careers related to air conditioning and refrigeration, and the training necessary to be successful in those careers.
- 1605.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of air conditioning and refrigeration.
- 1605.1.3 Identify sources of information about careers in air conditioning and refrigeration.

Standard 2: Demonstrate knowledge of basic safety rules and equipment as it relates to air conditioning and refrigeration. (1605.S.2)

Basic Safety Rules and Equipment Objectives

Students will:

- 1605.2.1 Recognize and follow general shop safety guidelines.
- 1605.2.2 Select and wear appropriate protective equipment.
- 1605.2.3 Demonstrate the proper selection and use of fire extinguishers.
- 1605.2.4 Identify and demonstrate proper use and care of all basic personal safety equipment.
- 1605.2.5 Describe safety precautions necessary when using hazardous materials.

Standard 3: Perform fabrication operations with copper, brass and steel tubing. (1605.S.3)

Fabrication Operations with Copper, Brass and Steel Tubing Objectives

Students will:

- 1605.3.1 Differentiate between hard and soft copper tubing.
- 1605.3.2 Construct a flare joint, a swage joint, and bend copper tubing to specific angles.
- 1605.3.3 Set up an oxyacetylene welding station, light and adjust the torch.
- 1605.3.4 Solder brass and copper fittings to copper tubing.
- 1605.3.5 Silver braze steel and copper tubing.
- 1605.3.6 Measure, cut and repair capillary tube.

Standard 4: Demonstrate knowledge and skills needed in compression refrigeration. (1605.S.4)

Knowledge and Skills Needed In Compression Refrigeration Objectives

Students will:

- 1605.4.1 Locate and label components of compression refrigeration system.
- 1605.4.2 Identify effect of CFC on ozone atmosphere.
- 1605.4.3 Install access fittings on a hermetic sealed system.
- 1605.4.4 Recover refrigerant, locate and repair, pressurize and leak test, evacuate, and recharge with vapor and liquid.
- 1605.4.5 Install manifold gauges on refrigeration systems and use a P/T chart to test compressor operation.

- 1605.4.6 Replace filter driers using flare fittings and sweat fittings, then triple evacuate to eliminate any moisture.
- 1605.4.7 Convert temperature to pressure.

Heating Systems

WVEIS Code 1607

This course will introduce students to the basic operational theory of furnaces (gas, oil, electric, and heat pumps). Students will perform various testing and adjusting of components and circuits.

Standard 1: Demonstrate knowledge and skill needed to test, service, install and repair heating systems. (1607.S.1)

Demonstrate Knowledge And Skill Needed To Test, Service, Install And Repair Heating Systems Objectives

Students will:

- 1607.1.1 Test and replace all electrical and mechanical components and safety devices of heating systems.
- 1607.1.2 Leak test and adjust pressures of fossil fuel heating systems.
- 1607.1.3 Measure and adjust temperature rise of heating systems.
- 1607.1.4 Test and adjust combustion efficiency of fossil fuel heating systems.
- 1607.1.5 Check and install electric base board heating systems.
- 1607.1.6 Convert watts to B.T.U.'s, Celsius to Fahrenheit.
- 1607.1.7 Compare electric heat and heat pumps to fossil fuel heating systems.
- 1607.1.8 Light and adjust pilot light flame.
- 1607.1.9 Identify installing considerations of heating systems (up flow, down flow, and horizontal).
- 1607.1.10 Install fuel lines and filters for gas and oil furnaces (black pipe and copper tubing).
- 1607.1.11 Compute heat loss and heat gain, design duct system from blueprint information and measure airflow through duct system.

Applications for Network and Hardware

WVEIS Code 1611

This course will introduce students to the layers of the OSI model, describe the features and functions of network components and provide the skills needed to install, configure and troubleshoot basic networking hardware peripherals and protocols.

Standard 1: Media and Topologies (1611.S.1)

The students will identify and define media and topologies.

Media and Topologies Objectives

The students will:

- 1611.1.1 Recognize logical or physical network topologies given a schematic diagram or description.
- 1611.1.2 Specify the main features of 802.2 (LLC), 802.3 (Ethernet), 802.5 (token ring), 802.11b (wireless) and FDDI networking technologies.
- 1611.1.3 Specify the characteristics of EIA/TIA Cabling Standards.
- 1611.1.4 Recognize and describe the use of various media connectors.
- 1611.1.5 Choose the appropriate media type and connectors to add a client to an existing network.
- 1611.1.6 Identify the purpose, features and functions of Hubs, Switches, Bridges, Routers, Gateways, CSU/DSU, Network Interface Cards/ISDN adapters/systems area network cards, Wireless access points and Modems.

Standard 2: Protocols and Standards (1611.S.2)

The students will identify and define protocols and standards.

Protocols and Standards Objectives

The students will:

- 1611.2.1 Given an example, identify a MAC address.
- 1611.2.2 Identify the seven layers of the OSI model and their functions.
- 1611.2.3 Differentiate between various network protocols in terms of routing, addressing schemes, interoperability and naming conventions.
- 1611.2.4 Identify the OSI layers at which Hubs, Switches, Bridges, Routers and Network Interface Cards operate.
- 1611.2.5 Define the purpose, function and/or use of protocols within TCP/IP.
- 1611.2.6 Define the function of TCP/UDP ports, and identify well-known ports.
- 1611.2.7 Identify the purpose of DHCP/bootp, DNS, NAT/ICS, WINS and SNMP.
- 1611.2.8 Identify IP addresses (Ipv4, Ipv6) and their default subnet masks.
- 1611.2.9 Identify the purpose of subnetting and default gateways.
- 1611.2.10 Identify the differences between public vs. private networks.
- 1611.2.11 Identify the basic characteristics of various WAN technologies.
- 1611.2.12 Define the function of remote access protocols and services.
- 1611.2.13 Identify security protocols and describe their purpose and function.

Standard 3: Network Implementation (1611.S.3)

The students will demonstrate network implementation.

Network Implementation Objectives

The students will:

- 1611.3.1 Identify the basic capabilities of various server operating systems.
- 1611.3.2 Identify the basic capabilities of client workstations.
- 1611.3.3 Identify the main characteristics of VLANs.
- 1611.3.4 Identify the main characteristics of network attached storage.
- 1611.3.5 Identify the purpose and characteristics of fault tolerance.
- 1611.3.6 Identify the purpose and characteristics of disaster recovery.

- 1611.3.7 Given a remote connectivity scenario, configure the connection.
- 1611.3.8 Identify the purpose, benefits and characteristics of using a firewall.
- 1611.3.9 Identify the purpose, benefits and characteristics of using a proxy.
- 1611.3.10 Given a scenario, predict the impact of a particular security implementation on network functionality.
- 1611.3.11 Given a network configuration, select the appropriate NIC and network configuration settings.

Standard 4: Network Support (1611.S.4)

The students will demonstrate proper network support.

Network Support Objectives

The students will:

- 1611.4.1 Given a troubleshooting scenario, select the appropriate TCP/IP utility.
- 1611.4.2 Given a troubleshooting scenario involving a small office/home office network failure, identify the cause of the failure.
- 1611.4.3 Given a troubleshooting scenario involving a remote connectivity problem, identify the cause of the problem.
- 1611.4.4 Given specific parameters, configure a client to connect to various servers.
- 1611.4.5 Given a wiring task, select the appropriate tool.
- 1611.4.6 Given a network scenario, interpret visual indicators to determine the nature of the problem.
- 1611.4.7 Given output from a diagnostic utility, identify the utility and interpret the output.
- 1611.4.8 Given a scenario, predict the impact of modifying, adding, or removing network services on network resources and users.
- 1611.4.9 Given a network problem scenario, select an appropriate course of action based on a general troubleshooting strategy.
- 1611.4.10 Given a troubleshooting scenario involving a network with a particular physical topology and including a network diagram, identify the network area effected and the cause of the problem.
- 1611.4.11 Given a network-troubleshooting scenario involving a client connectivity problem, identify the cause of the problem.
- 1611.4.12 Given a network-troubleshooting scenario involving a wiring/infrastructure problem, identify the cause of the problem.

Basic System Operation and Application

WVEIS Code 1613

This course will provide the knowledge and skills to identify, install, configure and upgrade computer operating systems, safety and preventive maintenance procedures. Also included will be specific terminology, categories and principles of computer operating systems and diagnosing and troubleshooting common operating system malfunctions.

Standard 1: Operating System Basics (1613.S.1)

The students will identify operating system basics.

Operating System Basics Objectives

The students will:

- 1613.1.1 Identify the operating system's functions, structures and major system files.
- 1613.1.2 Identify ways to navigate the operating system and how to get to needed technical education.
- 1613.1.3 Identify basic concepts and procedures for creating, viewing and managing files and directories, including procedures for changing file attributes and the ramification of those changes.
- 1613.1.4 Identify the procedures for basic disk management.

Standard 2: Installing, Configuring and Upgrading (1613.S.2)

The students will identify the procedures for installing, configuring and upgrading.

Installing, Configuring and Upgrading Objectives

The students will:

- 1613.2.1 Identify the procedures for installing the operating system and bringing the software to a basic operational level.
- 1613.2.2 Identify the steps to perform an operating system upgrade.
- 1613.2.3 Identify the basic system boot sequences and alternative ways to boot the system software, including the steps to create an emergency boot disk with utilities installed.
- 1613.2.4 Identify procedures for changing options, configuring, and using the operating system's printing subsystem.
- 1613.2.5 Identify the procedures for changing options, configuring and using the operating system's printing subsystem.
- 1613.2.6 Identify the procedures for installing and launching typical software applications.

Standard 3: Diagnosing and Troubleshooting (1613.S.3)

The students will recognize, interpret and identify codes, messages and concepts of operating systems.

Diagnosing and Troubleshooting Objectives

The students will:

- 1613.3.1 Recognize and interpret the meaning of common error codes and startup messages from the boot sequence, and identify steps to correct the problems.
- 1613.3.2 Recognize specific printing problems and identify the procedures for correcting them.
- 1613.3.3 Recognize common operating system problems and determine how to resolve them.
- 1613.3.4 Identify concepts relating to viruses and virus types, why they are dangerous, their symptoms, sources of viruses, how they infect, how to protect against them and how to identify and remove them.

Standard 4: Network (1613.S.4)

The students will identify the basic components and operation of computer networks.

Network Objectives

The students will:

- 1613.4.1 Identify the networking capabilities of the operating system, including procedures for connecting to the network.
- 1613.4.2 Identify concepts and capabilities relating to the Internet and basic procedures for setting up a system for Internet access.

Computer Construction

WVEIS Code 1615

This course will provide the knowledge and skills to identify install, configure and upgrade microcomputer modeling and peripherals, safety and preventive maintenance procedures. Also included will be specific terminology, categories and principles of motherboard, procedures and memory in microcomputer systems. Diagnosing and troubleshooting common model and system malfunctions and networking concepts will be included.

Standard 1: Installation, Configuration and Upgrading (1615.S.1)

Students will demonstrate installation, configuration and upgrading of computer systems.

Installation, Configuration and Upgrading Objectives

The students will:

- 1615.1.1 Identify basic terms, concepts and functions of system modules, including how each module should work during normal operation and during the boot process.
- 1615.1.2 Identify basic procedures for adding and removing field replaceable modules for both desktop and portable systems.
- 1615.1.3 Identify available IRQ's, DMA's and I/O addresses and procedures for device installation and configuration.
- 1615.1.4 Identify common peripheral ports associated cabling and their connectors.
- 1615.1.5 Identify proper procedures for installing and configuring IDE/E"IDE devices.
- 1615.1.6 Identify proper procedures for installing and configuring SCSI devices.
- 1615.1.7 Identify proper procedures for installing and configuring peripheral devices.
- 1615.1.8 Identify hardware methods of upgrading system performance, procedures for replacing basic subsystem components, unique components and when to use them.

Standard 2: Diagnosing and Troubleshooting (1615.S.2)

Students will be able to demonstrate appropriate diagnosing and troubleshoot techniques.

Diagnosing and Troubleshooting Objectives

The students will:

- 1615.2.1 Identify common symptoms and problems associated with each module and how to troubleshoot and isolate the problems.
- 1615.2.2 Identify basic troubleshooting procedures and how to elicit problem symptoms from customers.

Standard 3: Preventive Maintenance (1615.S.3)

Students will be able to do appropriate preventive maintenance on computer systems.

Preventive Maintenance Objectives

The students will:

- 1615.3.1 Identify the purpose of various types of preventive maintenance procedures and when to use them.
- 1615.3.2 Identify issues, procedures and devices for protection within the computing environment, including people, hardware and the surrounding workplace.

Standard 4: Motherboard/Processors/Memory (1615.S.4)

Students will be able to identify various motherboard, processors and memory components.

Motherboard/Processors/Memory Objectives

The students will:

- 1615.4.1 Distinguish between the popular CPU chips in their basic characteristics.
- 1615.4.2 Identify the categories of RAM (Random Access Memory) terminology, their location and physical characteristics.
- 1615.4.3 Identify the most popular type of motherboards, their components and their architecture (bus structures and power supplies).

Standard 5: Printers (1615.S.5)

Students will be able to identify various printer concepts, components and troubleshoot problems.

Printers Objectives

The students will:

- 1615.5.1 Identify basic concepts, printer operations and printer components.
- 1615.5.2 Identify care and service techniques and common problems with primary printer types.

Standard 6: Basic Networking (1615.S.6)

Students will be able to identify basic network concepts.

Basic Networking Objectives

The students will:

- 1615.6.1 Identify basic networking concepts, including how a network works and the ramifications of repairs on the network.

Server and Network Operations

WVEIS Code 1617

This course will introduce students to network operating systems, security models, administrative responsibilities, and the network operating systems troubleshooting.

Standard 1: Network Operating Systems (1617.S.1)

The students will identify and install network operating systems.

Network Operating Systems Objectives

The students will:

- 1617.1.1 Identify various NOSs.
- 1617.1.2 Compare NOSs with other operating systems.
- 1617.1.3 Plan NOS installation based on hardware, software and network requirements.
- 1617.1.4 Install a NOS.
- 1617.1.5 Identify administrative, server and diagnostic tools.

Standard 2: NOSs Configuration and Administration (1617.S.2)

The students will configure and administrate NOSs.

NOSs Configuration and Administration Objectives

The students will:

- 1617.2.1 Define security in terms of a NOS.
- 1617.2.2 Administrate user accounts, group accounts, file permissions and system policies.
- 1617.2.3 Update NOS with optional updates.

Standard 3: NOSs Troubleshooting (1617.S.3)

The students will troubleshoot NOSs.

NOSs Troubleshooting Objectives

The students will:

- 1617.3.1 Perform problem determination.
- 1617.3.2 Use diagnostic hardware and software tools and utilities to troubleshoot NOSs.
- 1617.3.3 Identify and correct misconfigurations.

Alternative Fuels

WVEIS Code 1621

This course will introduce students to basic electrical and automotive fundamentals related an electric vehicle including the math calculations required.

Standard 1: Demonstrate electrical safety. (1621.S.1)

Electrical Safety Objectives

Students will:

- 1621.1.1 Describe the effect of current on the human body.
- 1621.1.2 List general safety precautions when working with electricity.
- 1621.1.3 Identify various types of safety devices used with electricity.
- 1621.1.4 Describe typical electrical shock hazards in industry, and explain what to do for victims of electrical shock.
- 1621.1.5 List and describe the safe use of basic hand and power tools used in the field of electricity.
- 1621.1.6 List and explain personal and electrical safety rules applicable to rotating equipment.

Standard 2: Interpret blueprints, schematics and technical orders. (1621.S.2)

Blueprints, Schematics and Technical Orders Objectives

Students will:

- 1621.2.1 Demonstrate knowledge of blueprint reading.
- 1621.2.2 Demonstrate knowledge of schematic reading.
- 1621.2.3 Draw a block diagram of a motor control system.
- 1621.2.4 Demonstrate knowledge of elementary wiring diagrams and ladder logic.
- 1621.2.5 Install motor control centers and systems, using wiring diagrams.
- 1621.2.6 List and identify motor and motor control symbols.

Standard 3: Apply electrical math concepts. (1621.S.3)

Electrical Math Concepts Objective

Students will:

- 1621.3.1 Demonstrate knowledge of Ohm's law and power formulas.

Standard 4: Demonstrate the proper use and care of electrical meters. (1621.S.4)

Electrical Meters Objective

Students will:

- 1621.4.1 Demonstrate the use and care of an ammeter, ohmmeter, and voltmeter.

Standard 5: Construct and analyze basic circuits. (1621.S.5)

Basic Circuits Objectives

Students will:

- 1621.5.1 Describe the electrical classification of conductors, insulators, and semi-conductors.
- 1621.5.2 Describe electrical current and differentiate between the different kinds of current.
- 1621.5.3 Define voltage, current, resistance, and power.
- 1621.5.4 List, and schematically represent the components that make up a basic electrical circuit.
- 1621.5.5 Connect batteries into various series and parallel arrangements and measure and record

- voltage readings across each configuration.
- 1621.5.6 Conduct experiments that demonstrate the production of an electromotive force obtaining voltage readings from experiments.
 - 1621.5.7 Construct, solve and troubleshoot series, parallel and complex circuits.
 - 1621.5.8 Perform various battery tests, including: state-of-charge test, capacity (load, high-rate discharge) test, and three (3) minute charge test, and determine needed service.
 - 1621.5.9 Inspect, clean, fill, or replace battery, battery cables, connectors and clamps.
 - 1621.5.10 Slow and fast charge conventional and maintenance free batteries.

Standard 6: Perform basic soldering techniques. (1621.S.6)

Basic Soldering Techniques Objectives

Students will:

- 1621.6.1 Demonstrate proper use and care for soldering tools and equipment.
- 1621.6.2 Demonstrate correct stripping, tinning, and soldering procedures.
- 1621.6.3 Identify characteristics of a good solder connection.

Standard 7: Demonstrate skills applicable to pilot devices. (1621.S.7)

Skills Applicable to Pilot Devices Objectives

Students will:

- 1621.7.1 Explain purpose and uses of pilot devices.
- 1621.7.2 Explain and list various types of electronic and mechanical sensors and pilot devices.
- 1621.7.3 Install and troubleshoot various pilot devices and their circuits.

Standard 8: Demonstrate skills related to motor controls. (1621.S.8)

Skills Related to Motor Controls Objectives

Students will:

- 1621.8.1 Explain the difference between manual and automatic circuits.
- 1621.8.2 List the equipment and parts needed for automatic circuits.
- 1621.8.3 Identify basic motor control circuits.
- 1621.8.4 Connect basic AC and DC circuits for automatic and manual control.
- 1621.8.5 Explain and demonstrate basic troubleshooting of control circuits.
- 1621.8.6 Install reversing circuits.
- 1621.8.7 Demonstrate the use of a phase rotation meter.

Standard 9: Apply skills to relays. (1621.S.9)

Apply Skills to Relays Objectives

Students will:

- 1621.9.1 Describe and explain relays and relay circuits.
- 1621.9.2 Identify and install overload relays in control circuits.
- 1621.9.3 Identify and install potential-type relays in control circuits.
- 1621.9.4 Explain the difference between relay and magnetic starters.
- 1621.9.5 Explain troubleshooting techniques of relay and magnetic starters.
- 1621.9.6 Check various relays for faults or defects.
- 1621.9.7 Explain, check, and adjust various types of time delay relays.

Standard 10: Differentiate between the different types of motor braking circuits. (1621.S.10)

Motor Braking Circuits Objectives

Students will:

- 1621.10.1 Explain the various types of braking circuits for AC and DC motors.
- 1621.10.2 Describe dynamic braking circuits for AC and DC motors.

Standard 11: Troubleshoot AC and DC motors. (1621.S.11)

AC and DC Motors Objectives

Students will:

- 1621.11.1 Describe the various types of single-phase and three-phase AC motors and DC motors.
- 1621.11.2 Install, check, and troubleshoot various types of DC motors in a circuit.

Standard 12: Apply calculations to assure that NEC standards are met. (1621.S.12)

NEC Standards Objectives

Students will:

- 1621.12.1 Calculate conductor size and ampacity, overcurrent protection, grounding, bonding, and grounded conductor size.

Standard 13: Demonstrate automotive general electrical system diagnosis. (1621.S.13)

Automotive General Electrical System Diagnosis Objectives

Students will:

- 1621.13.1 Identify automotive electrical symbols.
- 1621.13.2 Check continuity in electrical circuits with a test light.
- 1621.13.3 Check applied voltages and voltage drops in electrical circuits with analog and digital voltmeters.
- 1621.13.4 Check current flow in electrical circuits and components with an ohmmeter.
- 1621.13.5 Check continuity and resistance in electrical circuits and components with analog and digital ohmmeters.
- 1621.13.6 Find shorts and grounds in electrical circuits.
- 1621.13.7 Diagnose the cause(s) of a constant battery drain.
- 1621.13.8 Inspect, test, and replace fusible links, circuit breakers, and fuses.

Standard 14: Perform hydraulic system diagnosis and repair. (1621.S.14)

Hydraulic System Diagnosis and Repair Objectives

Students will:

- 1621.14.1 Check master cylinder for internal and external leaks and proper operation, determine needed repairs.
- 1621.14.2 Diagnose poor stopping, pulling or dragging caused by problems in the hydraulic system, determine needed repairs.
- 1621.14.3 Inspect brake lines and fittings for leaks, dents, kinks, rust, cracks or wear; tighten loose fittings and supports.
- 1621.14.4 Fabricate and install brake lines (double flare and ISO types); replace hoses, fittings, and supports as needed.
- 1621.14.5 Inspect, test, and replace components of brake warning light system.

Standard 15: Demonstrate drum brake diagnosis and repair. (1621.S.15)

Drum Brake Diagnosis and Repair Objectives

Students will:

- 1621.15.1 Diagnose poor stopping, noise, pulling, grabbing, dragging or pedal pulsation problems, determine needed repairs.
- 1621.15.2 Remove, clean, and inspect brake drums, shoes, springs, pins, clips, levers, adjusters/self-adjusters, and backing support plates, service, lubricate and reassemble.
- 1621.15.3 Pre-adjust brake shoes and parking brake before installing brake drums or drum and hub assemblies, and wheel bearings.

Standard 16: Demonstrate disc brake diagnosis and repair. (1621.S.16)

Disc Brake Diagnosis and Repair Objectives

Students will:

- 1621.16.1 Diagnose poor stopping, noise, pulling, grabbing, dragging, or pedal pulsation caused problems, determine needed repairs.
- 1621.16.2 Remove caliper assembly and brake pads from mountings; clean and inspect for leaks and damage to caliper housing. Inspect parts for wear, rust, scoring, and damage; replace seal, boot or worn parts. Clean and inspect caliper mounting and slides for wear and damage.
- 1621.16.3 Clean, inspect, and measure rotor with a dial indicator and a micrometer; follow manufacturer's recommendations in determining need to machine or replace.
- 1621.16.4 Reinstall wheel, torque lug nuts, and make final checks and adjustments.

Standard 17: Perform diagnosis and repair of miscellaneous items. (1621.S.17)

Diagnosis and Repair of Miscellaneous Items Objectives

Students will:

- 1621.17.1 Diagnose wheel bearing noises, wheel shimmy, and vibration problems; determine needed repairs.
- 1621.17.2 Remove, clean, inspect, re-pack, and reinstall wheel bearings, replace seals, reinstall hub, adjust wheel bearings. Replace bearing and race as needed.
- 1621.17.3 Check parking brake operation, cables and components for wear, rusting, binding, corrosion and clean, lubricate and replace as needed.
- 1621.17.4 Check operation of brake stop light system; adjust and service as needed.

Standard 18: Perform diagnosis and adjust wheel alignment. (1621.S.18)

Diagnosis and Adjust Wheel Alignment Objectives

Students will:

- 1621.18.1 Check and adjust front and rear wheel camber, caster, toe, SAI (steering axis inclination) and determine needed repairs.
- 1621.18.2 Check rear wheel thrust angle; determine needed repairs.
- 1621.18.3 Check for front wheel setback; determine needed repairs.
- 1621.18.4 Check front cradle (sub-frame) alignment; determine needed repairs.

Standard 19: Perform diagnosis and repair of wheels and tires. (1621.S.19)

Diagnosis and Repair of Wheels and Tires Objectives

Students will:

- 1621.19.1 Inspect tires; check and adjust air pressure. Diagnose tire wear patterns and determine

- needed repairs. Rotate tires according to manufacturer's recommendations.
- 1621.19.2 Measure wheel, tire, axle, and hub run-out; determine needed repairs.
- 1621.19.3 Dismount, inspect, repair, and remount tire on wheel. Balance wheel and tire assembly (static and dynamic). Reinstall wheel; torque lug nuts.

Standard 20: Perform clutch diagnosis and repair. (1621.S.20)

Clutch Diagnosis and Repair Objectives

Students will:

- 1621.20.1 Diagnose clutch noise, binding, slippage, pulsation, and chatter problems; determine needed repairs.
- 1621.20.2 Inspect, adjust or replace clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings, pivots, springs, hydraulic clutch slave and master cylinders, lines, and hoses.
- 1621.20.3 Inspect, adjust or replace release (throw-out) bearing, lever and pivot, crankshaft pilot bearing or bushing (as applicable), clutch pressure plate assembly and clutch disc.
- 1621.20.4 Inspect, repair, and service or replace flywheel and ring gear. Measure flywheel-to-block run out and crankshaft end play; determine needed repairs.
- 1621.20.5 Inspect engine block, clutch (bell) housing, and transmission case mating surfaces; measure clutch (bell) housing bore-to-crankshaft run out and face squareness; determine needed repairs.

Standard 21: Troubleshoot and repair lighting systems. (1621.S.21)

Repair Lighting Systems Objectives

Students will:

- 1621.21.1 Diagnose brighter than normal, intermittent, dim or no light operation.
- 1621.21.2 Inspect, replace, and aim headlights and bulbs.
- 1621.21.3 Inspect and diagnose incorrect turn signal or hazard light operations; repair or replace as needed.

Standard 22: Perform diagnosis and repair of driver information systems. (1621.S.22)

Driver Information Systems Objectives

Students will:

- 1621.22.1 Diagnose intermittent, high, low, no gauge readings, or no readings on electronic instrument clusters, test sensors, sending units, connectors, and wires of electronic instrument circuits.
- 1621.22.2 Test gauge circuit voltage regulators (limiters); replace as needed.
- 1621.22.3 Inspect and test gauges and gauge sending units, connectors, wires, and printed circuit boards of gauge circuits; repair or replace as needed.
- 1621.22.4 Diagnose incorrect operation of warning devices and other driver information systems.

Standard 23: Perform accessories diagnosis and repair. (1621.S.23)

Accessories Diagnosis and Repair Objectives

Students will:

- 1621.23.1 Diagnose incorrect wiper operation; diagnose wiper speed control and park problems; repair as needed.
- 1621.23.2 Diagnose incorrect operation of motor-driven accessory circuits, heated glass operation, electric door and hatch/trunk lock operation and cruise control systems.
- 1621.23.3 Diagnose supplemental restraint system (SRS) problems; repair as needed. (Note: Follow manufacturer's safety procedures to prevent accidental deployment.)

1621.23.4 Diagnose radio static and weak, intermittent, or no radio reception.

Basic Engine Concepts

WVEIS Code 1623

This course will introduce students to basic engine concepts, skills, technology and service of the automobile.

Standard 1: Perform general engine diagnosis, removal and reinstallations (R&R). (1623.S.1)

General Engine Diagnosis, Removal and Reinstallations (R&R) Objectives

Students will:

- 1623.1.1 Interpret and verify complaint; listen to engine noises; inspect engine assembly for fuel, oil, coolant, and other leaks; determine needed repairs.
- 1623.1.2 Diagnose the cause of excessive oil consumption, unusual engine exhaust color, odor, and sound; determine needed repairs.
- 1623.1.3 Perform engine vacuum tests; determine needed repairs.
- 1623.1.4 Perform cylinder power balance tests; cylinder compression tests; cylinder leakage tests; determine needed repairs.
- 1623.1.5 Remove engine (front-wheel drive); prepare for disassembly; reinstall engine.

Standard 2: Demonstrate cylinder head and valve train diagnosis and repair. (1623..S.2)

Cylinder Head and Valve Train Diagnosis and Repair Objectives

Students will:

- 1623.2.1 Remove cylinder head(s); inspect cylinder head(s) for cracks; check gasket surface areas for warpage and leakage; check passage condition.
- 1623.2.2 Install cylinder heads and gaskets; tighten according to manufacturer's specifications and procedures.
- 1623.2.3 Inspect and test valve springs for squareness, pressure, and free height comparison; inspect valve spring retainers, locks, and valve grooves; replace as needed. Replace valve stem seals.
- 1623.2.4 Inspect valve guides for wear; check valve guide height and stem-to-guide clearance; inspect valves; inspect valve seats; recondition or replace as needed.
- 1623.2.5 Check valve face-to-seat contact and valve seat concentricity (run out), service seats and valves as needed.
- 1623.2.6 Check valve spring assembled height and valve stem height; service valve and spring assemblies as needed.
- 1623.2.7 Inspect pushrods, rocker arms, rocker arm pivots and shaft for wear, bending, cracks, looseness, and blocked oil passages (orifices); repair or replace.
- 1623.2.8 Inspect hydraulic or mechanical lifters; replace as needed. Adjust valves (mechanical or hydraulic lifters).
- 1623.2.9 Inspect and replace camshaft drives (including gear wear and backlash, sprocket and chain wear, overhead cam drive sprockets, drive belts, belt tension, and tensioners).
- 1623.2.10 Inspect camshaft for run out, measure journals and lobes for wear.
- 1623.2.11 Inspect and measure camshaft bearings for wear, damage, out-of-round, and alignment; determine needed repairs.
- 1623.2.12 Verify camshaft(s) timing according to manufacturer's specifications and procedure.

Standard 3: Perform engine block diagnosis and repair. (1623.S.3)

Engine Block Diagnosis and Repair Objectives

Students will:

- 1623.3.1 Inspect and replace pans, covers, gaskets, and seals.
- 1623.3.2 Inspect engine block for cracks, passage condition, core and gallery plug condition, and surface warpage; determine needed repairs.
- 1623.3.3 Inspect internal and external threads; repair as needed.
- 1623.3.4 Inspect and measure cylinder walls for damage and wear; determine needed repairs. Remove cylinder wall ridges. Deglaze and clean cylinder walls.
- 1623.3.5 Inspect crankshaft for surface cracks and journal damage; check oil passage condition; measure journal wear; determine needed repairs.
- 1623.3.6 Inspect and measure main and connecting rod bearings for damage, clearance, and end play; determine needed repairs (includes the proper selections of bearings).
- 1623.3.7 Identify piston and bearing wear patterns that indicate connecting rod alignment and main bearing bore problems; inspect rod alignment and bearing bore condition.
- 1623.3.8 Inspect, measure, service or replace pistons. Inspect, measure, and install piston rings.
- 1623.3.9 Inspect, repair or replace crankshaft vibrations damper (harmonic balancer).
- 1623.3.10 Inspect flywheel or flex plate and ring gear for cracks and wear; measure run out and determine needed repairs.
- 1623.3.11 Inspect, remove, and replace crankshaft pilot bearing or bushing (as applicable).
- 1623.3.12 Reassemble engine components using correct gaskets and sealants.
- 1623.3.13 Inspect auxiliary (balance, intermediate, idler, counterbalance or silencer) shaft(s); inspect shaft(s) and support bearings for damage and wear; determine needed repairs; reinstall and time.
- 1623.3.14 Prime engine lubrication system.

Standard 4: Perform lubrication and cooling systems diagnosis and repair. (1623.S.4)

Cooling Systems Diagnosis and Repair Objectives

Students will:

- 1623.4.1 Perform oil pressure tests; inspect oil pump ears or rotors, housing, pressure relief devices, and pump drive; replace as needed.
- 1623.4.2 Perform cooling system tests (pressure, combustion leakage, and temperature) determine needed repairs.
- 1623.4.3 Inspect, replace, and adjust drive belts and pulleys.
- 1623.4.4 Inspect and replace engine cooling and heater system hoses.
- 1623.4.5 Inspect, test, and replace thermostat and housing.
- 1623.4.6 Inspect coolant; drain, flush, and refill cooling system with recommended coolant and bleed air as required.
- 1623.4.7 Inspect, test, remove, and replace water pump.
- 1623.4.8 Inspect and test radiator, pressure cap, and coolant recovery system; remove and replace radiator.
- 1623.4.9 Clean, inspect, and test fan(s) (electrical or mechanical), inspect and test electrical fan control system and circuits, fan clutch, fan shroud and air dams.
- 1623.4.10 Inspect, test, and replace oil temperature and pressure switches and sensors. Inspect auxiliary oil coolers; replace as needed.
- 1623.4.11 Perform oil and filter change.

Brakes

WVEIS Code 1625

This course will introduce students to the basic fundamental skills, technology, and service of automotive brake systems. Students will comply with personal and environmental safety practices associated with proper ventilation, handling, storage, and disposal of brake components.

Standard 1: Perform hydraulic system diagnosis and repair. (1625.S.1)

Hydraulic System Diagnosis and Repair Objectives

Students will:

- 1625.1.1 Check master cylinder for internal and external leaks and proper operation; determine needed repairs.
- 1625.1.2 Remove, bench bleed, and replace master cylinders.
- 1625.1.3 Diagnose poor stopping, pulling or dragging caused by problems in the hydraulic system; determine needed repairs.
- 1625.1.4 Inspect brake lines and fittings for leaks, dents, kinks, rust, cracks or wear; tighten loose fittings and supports.
- 1625.1.5 Fabricate and install brake lines (double flare and ISO types); replace hoses, fittings, and supports as needed.
- 1625.1.6 Select, handle, store, and install brake fluids to proper level. Bleed (manual, pressure, vacuum or surge) brake system; flush hydraulic system.
- 1625.1.7 Inspect, test, and replace metering (hold-off), proportioning (balance), pressure differential, and combinations valves.
- 1625.1.8 Inspect, test, replace and adjust height (load) sensing proportioning valve.
- 1625.1.9 Inspect, test, and replace components of brake warning light system.

Standard 2: Demonstrate drum brake diagnosis and repair. (1625.S.2)

Drum Brake Diagnosis and Repair Objectives

Students will:

- 1625.2.1 Diagnose poor stopping, noise, pulling, grabbing, dragging or pedal pulsation problems; determine needed repairs.
- 1625.2.1 Remove, clean (using proper safety procedures), inspect, and measure brake drums. Service (mount brake drum on lathe and machine) or replace as needed.
- 1625.2.3 Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, and backing support plates; lubricate/reassemble.
- 1625.2.4 Remove and reinstall wheel cylinders.
- 1625.2.5 Pre-adjust brake shoes and parking brake before installing brake drums or drum/hub assemblies and wheel bearings.

Standard 3: Demonstrate disc brake diagnosis and repair. (1625.S.3)

Disc Brake Diagnosis and Repair Objectives

Students will:

- 1625.3.1 Diagnose poor stopping, noise, pulling, grabbing, dragging, or pedal pulsation caused problems; determine needed repairs.
- 1625.3.2 Remove caliper assembly from mountings; clean and inspect for leaks and damage to caliper housing. Inspect parts for wear, rust, scoring, and damage; replace seal, boot or worn parts. Clean and inspect caliper mounting and slides for wear and damage.

- 1625.3.3 Remove, clean, and inspect pads and retaining hardware; determine needed service. Reassemble, lubricate, and reinstall caliper, pads, and related hardware.
- 1625.3.4 Clean, inspect, and measure rotor with a dial indicator and a micrometer; follow manufacturer's recommendations in determining need to machine or replace.
- 1625.3.5 Adjust calipers with integrated parking brake system. Fill master cylinder with recommended fluid and seat pads; inspect caliper for leaks.
- 1625.3.6 Reinstall wheel, torque lug nuts, and make final checks and adjustments.

Standard 4: Perform diagnosis and repair of power assist units. (1625.S.4)

Power Assist Units Objectives

Students will:

- 1625.4.1 Test pedal free travel with and without engine running; check power assist operation.
- 1625.4.2 Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster.
- 1625.4.3 Inspect the vacuum-type power booster unit for vacuum leaks; inspect the check valve for proper operation; repair or replace parts as needed.

Standard 5: Perform diagnosis and repair of miscellaneous items. (1625.S.5)

Diagnosis and Repair of Miscellaneous Items Objectives

Students will:

- 1625.5.1 Diagnose wheel bearing noises, wheel shimmy, and vibration problems; determine needed repairs.
- 1625.5.2 Remove, clean, inspect, re-pack, and reinstall wheel bearings and replace seals; reinstall hub and adjust wheel bearings. Replace wheel bearing and race as needed.
- 1625.5.3 Check parking brake cables and components for wear, rusting, binding, corrosion and clean, lubricate and replace as needed.
- 1625.5.4 Check parking brake operation; adjust as needed. Check operation of parking brake indicator light system.
- 1625.5.5 Check operation of brake stop light system; adjust and service as needed.

Standard 6: Perform diagnosis and repair of an anti-lock brake system. (1625.S.6)

Anti-Lock Brake System Objectives

Students will:

- 1625.6.1 Inspect, test, and service anti-lock brake system (ABS) hydraulic, electrical, and mechanical components. Observe anti-lock brakes system (ABS) warning light(s) at startup; determine if further diagnosis is needed.
- 1625.6.2 Diagnose poor stopping, wheel lock-up, abnormal pedal feel or pulsation, and noise problems caused by the anti-lock brake system (ABS); determine needed repairs.
- 1625.6.3 Diagnose anti-lock brake system (ABS) electronic control(s) and components using self-diagnosis and/or recommended test equipment; determine needed repairs.
- 1625.6.4 Depressurize high pressure components of the anti-lock brake system (ABS) following manufacturer's recommended safety procedures.
- 1625.6.5 Fill and bleed the anti-lock brake system's (ABS) front and rear hydraulic circuits and master cylinder with recommended fluid following manufacturer's procedures; inspect system for leaks.
- 1625.6.6 Perform a fluid pressure (hydraulic boost) diagnosis on the high pressure anti-lock brake system (ABS); determine needed repairs.
- 1625.6.7 Remove and install anti-lock brake system (ABS) electrical/electronic and hydraulic components following manufacturer's procedures and specifications.
- 1625.6.8 Service, test, and adjust anti-lock brake system (ABS) speed sensors following manufacturer's

- recommended procedures
- 1625.6.9 Diagnose anti-lock brake system (ABS) braking problems caused by vehicle modifications (tire size, curb height, final drive ratio, etc.).

Electrical/Electronic Systems

WVEIS Code 1627

This course will introduce students to the skills, technology, and service of electrical/electronic systems of the automobile.

Standard 1: Demonstrate general electrical system diagnosis. (1627.S.1)

General Electrical System Diagnosis Objectives

Students will:

- 1627.1.1 Use wiring diagrams during diagnosis of electrical circuit problems.
- 1627.1.2 Check electrical circuits with a test light; determine needed repairs.
- 1627.1.3 Check voltage and voltage drop in electrical/electronic circuits using a digital multi meter (DMM) and current flow in electrical/electronic circuits and components using an ammeter.
- 1627.1.4 Check electrical circuits using jumper wires; determine needed repairs.
- 1627.1.5 Find shorts, grounds, opens, and resistance problems in electrical/electronic circuits; determine needed repairs.
- 1627.1.6 Measure and diagnose the cause(s) of abnormal key-off battery drain; repair as needed.
- 1627.1.7 Inspect and test fusible links, circuit breakers, and fuses; replace as needed.
- 1627.1.8 Inspect and test switches, connectors, relays, and wires of electrical/electronic circuits; repair or replace as needed.

Standard 2: Apply battery diagnosis and service. (1627.S.2)

Battery Diagnosis and Service Objectives

Students will:

- 1627.2.1 Perform battery state-of-charge test and perform slow/fast battery charge.
- 1627.2.2 Perform battery capacity (load, high-rate discharge) test and determine needed service.
- 1627.2.3 Maintain or restore electronic memory functions.
- 1627.2.4 Inspect, clean, fill and replace battery, clean battery cables, connectors, clamps, and hold-downs; repair or replace as needed.
- 1627.2.5 Start a vehicle using jumper cables and a battery or auxiliary power supply.

Standard 3: Demonstrate starting system diagnosis and repair. (1627.S.3)

Starting System Diagnosis and Repair Objectives

Students will:

- 1627.3.1 Perform starter current draw and circuit voltage drop test; determine needed repairs.
- 1627.3.2 Inspect and test starter relays and solenoids; replace as needed.
- 1627.3.3 Remove and replace/reinstall starter.
- 1627.3.4 Perform starter bench tests; determine needed repairs.
- 1627.3.5 Inspect, test, and repair or replace switches, connectors, and wires of starter control circuits.
- 1627.3.6 Disassemble, clean, inspect, and test starter components; replace as needed.

Standard 4: Perform charging system diagnosis and repair. (1627.S.4)

Charging System Diagnosis and Repair Objectives

Students will:

- 1627.4.1 Diagnose charging system problems that cause an undercharge, a no-charge or an overcharge condition. Perform charging circuit voltage drop tests.
- 1627.4.2 Inspect and adjust alternator drive belts; replace as needed.

- 1627.4.3 Inspect and test voltage regulator; replace as needed.
- 1627.4.4 Remove, inspect, and replace/reinstall alternator.
- 1627.4.5 Disassemble, clean, inspect, and test alternator components; replace as needed.

Standard 5: Troubleshoot lighting systems, diagnosis and repair. (1627.S.5)

Lighting Systems, Diagnosis and Repair Objectives

Students will:

- 1627.5.1 Diagnose brighter than normal, intermittent, dim or no light operation.
- 1627.5.2 Inspect, replace, and aim headlights and bulbs.
- 1627.5.3 Inspect and diagnose incorrect turn signal or hazard light operations; repair or replace as needed.

Standard 6: Perform diagnosis and repair of driver information systems. (1627.S.6)

Driver Information Systems Objectives

Students will:

- 1627.6.1 Diagnose intermittent, high, low, no gauge readings, or no readings on electronic instrument clusters, test sensors, sending units, connectors, and wires of electronic instrument circuits.
- 1627.6.2 Test gauge circuit voltage regulators (limiters); replace as needed.
- 1627.6.3 Inspect and test gauges and gauge sending units, connectors, wires, and printed circuit boards of gauge circuits; repair or replace as needed.
- 1627.6.4 Diagnose incorrect operation of warning devices and other driver information systems.

Standard 7: Perform diagnosis and repair of horn and wiper/washer. (1627.S.7)

Horn and Wiper/Washer Objectives

Students will:

- 1627.7.1 Diagnose incorrect horn operation; repair as needed.
- 1627.7.2 Diagnose incorrect wiper operation; diagnose wiper speed control and park problems; repair as needed.
- 1627.7.3 Diagnose incorrect windshield washer operation; repair as needed.

Standard 8: Perform accessories diagnosis and repair. (1627.S.8)

Accessories Diagnosis and Repair Objectives

Students will:

- 1627.8.1 Diagnose incorrect operation of motor-driven accessory circuits, heated glass operation, electric door and hatch/trunk lock operation and cruise control systems.
- 1627.8.2 Diagnose supplemental restraint system (SRS) problems; repair as needed. (Note: Follow manufacturer's safety procedures to prevent accidental deployment.
- 1627.8.3 Diagnose radio static and weak, intermittent, or no radio reception.

Engine Performance

WVEIS Code 1629

This course will introduce students to the skills, technology, and service of electrical/electronic systems of the automobile. Students will comply with personal and environmental safety practices associated with proper ventilation and the handling, storage, and disposal of chemicals in accordance with local, state, and federal safety and environmental regulations.

Standard 1: Perform general engine diagnosis. (1629.S.1)

General Engine Diagnosis Objectives

Students will:

- 1629.1.1 Interpret and verify complaint, inspect engine assembly for fuel, oil, coolant, and other leaks.
- 1629.1.2 Diagnose unusual engine noise or vibrations problems, unusual exhaust color, odor or sound.
- 1629.1.3 Perform engine absolute (vacuum/boost) manifold pressure tests; determine needed repairs.
- 1629.1.4 Perform cylinder power balance test, cylinder compression test and cylinder leakage test.
- 1629.1.5 Diagnose engine mechanical, electrical, electronic, fuel, and ignition problems with an oscilloscope and engine diagnostic equipment; determine needed action.
- 1629.1.6 Prepare a 4 or 5 gas analyzer; inspect and prepare vehicle for test and obtain exhaust readings; interpret readings and determine needed action.

Standard 2: Perform computerized engine controls diagnosis and repair. (1629.S.2)

Computerized Engine Controls Diagnosis and Repair Objectives

Students will:

- 1629.2.1 Diagnose emissions or driveability problems resulting from failure of computerized engine controls with no diagnostic trouble codes stored; determine needed repairs.
- 1629.2.2 Retrieve and record stored diagnostic trouble codes and diagnose the causes of emissions or driveability problems resulting from failure of computerized engine controls.
- 1629.2.3 Inspect, test, adjust, and replace computerized engine control system sensors, powertrain control module (PCM), actuators, and circuits.
- 1629.2.4 Obtain and interpret digital multimeter (DMM) readings.
- 1629.2.5 Access and use electronic service information (ESI).
- 1629.2.6 Locate and interpret vehicle and major component identifications numbers, (VIN, vehicle certification labels and calibration decals).
- 1629.2.7 Inspect and test power and ground circuits and connections and practice recommended precautions when handling static sensitive devices.
- 1629.2.8 Diagnose driveability and emissions problems resulting from failures of interrelated systems (cruise control, security alarms, torque controls, suspension controls, traction controls, torque management, A/C, automatic transmissions, and similar systems); determine needed repairs.

Standard 3: Perform diagnosis and repair of ignition system. (1629.S.3)

Ignition System Objectives

Students will:

- 1629.3.1 Diagnose no-starting, driveability, and emissions problems on vehicles with electronic ignition (distributor-less) systems and on vehicles with distributor ignition (DI) systems.
- 1629.3.2 Inspect and test ignition primary circuit wiring and components, distributor, ignition system secondary circuit wiring and components and ignition coil(s).
- 1629.3.3 Check and adjust (where applicable) ignition system timing and timing advance/retard.
- 1629.3.4 Inspect and test ignition wiring harness and connectors, ignition system pick-up sensor or triggering devices and ignition control module.

Standard 4: Perform fuel, air induction, and exhaust systems diagnosis and repair. (1629.S.4)

Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair Objectives

Students will:

- 1629.4.1 Diagnose hot or cold no-starting, hard starting, poor driveability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems on vehicles with carburetor-type fuel systems and injection-type fuel systems.
- 1629.4.2 Inspect fuel tank and fuel cap, replace fuel filter, fuel lines, fittings, and hoses. Check fuel for contaminants and quality.
- 1629.4.3 Inspect and test mechanical and electrical fuel pumps and pump control systems; replace as needed.
- 1629.4.4 Inspect and test fuel pressure regulations system and components of injection-type fuel systems and test cold enrichment system components.
- 1629.4.5 Remove, clean, and reinstall throttle body, adjust related linkages and inspect throttle body mounting plates, air induction and filtration system, intake manifold, and gaskets.
- 1629.4.6 Inspect and test fuel injectors; clean and replace.
- 1629.4.7 Check/adjust idle speed and fuel mixture where applicable.
- 1629.4.8 Remove, inspect, and test vacuum and electrical components and connections of fuel system; repair or replace as needed.
- 1629.4.9 Inspect exhaust manifold, exhaust pipes, mufflers, resonators, tail pipes, and heat shields; repair or replace as needed.
- 1629.4.10 Perform exhaust system back-pressure test; determine needed action.
- 1629.4.11 Test the operation of turbocharger/supercharger systems, remove, clean, inspect and repair or replace turbocharger/supercharger system components and identify the causes of turbocharger/supercharger failure.

Standard 5: Demonstrate emissions control systems diagnosis and repair. (1629.S.5)

Emissions Control Systems Diagnosis and Repair Objectives

Students will:

- 1629.5.1 Inspect and test positive crankcase ventilation (PCV) filter/breather cap, valve, tubes, orifices, hoses and diagnose oil leaks, emissions, and driveability problems resulting from failure of the positive crankcase ventilation (PCV) system.
- 1629.5.2 Diagnose emissions and driveability problems caused by failure of the exhaust gas recirculation (EGR) system, inspect and test valve, valve manifold, and exhaust passages, vacuum/pressure controls, filters, and hoses, electrical/electronic sensors, controls, and wiring.
- 1629.5.3 Inspect and test components of catalytic converter systems, diagnose emissions and driveability problems resulting from failure of the secondary air injection and catalytic converter systems, mechanical components of secondary air injection systems, electrical/electronically-operated components and circuits of the air injection systems.
- 1629.5.4 Inspect and test components of intake air temperature control system, and diagnose emissions and driveability problems resulting from failure of the intake air temperature control system.
- 1629.5.5 Inspect and test components of early fuel evaporation control system, and diagnose emissions and driveability problems resulting from failure of the early fuel evaporation control system.
- 1629.5.6 Adjust valves on engines with mechanical or hydraulic lifters.
- 1629.5.7 Verify correct camshaft timing; determine needed action.
- 1629.5.8 Verify engine operating temperature; determine needed action.
- 1629.5.9 Perform cooling system pressure tests; check coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and hoses; service or replace as needed.
- 1629.5.10 Inspect and test thermostat, by-pass, and housing; replace as needed.
- 1629.5.11 Inspect and test mechanical/electrical fans, fan clutch, fan shroud/ducting, air dams, and fan control devices; service or replace as needed.

Fundamentals Of Automotive Technology

WVEIS Code 1631

This course will introduce students to the basic skills in automotive technology/ service. Students will become familiar with fundamentals of automotive technology and basic automotive electrical systems.

Standard 1: Identify, explore, and evaluate career opportunities related to automotive technology. (1631.S.1)

Career Opportunities Related to Automotive Technology Objectives

Students will:

- 1631.1.1 Describe a variety of careers related to automotive technology, and the training necessary to be successful in those careers.
- 1631.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of automotive technology.
- 1631.1.3 Identify sources of information about careers in automotive technology.

Standard 2: Demonstrate knowledge of basic safety rules and equipment as it relates to automotive technology. (1631.S.2)

Automotive Technology Objectives

Students will:

- 1631.2.1 Recognize and follow general shop safety guidelines.
- 1631.2.2 Select and wear appropriate protective equipment.
- 1631.2.3 Demonstrate the proper selection and use of fire extinguishers.
- 1631.2.4 Identify and demonstrate proper use and care of all basic personal safety equipment.
- 1631.2.5 Describe safety precautions necessary when using hazardous materials.
- 1631.2.6 Explain the OSHA "Right to Know" law.
- 1631.2.7 Conduct safety inspections in the lab.

Standard 3: Identify basic hand and power tools and demonstrate safe and appropriate use. (1631.S.3)

Basic Hand and Power Tools Objectives

Students will:

- 1631.3.1 Choose the proper hand tools for given applications, and describe the proper care and maintenance of each.
- 1631.3.2 Demonstrate any adjustments possible with each tool.
- 1631.3.3 Choose proper power tools for given application, and demonstrate proper care and maintenance of each.
- 1631.3.4 Make necessary adjustments to power tools.
- 1631.3.5 Recognize and identify appropriate blade or bit for given situation, and demonstrate the ability to change blades and bits on cutting tools.

Standard 4: Demonstrate a working knowledge of general electrical system diagnosis. (1631.S.4)

General Electrical System Diagnosis Objectives

Students will:

- 1631.4.1 Identify automotive electrical symbols.
- 1631.4.2 Check continuity in electrical circuits with a test light.
- 1631.4.3 Check applied voltages and voltage drops in electrical circuits with analog and digital

- voltmeters.
- 1631.4.4 Check current flow in electrical circuits and components with an ohmmeter.
- 1631.4.5 Check continuity and resistance in electrical circuits and components with analog and digital ohmmeters.
- 1631.4.6 Find shorts and grounds in electrical circuits.
- 1631.4.7 Diagnose the cause(s) of a constant battery drain.
- 1631.4.8 Inspect, test, and replace fusible links, circuit breakers, and fuses.

Standard 5: Demonstrate battery diagnosis and service. (1631.S.5)

Battery Diagnosis and Service Objectives

Students will:

- 1631.5.1 Perform various battery tests, including: state-of-charge test, capacity (load, high-rate discharge) test, and three (3) minute charge test, and determine needed service.
- 1631.5.2 Inspect, clean, fill, or replace battery, battery cables, connectors and clamps.
- 1631.5.3 Slow and fast charge conventional and maintenance free batteries.
- 1631.5.4 Jump start a vehicle with jumper cables and a booster battery or auxiliary power supply.

Standard 6: Demonstrate starting system diagnosis and repair procedures. (1631.S.6)

Starting System Diagnosis and Repair Procedures Objectives

Students will:

- 1631.6.1 Perform starter current draw test and starter circuit voltage drop test: determine needed repairs.
- 1631.6.2 Inspect, test, and repair or replace switches, connectors, and wires of starter control circuits.
- 1631.6.3 Inspect, test, and replace starter relays and solenoids.
- 1631.6.4 Remove and replace starter.
- 1631.6.5 Disassemble and clean starter components, inspect and replace starter drive, inspect and replace starter brushes and brush holders, inspect and replace starter bushings and end frames, inspect and test starter field coils and inspect, test, and replace starter armature.
- 1631.6.6 Perform starter free-running (bench) tests; determine needed repairs.

Standard 7: Identify and repair charging system components. (1631.S.7)

Charging System Components Objectives

Students will:

- 1631.7.1 Diagnose charging system problems that cause an overcharge, undercharge or a no-charge condition.
- 1631.7.2 Inspect, adjust, and replace alternator drive belts, pulleys, and fans.
- 1631.7.3 Perform charging system output test; determine needed repairs.
- 1631.7.4 Perform alternator output test; determine needed repairs.
- 1631.7.5 Remove and replace regulator.

Heating and Air Conditioning

WVEIS Code 1633

This course will introduce students to the heating and air conditioning systems of the automobile. Students will comply with personal and environmental safety practices associated with the handling, storage, and disposal of chemicals in accordance with local, state, and federal safety regulations.

Standard 1: Perform diagnosis and repair of A/C system. (1633.S.1)

Perform Diagnosis and Repair of A/C System Objectives

Students will:

- 1633.1.1 Diagnose unusual operating noises in the A/C system; determine needed repairs.
- 1633.1.2 Conduct performance test of the A/C system; determine needed repairs.
- 1633.1.3 Leak test A/C system; determine needed repairs.
- 1633.1.4 Inspect the condition of discharged oil. Select oil type; measure and add oil to the A/C system as needed.

Standard 2: Perform refrigeration system component diagnosis and repair. (1633.S.2)

Refrigeration System Component Diagnosis and Repair Objectives

Students will:

- 1633.2.1 Diagnose A/C system problems that cause the protection devices (pressure, thermal, and PCM) to interrupt system operations; determine needed repairs.
- 1633.2.2 Inspect A/C compressor drive belts; replace and adjust as needed.
- 1633.2.3 Inspect, test, and replace A/C compressor clutch components or assembly.
- 1633.2.4 Remove and replace A/C compressor and mountings.
- 1633.2.5 Inspect and replace A/C compressor shaft seal assembly.
- 1633.2.6 Diagnose A/C system problems caused by too much moisture in the refrigerant; determine needed repairs.
- 1633.2.7 Install A/C system filter. Remove and inspect A/C system mufflers, hoses, lines, fittings, O-rings, seals, and service valves; replace as needed.
- 1633.2.8 Inspect A/C condenser for air flow restrictions; service as required.
- 1633.2.9 Inspect receiver/drier or accumulator/drier; service as needed.
- 1633.2.10 Inspect and test expansion valve or orifice (expansion) tube; replace as needed.
- 1633.2.11 Inspect evaporator housing water drain; repair as needed.

Standard 3: Perform diagnosis and repair of heating and engine cooling systems. (1633.S.3)

Heating and Engine Cooling Systems Objectives

Students will:

- 1633.3.1 Diagnose temperature control problems in the heater/ventilation system; determine needed repairs.
- 1633.3.2 Perform cooling system, cap, and recovery system tests (pressure, combustion leakage, and temperature); determine needed repairs.
- 1633.3.3 Inspect engine cooling and heater system hoses and belts; replace as needed.
- 1633.3.4 Inspect, test, and replace thermostat and housing.
- 1633.3.5 Determine coolant condition; drain and recover. Flush system and refill with recommended coolant; bleed system.
- 1633.3.6 Clean, inspect and test fan, fan clutch (electrical and mechanical), fan shroud, and air dams; replaces as needed.

1633.3.7 Inspect and test heater control valve(s); replace as needed.

Standard 4: Perform operating systems and related controls diagnosis and repair. (1633.S.4)

Operating Systems and Related Controls Diagnosis and Repair Objectives

Students will:

- 1633.4.1 Diagnose failures in the electrical controls of heating and A/C systems; determine needed repairs.
- 1633.4.2 Inspect and test A/C - heater blower, motors, resistors, switches, relays, wiring, and protection devices; repair or replace as needed.
- 1633.4.3 Test A/C compressor load cut-off systems; determine needed repairs.
- 1633.4.4 Diagnose failures in the vacuum and mechanical controls of the heating and A/C system; determine needed repairs.
- 1633.4.5 Inspect and test A/C -heater control panel assembly; inspect and test A/C-heater control cables and linkages; replace as needed.
- 1633.4.6 Inspect and test A/C-heater vacuum control switches, hoses, diaphragms (motors), vacuum reservoir, check valve, and restrictors; replace as needed.
- 1633.4.7 Check operation of automatic and semi-automatic heating, ventilation, and air-conditioning (HVAC) control systems; determine needed repairs.

Standard 5: Perform refrigerant recovery, recycling and handling. (1633.S.5)

Refrigerant Recovery, Recycling and Handling Objectives

Students will:

- 1633.5.1 Verify correct operation and maintenance of refrigerant handling equipment. Identify and recover A/C system refrigerant.
- 1633.5.2 Recycle, label and store refrigerant.
- 1633.5.3 Test recycled refrigerant for non-condensable gases.
- 1633.5.4 Evacuate and charge A/C system.

Manual/Automatic Drive Train Axles

WVEIS Code 1635

This course will introduce students to the manual/automatic drive train and axle systems of the automobile.

Standard 1: Apply clutch diagnosis and repair. (1635.S.1)

Clutch Diagnosis and Repair Objectives

Students will:

- 1635.1.1 Diagnose clutch noise, binding, slippage, pulsation, and chatter problems; determine needed repairs.
- 1635.1.2 Inspect, adjust or replace clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings, pivots, springs, hydraulic clutch slave and master cylinders, lines, and hoses.
- 1635.1.3 Inspect, adjust or replace release (throw-out) bearing, lever and pivot, crankshaft pilot bearing or bushing (as applicable), clutch pressure plate assembly and clutch disc.
- 1635.1.4 Inspect, repair, and service or replace flywheel and ring gear. Measure flywheel-to-block runout and crankshaft end play; determine needed repairs.
- 1635.1.5 Inspect engine block, clutch (bell) housing, and transmission case mating surfaces; measure clutch (bell) housing bore-to-crankshaft runout and face squareness; determine needed repairs.

Standard 2: Demonstrate manual transmission diagnosis and repair. (1635.S.2)

Manual Transmission Diagnosis and Repair Objectives

Students will:

- 1635.2.1 Diagnose transmission noise, hard shifting, jumping out of gear, and fluid leakage problems; determine needed repairs.
- 1635.2.2 Inspect, adjust, and replace transmission shift linkages, brackets, bushings, cables, pivots, and levers. Inspect, replace, and align power train mounts.
- 1635.2.3 Inspect and replace transmission gaskets, seals, and sealants; inspect sealing surfaces.
- 1635.2.4 Remove, disassemble, clean, reassemble transmission components and reinstall transmission.
- 1635.2.5 Inspect, adjust, and reinstall transmission shift cover, forks, grommets, levers, shafts, sleeves, detent mechanisms, interlocks, and springs. Inspect lubrication devices (oil pump or slingers).
- 1635.2.6 Inspect and replace speedometer drive gear, driven gear, vehicle speed sensor (VSS) and retainers.
- 1635.2.7 Inspect, repair, and replace extension housing and transmission case mating surfaces, bores, bushings, and vents.

Standard 3: Perform transaxle diagnosis and repair. (1635.S.3)

Transaxle Diagnosis and Repair Objectives

Students will:

- 1635.3.1 Diagnose transaxle noise, hard shifting, jumping out of gear, and fluid leakage problems; determine needed repairs.
- 1635.3.2 Inspect, adjust, and reinstall transaxle shift linkages, brackets, bushings, cables, pivots, and levers. Inspect and reinstall power train mounts.
- 1635.3.3 Inspect and replace transaxle gaskets, seals, and sealants; inspect sealing surfaces.
- 1635.3.4 Remove and reinstall transaxle and replace final drive.

- 1635.3.5 Inspect, adjust and reinstall transaxle shift cover, forks, levers, grommets, shafts, sleeves, detent mechanism, interlocks and springs, input (clutch) shaft and bearings, output shaft, gears, thrust washers, bearings, and retainers.
- 1635.3.6 Measure end play or preload (shim or spacer selection procedure) on transaxle shafts; adjust as needed.
- 1635.3.7 Inspect and reinstall synchronizer hub, sleeve, keys (inserts), springs, and blocking rings, reverse idler gear, shaft, bearings, thrust washers, and retainers.
- 1635.3.8 Inspect transaxle case, mating surfaces, bores, bushings, and vents.
- 1635.3.9 Inspect and reinstall speedometer drive gear, driven gear, vehicle speed sensor (VSS), and retainers, inspect, measure, adjust, and reinstall differential pinion gears (spiders), shaft, side gears, side bearings, thrust washers, and case assembly. Inspect lubrication devices (oil pump or slingers).
- 1635.3.10 Diagnose differential assembly noise and vibration problems; determine needed repairs.

Standard 4: Perform diagnosis and repair of universal and constant-velocity (CV) joint. (1635.S.4)

Universal and Constant-Velocity (CV) Joint Objectives

Students will:

- 1635.4.1 Diagnose constant-velocity (CV) joint/ universal joint noise and vibrations problems; determine needed repairs.
- 1635.4.2 Diagnose front wheel drive (FWD) front wheel bearing noise and vibration problems.
- 1635.4.3 Inspect, service, and replace shafts, yokes, boots, and shaft center support bearings.
- 1635.4.4 Check and correct shaft balance; measure shaft runout; measure and adjust driveline angles.

Standard 5: Perform ring and pinion gears and differential case assembly. (1635.S.5)

Ring and Pinion Gears and Differential Case Assembly Objectives

Students will:

- 1635.5.1 Diagnose ring and pinion gears noise and vibrations and fluid leakage problems.
- 1635.5.2 Inspect and replace companion flange and pinion seal; measure companion flange runout.
- 1635.5.3 Inspect ring gear, pinion gear, spacers, sleeves, and bearings and measure runout. Measure and adjust drive pinion depth, pinion bearing preload, side bearing preload and pinion gear total backlash and backlash variation on a differential carrier assembly (threaded cup and shim types).
- 1635.5.4 Disassemble, inspect, measure, and adjust or replace differential pinion gears (spiders), shaft, side gears, side bearings, thrust washers, and case. Check ring and pinion tooth contact patterns; adjust as needed.
- 1635.5.5 Reassemble and reinstall differential case assembly; measure runout; make needed adjustments.

Standard 6: Demonstrate limited slip differential, diagnosis and repair. (1635.S.6)

Limited Slip Differential, Diagnosis and Repair Objectives

Students will:

- 1635.6.1 Diagnose noise, slippage, and chatter problems; determine needed repairs.
- 1635.6.2 Inspect and flush differential housing; refill with correct lubricant.
- 1635.6.3 Inspect and reinstall clutch (cone or plate) components.
- 1635.6.4 Measure rotating torque; determine needed repairs.

Standard 7: Perform diagnosis and repair of axle shafts. (1635.S.7)

Perform Diagnosis and Repair of Axle Shafts Objectives

Students will:

- 1635.7.1 Diagnose rear axle shafts, bearings, and seals for noise, vibration, and fluid leakage problems; determine needed repairs.
- 1635.7.2 Remove and replace rear axle shafts. Inspect and replace rear axle shaft wheel studs.
- 1635.7.3 Inspect, measure rear axle flange runout and shaft end play and replace rear axle shaft seals, bearings, and retainers.

Standard 8: Perform four-wheel drive/all wheel drive component diagnosis and repair. (1635.S.8)

Four-Wheel Drive/All Wheel Drive Component Diagnosis and Repair Objectives

Students will:

- 1635.8.1 Diagnose noise, vibration, and unusual steering problems; determine needed repairs.
- 1635.8.2 Inspect, adjust, and repair shifting controls (mechanical, electrical, and vacuum), bushings, mounts, levers, and brackets.
- 1635.8.3 Remove, disassemble, service, and reassemble transfer case and components and reinstall transfer case.
- 1635.8.4 Inspect, service, and replace front-wheel bearings and locking hubs.
- 1635.8.5 Inspect viscous coupling assembly. Check drive assembly seals and vents; check lube level.

Standard 9: Demonstrate automatic transmission/transaxle diagnosis, maintenance and adjustment. (1635.S.9)

Automatic Transmission/Transaxle Diagnosis, Maintenance and Adjustment Objectives

Students will:

- 1635.9.1 Interpret and verify drivers complaint, diagnose noise and vibrations problems, verify proper engine operation, diagnose unusual fluid usage, level, and condition problems.
- 1635.9.2 Perform stall tests, perform lock-up converter system tests and determine needed repairs.
- 1635.9.3 Diagnose electronic, mechanical, and vacuum control systems; determine needed repairs.
- 1635.9.4 Inspect, adjust, or replace manual shift valve and throttle (TV) linkages or cables and check gear select indicator (as applicable).
- 1635.9.5 Inspect, repair, and replace governor assembly.
- 1635.9.6 Inspect, measure, clean, and replace valve body (includes surfaces and bores, springs, valves, sleeves, retainers, brackets, check-ball, screens, spacers, and gaskets); check/adjust valve body bolt torque.
- 1635.9.7 Inspect servo bore, piston, seals, pin, spring, and retainers; repair or replace as needed.
- 1635.9.8 Inspect accumulator bore, piston, seals, spring, and retainer; repair or replace as needed.
- 1635.9.9 Inspect, test, adjust, repair or replace transmission related electrical and electronic components (includes computers, solenoids, sensors, relays, switches, and harnesses).
- 1635.9.10 Inspect, replace, align power train mounts.
- 1635.9.11 Inspect and replace parking brake shaft, spring, and retainer.
- 1635.9.12 Remove and reinstall transmission and torque converter (rear-wheel drive).
- 1635.9.13 Remove and reinstall transaxle and torque converter assembly.
- 1635.9.14 Disassemble, clean, and inspect and reassemble transmission/transaxle.

Standard 10: Perform oil pump and converter diagnosis and repair. (1635.S.10)

Oil Pump and Converter Diagnosis and Repair Objectives

Students will:

- 1635.10.1 Inspect converter flex plate, attaching parts, pilot and pump drive, and seal areas.
- 1635.10.2 Measure torque converter end play and check for interference; check stator clutch.
- 1635.10.3 Inspect, measure, and replace oil pump housings, shafts, vanes, rotors, gears, valves, seals, and bushings.
- 1635.10.4 Check torque converter and transmission cooling system for contamination.

Standard 11: Inspect and repair gear train, shafts, bushings and case. (1635.S.11)

Gear Train, Shafts, Bushings and Case Objectives

Students will:

- 1635.11.1 Check end play or preload, inspect, measure, and replace thrust washers and bearings.
- 1635.11.2 Inspect bushings, oil delivery seal rings, ring grooves, and sealing surface areas; replace as needed.
- 1635.11.3 Inspect and measure planetary gear assembly (includes sun, ring gear, thrust washers, planetary gears, and carrier assembly); replace as needed.
- 1635.11.4 Inspect cases, bores, passages, bushings, vents, and mating surfaces; replace as needed.
- 1635.11.5 Inspect, measure, repair, adjust or replace transaxle final drive components.
- 1635.11.6 Inspect and reinstall parking pawl, shaft, spring, and retainer; replace as needed.

Standard 12: Perform diagnosis and repair of friction and reaction units. (1635.S.12)

Friction and Reaction Units Objectives

Students will:

- 1635.12.1 Inspect clutch drum, piston, check-balls, springs, retainers, seals, and friction and pressure plates, clutch pack clearance, and inspect bands and drums; replace as needed.
- 1635.12.2 Air test operation of clutch and servo assemblies.
- 1635.12.3 Inspect roller and sprag clutch, races, rollers, sprags, springs, cages, and retainers; replace as needed.

Suspension and Steering Diagnosis

WVEIS Code 1637

This course will introduce students to the basic fundamental skills, technology, and service of automotive suspension and steering systems.

Standard 1: Perform steering systems diagnosis and repair. (1637.S.1)

Steering Systems Diagnosis and Repair Objectives

Students will:

- 1637.1.1 Disable supplemental restraint system (SRS) in accordance with manufacturer's procedures.
- 1637.1.2 Diagnose steering column noises, looseness, and binding problems (including tilt mechanisms); determine needed repairs.
- 1637.1.3 Diagnose power rack and pinion and non-rack and pinion steering gear binding, uneven turning effort, looseness, hard steering, steering gear vibration, and fluid leakage problems; determine needed repairs.
- 1637.1.4 Inspect and replace steering shaft universal-joint(s), flexible coupling(s), collapsible column, lock cylinder mechanism, and steering wheel.
- 1637.1.5 Adjust manual or power non-rack and pinion worm gear bearing pre-load and sector lash.
- 1637.1.6 Remove and replace manual or power rack and pinion steering gear; inspect mounting bushings and brackets.
- 1637.1.7 Disassemble, inspect, repair, and reassemble rack and pinion steering gear.
- 1637.1.8 Adjust manual or power rack and pinion steering gear.
- 1637.1.9 Inspect and replace manual or power rack and pinion steering gear inner tie rod ends (sockets) and bellows boots.
- 1637.1.10 Inspect manual and power steering fluid levels and condition. Flush, fill, and bleed power steering system. Inspect, replace, and adjust power steering pump belt.
- 1637.1.11 Diagnose power steering fluid leakage; determine needed repairs.
- 1637.1.12 Remove, inspect, and replace power steering pump, pump mounts, pump seals, and gaskets. Remove, inspect, and replace power steering pump pulley and check alignment.
- 1637.1.13 Perform power steering system pressure test; determine needed repairs. Inspect and replace power steering hoses and fittings.
- 1637.1.14 Inspect and replace pitman arm, relay (centerlink/intermediate) rod, idler arm and mountings, and steering linkage damper. Inspect, replace, and adjust tie ends (sockets), tie rod sleeves, and clamps.
- 1637.1.15 Diagnose, inspect, adjust, repair or replace components of electronically-controlled steering systems.
- 1637.1.16 Diagnose, inspect, repair or replace components of variable-assist steering systems.

Standard 2: Perform diagnosis and repair of front suspensions. (1637.S.2)

Diagnosis and Repair of Front Suspensions Objectives

Students will:

- 1637.2.1 Diagnose short and long arm suspension system noises, body sway, and uneven riding height problems; determine needed repairs.
- 1637.2.2 Diagnose MacPherson strut suspension system noises, body sway, and uneven riding height problems; determine needed repairs. Remove, inspect, and replace ball joints on strut suspension systems.
- 1637.2.3 Remove, inspect, and replace MacPherson strut cartridge or assembly, strut coil spring, insulators, and upper strut bearing mount.
- 1637.2.4 Remove, inspect, replace upper and lower control arms, bushings, shafts, and rebound

- bumpers. Remove, inspect, and replace steering knuckle assemblies.
- 1637.2.5 Remove, inspect, replace and adjust strut (compression/tension) rods and bushings.
- 1637.2.6 Remove, inspect, and replace upper and lower ball joints on short and long arm suspension systems.
- 1637.2.7 Remove, inspect, and replace short and long arm suspension system coil springs and spring insulators.
- 1637.2.8 Remove, inspect, replace, and adjust suspension system torsion bars; inspect mounts.
- 1637.2.9 Remove, inspect, and replace stabilizer bar bushings, brackets, and links.
- 1637.2.10 Lubricate suspension and steering systems.

Standard 3: Perform diagnosis and repair of rear suspensions. (1637.S.3)

Rear Suspensions Objectives

Students will:

- 1637.3.1 Remove, inspect, and replace coil springs and spring insulators.
- 1637.3.2 Remove, inspect and replace transverse links, control arms, bushings, and mounts.
- 1637.3.3 Remove, inspect, and replace leaf springs, leaf spring insulators (silencers), shackles, brackets, bushings, and mounts.
- 1637.3.4 Remove, inspect, and replace MacPherson strut cartridge or assembly, strut coil spring, and insulators (silencers).

Standard 4: Demonstrate miscellaneous services. (1637.S.4)

Miscellaneous Services Objectives

Students will:

- 1637.4.1 Inspect, remove, and replace shock absorbers.
- 1637.4.2 Remove, inspect, and service or replace front and rear wheel bearings.
- 1637.4.3 Diagnose, inspect, adjust, repair or replace components of electronically-controlled suspension systems.

Standard 5: Perform diagnosis and adjust wheel alignment. (1637.S.5)

Wheel Alignment Objectives

Students will:

- 1637.5.1 Diagnose vehicle wander, drift, pull, hard steering, bump steer, ride height, memory steer, torque steer, and steering return problems; determine needed repairs.
- 1637.5.2 Check and adjust front and rear wheel camber, caster, toe, SAI (steering axis inclination) and determine needed repairs.
- 1637.5.3 Center steering wheel.
- 1637.5.4 Check rear wheel thrust angle; determine needed repairs.
- 1637.5.5 Check for front wheel setback; determine needed repairs.
- 1637.5.6 Check front cradle (sub-frame) alignment; determine needed repairs.

Standard 6: Perform diagnosis and repair of wheels and tires. (1637.S.6)

Wheels and Tires Objectives

Students will:

- 1637.6.1 Inspect tires; check and adjust air pressure. Diagnose tire wear patterns and determine needed repairs. Rotate tires according to manufacturer's recommendations.
- 1637.6.2 Diagnose wheel/tire vibrations, shimmy, and noise problems; determine needed repairs.
- 1637.6.3 Measure wheel, tire, axle, and hub run-out; determine needed repairs.
- 1637.6.4 Diagnose tire pull (lead) problem; determine corrective actions.

1637.6.5 Dismount, inspect, repair, and remount tire on wheel. Balance wheel and tire assembly (static and dynamic). Reinstall wheel; torque lug nuts.

Cabling-Video/Data/Voice

WVEIS Code 1641

This course will introduce students to the fundamentals of telecommunications, cabling installation, standards, codes, plans and specifications.

Standard 1: Demonstrate knowledge of cabling installation overview. (1641.S.1)

Cabling Installation Overview Objectives

Students will:

- 1641.1.1 Describe the history and future directions of the cabling industry.
- 1641.1.2 Describe the knowledge and skills covered in the training.
- 1641.1.3 Register for the required examinations for the training.

Standard 2: Describe general information related to cabling. (1641.S.2)

Cabling Objectives

Students will:

- 1641.2.1 Identify structured premise cabling system characteristics.
- 1641.2.2 Specify standards and codes.
- 1641.2.3 Read plans and specifications.
- 1641.2.4 Understand various cabling media.
- 1641.2.5 Use various types of connectors.
- 1641.2.6 Apply transmission fundamentals.
- 1641.2.7 Properly do grounding and bonding.
- 1641.2.8 Use the accepted safety standards and procedures.
- 1641.2.9 Work as a professional in the cabling industry.

Standard 3: Utilize the proper cable installation practices. (1641.S.3)

Cable Installation Practices Objectives

Students will:

- 1641.3.1 Apply pre-cabling preparation practices.
- 1641.3.2 Perform cable pulling operations.
- 1641.3.3 Install the necessary firestopping systems.
- 1641.3.4 Apply cable termination functions.
- 1641.3.5 Perform cable splicing procedures.
- 1641.3.6 Properly perform cable testing procedures.
- 1641.3.7 Be able to troubleshoot cable problems.
- 1641.3.8 Perform retrofitting procedures.
- 1641.3.9 Perform administrative tasks associated with cabling practices.

Fundamentals of UNIX

WVEIS Code 1643

Fundamentals of UNIX teaches students how to use UNIX and Linux operating system commands and, in the hands-on exercises, basic operating environment commands, and introduces the Common Desktop Environment (CDE – graphical interface between different environments). The class is intended for new users of UNIX. Students will learn fundamental command-line features including file system navigation, file permissions, the vi text editor, command shells and basic network use. CDE features include Standard Desktop Tools, Text Editor, printing and mail.

Standard 1: The UNIX Computing Environment (1643.S.1)

Students will be introduced to the main concepts of the UNIX computing environment.

The UNIX Computing Environment Objectives

Students will:

- 1643.1.1 Identify the main components of a computer.
- 1643.1.2 Identify the network operating system.
- 1643.1.3 Identify the network operating system capabilities.
- 1643.1.4 Explain a brief history of UNIX.
- 1643.1.5 Discuss the UNIX varieties.
- 1643.1.6 Identify the benefits of UNIX.
- 1643.1.7 Explain the Solaris Operating Environment.
- 1643.1.8 Recognize the SunOS Operating Systems.
- 1643.1.9 Specify Graphical User Interface (GUI) options.

Standard 2: Accessing Your System and the Common Desktop Environment (1643.S.2)

Students will demonstrate the ability to access the common desktop environment.

Accessing Your System and the Common Desktop Environment Objectives

The student will:

- 1643.2.1 Define the different account types.
- 1643.2.2 Discuss Login ID and password requirements.
- 1643.2.3 Identify CDE v. command line environment.
- 1643.2.4 Demonstrate logging in and out of the system.
- 1643.2.5 Demonstrate changing your password.
- 1643.2.6 Recognize front panel layout.
- 1643.2.7 Demonstrate the use of the mouse and keyboard.
- 1643.2.8 Explain how to manage windows.
- 1643.2.9 Demonstrate how to lock the display.
- 1643.2.10 Demonstrate the workspace button.
- 1643.2.11 Identify how to minimize and maximize the front panel.
- 1643.2.12 Recognize the workspace menu.
- 1643.2.13 Demonstrate how to use style manager options.
- 1643.2.14 Demonstrate how to add and remove application with subpanels.
- 1643.2.15 Explain application manager.

Standard 3: CDE User Applications (1643.S.3)

Students will use demonstrate the use of CDE user applications.

CDE User Applications Objectives

Students will:

- 1643.3.1 Recognize the mail tool.
- 1643.3.2 Demonstrate how to compose a new mail message.
- 1643.3.3 Demonstrate how to respond to a received message.
- 1643.3.4 Demonstrate how to delete a message.
- 1643.3.5 Identify the mail tool options menu.
- 1643.3.6 Create alternate mailboxes.
- 1643.3.7 Identify a calendar manager.
- 1643.3.8 Demonstrate how to view a calendar.
- 1643.3.9 Demonstrate setting calendar options.
- 1643.3.10 Demonstrate working with appointments.
- 1643.3.11 Demonstrate working with other user's calendars.
- 1643.3.12 Explain voice and text note applications.
- 1643.3.13 Identify address manager.
- 1643.3.14 Identify the use of a calculator.
- 1643.3.15 Identify the clock.
- 1643.3.16 Recognize terminal windows.

Standard 4: CDE Help (1643.S.4)

Students will use CDE Help.

CDE Help Objectives

Students will:

- 1643.4.1 Demonstrate using help viewer.
- 1643.4.2 Demonstrate how to search the help index.
- 1643.4.3 Demonstrate using item help.
- 1643.4.4 Recognize other ways to access help.
- 1643.4.5 Explain AnswerBook2.
- 1643.4.6 Identify Man pages.
- 1643.4.7 Identify the man command.
- 1643.4.8 Demonstrate working with man pages.
- 1643.4.9 Demonstrate troubleshooting CDE Help.
- 1643.4.10 Explain the reference table.

Standard 5: Accessing Files and Directories (1643.S.5)

Students will be able to access files and directories.

Files and Directories Objectives

Students will:

- 1643.5.1 Explain sample user directory structure.
- 1643.5.2 Explain the functions of directories.
- 1643.5.3 Explain the file system structure.
- 1643.5.4 Recognize pathnames.
- 1643.5.5 Recognize path components.
- 1643.5.6 Recognize the types of pathnames.
- 1643.5.7 Identify command-line syntax.
- 1643.5.8 Display the current directory.
- 1643.5.9 Demonstrate how to change directories using the cd command.
- 1643.5.10 Explain the ls command.
- 1643.5.11 Display hidden files.

- 1643.5.12 Display file types.
- 1643.5.13 Display a long listing.
- 1643.5.14 List individual listing.
- 1643.5.15 List directories recursively.
- 1643.5.16 Identify metacharacters.
- 1643.5.17 Demonstrate the use of metacharacters.

Standard 6: Basic Directory and File Management (1643.S.6)

Students will demonstrate the use of basic directory and file management.

Basic Directory and File Management Objectives

Students will:

- 1643.6.1 Demonstrate how to use control characters.
- 1643.6.2 Determine file type.
- 1643.6.3 Display file contents with cat and more.
- 1643.6.4 Display file contents with head and tail.
- 1643.6.5 Identify the wc command.
- 1643.6.6 Identify how to recognize files.
- 1643.6.7 Explain file and directory naming conventions.
- 1643.6.8 Identify how to create files.
- 1643.6.9 Identify how to create directories.
- 1643.6.10 Demonstrate how to remove files and directories.
- 1643.6.11 Identify the file manager.
- 1643.6.12 Identify the file and folder icons.
- 1643.6.13 Identify the file menu options.
- 1643.6.14 Demonstrate how to create new folders and files.
- 1643.6.15 Demonstrate how to change folders.
- 1643.6.16 Demonstrate how to recover files.

Standard 7: Advanced Directory and File Management (1643.S.7)

Students will demonstrate various tasks while working with advanced directories and file management.

Advanced Directory and File Management Objectives

Students will:

- 1643.7.1 Demonstrate how to copy files.
- 1643.7.2 Identify copying directories.
- 1643.7.3 Demonstrate renaming and moving files.
- 1643.7.4 Demonstrate renaming and moving directories.
- 1643.7.5 Explain input/output redirection.
- 1643.7.6 Identify command piping.
- 1643.7.7 Demonstrate how to move and copy files using drag-and-drop.
- 1643.7.8 Recognize selected menu options.
- 1643.7.9 Recognize view menu options.

Standard 8: File and User Information Utilities (1643.S.8)

Students will be introduced to file and user information utilities.

File and User Information Utilities Objectives

Students will:

- 1643.8.1 Explain how to find files.
- 1643.8.2 Demonstrate how to search for strings.

- 1643.8.3 Identify how to find files using the file manager.
- 1643.8.4 Recognize the sorting output.
- 1643.8.5 Identify the who command.
- 1643.8.6 Demonstrate how to switch to another user account.
- 1643.8.7 Access user account information.

Standard 9: Using Text Editors (1643.S.9)

Students will use text editors.

Text Editors Objectives

Students will:

- 1643.9.1 Define vi.
- 1643.9.2 Identify the vi modes.
- 1643.9.3 Demonstrate opening files with vi.
- 1643.9.4 Recognize input commands (entry mode).
- 1643.9.5 Demonstrate how to save files and quitting vi (last-line mode).
- 1643.9.6 Explain positioning commands (command mode).
- 1643.9.7 Explain editing commands (command and last-line mode).
- 1643.9.8 Discuss advanced editing options (last-line mode).
- 1643.9.9 Demonstrate opening a text editor window.
- 1643.9.10 Demonstrate using file options.
- 1643.9.11 Demonstrate editing options.
- 1643.9.12 Demonstrate replacing text.
- 1643.9.13 Recognize format menu options.
- 1643.9.14 Recognize text editor options.

Standard 10: File System Security (1643.S.10)

Students will identify file system security.

File System Security Objectives

Students will:

- 1643.10.1 Discuss security policies.
- 1643.10.2 Discuss the superuser account.
- 1643.10.3 Display file system permissions.
- 1643.10.4 Recognize permission categories (classes).
- 1643.10.5 Recognize permission types.
- 1643.10.6 Determine file and directory access.
- 1643.10.7 Discuss changing permissions.
- 1643.10.8 Discuss symbolic (relative) mode.
- 1643.10.9 Discuss octal (absolute) mode.
- 1643.10.10 Discuss changing properties.

Standard 11: UNIX Printing Environment (1643.S.11)

Students will demonstrate the use of UNIX Printing Environments.

UNIX Printing Environment Objectives

Students will:

- 1643.11.1 Identify printing environment components.
- 1643.11.2 Discuss the printing process.
- 1643.11.3 Identify the lp print spooler.
- 1643.11.4 Monitor queue status.

- 1643.11.5 Demonstrate how to cancel a print request.
- 1643.11.6 Recognize printer jobs.
- 1643.11.7 Recognize printer properties and job options.
- 1643.11.8 Demonstrate how to print from file manager.

Standard 12: Backing Up and Restoring (1643.S.12)

Students will discuss the importance of backing up and restoring a system.

Backing Up and Restoring Objectives

Students will:

- 1643.12.1 Discuss the importance of backups.
- 1643.12.2 Discuss the backup methods.
- 1643.12.3 Discuss data restoration issues.
- 1643.12.4 Identify magnetic tape.
- 1643.12.5 Identify magnetic and optional disks.
- 1643.12.6 Demonstrate backing up files with tar.
- 1643.12.7 Demonstrate compressing files.
- 1643.12.8 Demonstrate uncompressing files.
- 1643.12.9 Demonstrate backing up and compressing the home directory.
- 1643.12.10 Demonstrate how to restore files.
- 1643.12.11 Discuss the jar command.
- 1643.12.12 Discuss the use of CDE to archive, compress, and restore.

Standard 13: System Processes and Memory Management (1643.S.13)

Students will discuss system processes and the memory management of a system.

System Process and Memory Management Objectives

Students will:

- 1643.13.1 Discuss the system process overview.
- 1643.13.2 Discuss the types of processes.
- 1643.13.3 Discuss the ps command.
- 1643.13.4 Identify how to search for a specific process.
- 1643.13.5 Identify processes to terminate.
- 1643.13.6 Discuss signals and the kill command.
- 1643.13.7 Discuss physical memory (RAM) and swap space.

Standard 14: Basic Features of the Korn and C Shells (1643.S.14)

Students will discuss the basic features of the Korn and C Shells.

Basic Features of the Korn and C Shells Objectives

Students will:

- 1643.14.1 Discuss Shell overview.
- 1643.14.2 Discuss Korn shell aliases.
- 1643.14.3 Discuss the history command in the Korn shell.
- 1643.14.4 Explain re-executing commands in the Korn shell.
- 1643.14.5 Demonstrate editing the command line in the Korn shell.
- 1643.14.6 Recognize custom prompts with the Korn shell.
- 1643.14.7 Recognize the custom prompts in the C shell.
- 1643.14.8 Recognize aliases in the C shell.
- 1643.14.9 Discuss the history command in the C shell.
- 1643.14.10 Discuss re-executing commands in the C shell.

1643.14.11 Discuss command-line substitution with the C shell.

Standard 15: Customizing Your Login Environment (1643.S.15)

Students will discuss how to customize a Login Environment.

Customizing Objectives

Students will:

- 1643.15.1 Discuss the features of initialization files.
- 1643.15.2 Discuss system wide initialization files.
- 1643.15.3 Discuss user specific initialization files.
- 1643.15.4 Discuss Korn shell customization.
- 1643.15.5 Discuss C shell customization.
- 1643.15.6 Discuss the CDE initialization file.

Standard 16: Network Basics (1643.S.16)

Students will identify and discuss the basics of network systems.

Network Basics Objectives

Students will:

- 1643.16.1 Identify Local Area Networks (LANs).
- 1643.16.2 Identify Wide Area Networks (WANs).
- 1643.16.3 Recognize LAN architecture elements.
- 1643.16.4 Discuss shared Ethernet.
- 1643.16.5 Discuss switched Ethernet.
- 1643.16.6 Discuss token ring and FDDI.
- 1643.16.7 Discuss network topologies.
- 1643.16.8 Identify the OSI model.
- 1643.16.9 Identify the TCP/IP protocol.
- 1643.16.10 Discuss client-server computing.
- 1643.16.11 Discuss the ping utility.
- 1643.16.12 Identify Telnet.
- 1643.16.13 Identify the rlogin command.
- 1643.16.14 Identify the ftp command.
- 1643.16.15 Discuss the naming service overview.
- 1643.16.16 Discuss NIS administration.
- 1643.16.17 Discuss NFS system.

Standard 17: Career Opportunities (1643.S.17)

Students will discuss the career opportunities related to the field of UNIX.

Career Opportunities Objectives

Students will:

- 1643.17.1 Discuss what is next in UNIX.
- 1643.17.2 Discuss the careers in the UNIX System Administration.
- 1643.17.3 Discuss the Solaris Certification.
- 1643.17.4 Discuss the Sun Academic Initiative (SAI).

Networking Fundamentals

WVEIS Code 1645

This is the first of four courses designed to provide students with classroom and laboratory experience in the computer-networking field. Instruction and training are provided in the proper care, maintenance, and use of networking software, tools, and equipment. Students will also be made aware of safety, building and environmental codes and regulations.

Standard 1: Demonstrate the proper care, maintenance and use of networking software, tools and equipment. (1645.S.1)

Networking Software, Tools and Equipment Objectives

Students will:

- 1645.1.1 Apply safety rules, regulations, and procedures.
- 1645.1.2 Utilize decision-making techniques and employ higher-level thinking skills.
- 1645.1.3 Demonstrate an understanding of the OSI model and its seven layers.
- 1645.1.4 Demonstrate an understanding of IP addressing schemes.
- 1645.1.5 Define and demonstrate an understanding of the concept of routers.
- 1645.1.6 Display an understanding of the application of the binary number system.
- 1645.1.7 Understand the use of ARP/RARP with routers.
- 1645.1.8 Discuss the problems and capabilities with various types of media.
- 1645.1.9 Identify and describe the appropriate IEEE standards for Ethernet and Token Ring
- 1645.1.10 Design a LAN in the lab setting.
- 1645.1.11 Describe the design of three types of topologies.
- 1645.1.12 Make a connection between network media and telecommunications outlets.
- 1645.1.13 Successfully string cable using approved methods.
- 1645.1.14 Properly use a cable stretcher for selected tests on the wire.
- 1645.1.15 Apply EIA/TIA standards to MDF's and IDF's.
- 1645.1.16 Define and select solutions for: surge, spike, sag, oscillation and ground loop.
- 1645.1.17 Apply SCAN skills to the workplace.

Project Based Networking

WVEIS Code 1647

This is the fourth of four courses designed to introduce new content and extend previously learned networking skills. Project Based Networking introduces Wide Area Networks (WAN's), Integrated Services Data Networks (ISDN), Point-to-Point Protocols (PPP) and Frame Relay design, configuration, and maintenance. The culmination of the course is the Threaded Case Study, in which the student designs a WAN utilizing all the knowledge gained in the previous Cisco Courses.

Standard 1: Demonstrate the ability to use Wide Area Networks, Integrated Services Data Networks, Point-to-Point Protocols and Frame Relay design, configuration and maintenance. (1647.S.1)

Wide Area Networks, Integrated Services Data Networks, Point-to-Point Protocols and Frame Relay Design, Configuration and Maintenance Objectives

The student will:

- 1647.1.1 Understand the basics of WAN technologies.
- 1647.1.2 Study WAN encapsulation formats, protocols, HDLC, PPP.
- 1647.1.3 Become aware of the process for gathering data to implement a WAN.
- 1647.1.4 Describe the placement of Integrated Services Data Network and Frame Relay
- 1647.1.5 Describe PPP's connection negotiation process
- 1647.1.6 Understand the use of Link Control Protocol and Network Control Protocol.
- 1647.1.7 Configure and verify a PPP connection.
- 1647.1.8 Be able to explain why ISDN is used.
- 1647.1.9 Apply the standards of ISDN.
- 1647.1.10 Configure an ISDN connection.
- 1647.1.11 Understand the services and standards of Frame Relay.
- 1647.1.12 Understand the functions of DLCI in Frame Relay.
- 1647.1.13 Explain how Frame Relay solves the problem of split horizon.
- 1647.1.14 Configure Frame Relay.
- 1647.1.15 Utilize knowledge gained in the Threaded Case Study.

Routing and Switching

WVEIS Code 1649

This is the third of four courses designed to provide students with classroom and laboratory experience in the computer-networking field. In this course students will learn about switches, Local Area Networks (LAN's), and Virtual Local Area Networks (VLAN's) design, configuration and maintenance.

Standard 1: Demonstrate knowledge, design, configuration and maintenance of switches, Local Area Networks and Virtual Local Area Networks. (1649.S.1)

Local Area Networks and Virtual Local Area Networks Objectives

Students will:

- 1649.1.1 Explain The Concept Of Congestion In Switched Ethernet LAN's.
- 1649.1.2 Design A Plan That Improves LAN Performance Through The Use Of Switches.
- 1649.1.3 Differentiate Between Symmetric And Asymmetric Switching.
- 1649.1.4 Define And Explain The Functions Of A VLAN.
- 1649.1.5 Setup A VLAN By Configuring The Switch.
- 1649.1.6 Explain The Operation Of VLAN Network Security.
- 1649.1.7 List And Summarize The IEEE 802 VLAN Standards.
- 1649.1.8 Define The LAN Design Goals.
- 1649.1.9 Design A LAN And Justify The Decisions Made On Selected Criteria.
- 1649.1.10 Demonstrate IGRP Configuration Tasks.
- 1649.1.11 Compare And Contrast Routing Versus Routed Protocols.
- 1649.1.12 Compare: Distance Vector, Hybrid, And Link State Routing Protocols.
- 1649.1.13 Differentiate Between Static Routes, Default Routes And Dynamic Routes.
- 1649.1.14 Describe The Purpose Of Standard Access Lists And Extended Access Lists.
- 1649.1.15 Create A List Of Deny/Permit Test.
- 1649.1.16 Create An IP Access List Using: Wildcard Mask Bits, Wildcard Any & Host.
- 1649.1.17 Discuss The Difference Between Novell IPX And Other Networks.
- 1649.1.18 Configure A Novell Network Using Novell IPX Addresses.

Routing Theory and Router Technologies

WVEIS Code 1651

This is the second of four courses designed to provide students with classroom and laboratory experience in the computer-networking field. This course will focus on the role of the router in networks. Students will study routing protocols, router configuration and various router commands.

**Standard 1: Perform routing protocols, router configuration and various router commands.
(1651.S1)**

Routing Protocols, Router Configuration and Various Router Commands Objectives

Students will:

- 1651.1.1 Identify the functions of the TCP/IP transport-layer Protocols.
- 1651.1.2 Manage the configuration files from the privileged exec mode on a router.
- 1651.1.3 Identify the functions performed by ICMP.
- 1651.1.4 Control router passwords, identification and enable banners.
- 1651.1.5 Identify the main Cisco IOS software commands for router startup.
- 1651.1.6 Check an initial configuration using the setup command.
- 1651.1.7 Log into a router in both user and privileged modes.
- 1651.1.8 Be able to use the context-sensitive help facility on the router.
- 1651.1.9 Use command history and editing features.
- 1651.1.10 List the commands to load Cisco IOS software from flash memory or ROM.
- 1651.1.11 Prepare to load, upgrade and load a Cisco IOS software image.
- 1651.1.12 Identify the parts in a specific protocol address.
- 1651.1.13 Become aware of problems encountered with topology changes.
- 1651.1.14 Configure IP addresses and subnet masks.
- 1651.1.15 Prepare the initial configuration for a router and enable IP.
- 1651.1.16 Add the RIP routing protocol to the router configuration.
- 1651.1.17 Add the IGRP routing protocol to the router
- 1651.1.18 Configure standard access lists to filter IP traffic.
- 1651.1.19 Configure extended access lists to filter IP traffic.

Web Course Design

WVEIS Code 1653

This course will teach students to use the web design elements of a professional web page software package as well as various software programs that support that package.

Standard 1: Use the CISCO fundamentals of web design. (1653.S.1)

CISCO Fundamentals of Web Design Objectives

Students will:

- 1653.1.1 Demonstrate an understanding of the basic design principles for a web page.
- 1653.1.2 Demonstrate an understanding of file formats related to creating web pages.
- 1653.1.3 Create basic HTML code using a text editor.
- 1653.1.4 Create a personal web page in HTML code using a text editor.
- 1653.1.5 Use an HTML editor to create and edit HTML code.
- 1653.1.6 Create and edit images for web pages using digital cameras and various photography and graphic software programs.
- 1653.1.7 Optimize images for the web.
- 1653.1.8 Create vector and bitmap graphics.
- 1653.1.9 Create .SWF and .GIF animations.
- 1653.1.10 Create animations with DHTML.
- 1653.1.11 Create navigational elements.
- 1653.1.12 Edit and optimize video for web delivery.
- 1653.1.13 Create web pages with interactive elements.
- 1653.1.14 Demonstrate the use of accessibility.
- 1653.1.15 Demonstrate the use of usability.
- 1653.1.16 Create and use tables, hyperlinks, and frames.
- 1653.1.17 Create and use Cascading Style Sheets.
- 1653.1.18 Demonstrate site management skills.
- 1653.1.19 Create a website for the course project.

Standard 2: Use ethics in web page design. (1653.S.2)

Web Page Design Objective

Students will:

- 1653.2.1 Practice ethic behavior when developing and using web pages and the Internet.

Blueprint Reading

WVEIS Code 1661

This course will introduce students to basic blueprint reading fundamentals, including symbols, orthographic projections, isometric and sketching techniques, dimensioning, title blocks and common practices.

Standard 1: Determine requirements from construction drawings and floor plans, draw office and field sketches and identify and interpret basic civil, mapping and architecture symbols. (1661.S.1)

Construction Drawings and Floor Plans Objectives

Students will:

- 1661.1.1 Identify alphabet of lines and mapping symbols.
- 1661.1.2 Describe location of six (6) most commonly used views with orthographic projections.
- 1661.1.3 Demonstrate isometric and plane view sketching techniques.
- 1661.1.4 Complete statements concerning methods of dimensioning.
- 1661.1.5 Differentiate between notes and specifications.
- 1661.1.6 Analyze information from plan views and title blocks.
- 1661.1.7 Explain function and use of typical drawings.
- 1661.1.8 Read a drawing and write a bill of materials.
- 1661.1.9 Draw working sketches using field notes, dimensions and specifications.
- 1661.1.10 Identify drawing symbols and draw samples of each.
- 1661.1.11 Describe common blueprint abbreviations.
- 1661.1.12 Interpret abbreviations for common construction practices.
- 1661.1.13 Use print machine to make working copies of original drawings.

Fundamentals of Collision Repair Technology

WVEIS Code 1671

This course will introduce students to the basic fundamentals of Collision Repair Technology. Students will become familiar with tools and materials for basic analysis and damage repair; general occupational information and computer applications.

Standard 1: Identify, explore, and evaluate career opportunities related to automotive technology.(1671.S.1)

Automotive Technology Objectives

Students will:

- 1671.1.1 Describe a variety of careers related to automotive technology, and the training necessary to be successful in those careers.
- 1671.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of automotive technology.
- 1671.1.3 Identify sources of information about careers in automotive technology.

Standard 2: Demonstrate knowledge of basic safety rules, equipment and hazardous waste disposal as it relates to collision repair technology. (1671.S.2)

Collision Repair Technology Objectives

Students will:

- 1671.2.1 Recognize and follow general collision repair lab safety guidelines, including the wearing of appropriate protective equipment.
- 1671.2.2 Demonstrate the proper selection and use of fire extinguishers.
- 1671.2.3 Identify personal health and safety hazards according to OSHA guidelines.
- 1671.2.4 Identify and properly dispose of hazardous waste according to EPA regulations.
- 1671.2.5 Inspect air makeup and exhaust systems to insure proper filtering and ventilation. (intake filters, exhaust filters, fan, and other mechanical components of the system).
- 1671.2.6 Select spray mask and inspect to insure proper fit and operation; inspect condition of the mask filters and other components.

Standard 3: Analyze damage and prepare a vehicle for repairs. (1671.S.3)

Vehicle Repair Objectives

Students will:

- 1671.3.1 Review damage report, and analyze damage to determine appropriate methods for overall repair.
- 1671.3.2 Remove damaged or necessary inside and outside trim and moldings.
- 1671.3.3 Remove damaged, non-structural body panels and components that may interfere with or be damaged during repair.
- 1671.3.4 Remove all vehicles mechanical and electrical components that may interfere with or be damaged during repair; replace after repair.
- 1671.3.5 Protect panels and parts adjacent to repair area to prevent damage.
- 1671.3.6 Remove dirt, grease, and wax from those areas to be repaired.
- 1671.3.7 Remove dirt, corrosion protection, under coatings, sealers, and other protective coatings necessary to perform repairs to structural areas.
- 1671.3.8 Remove repairable plastics and other parts that are recommended for off-car repair.

Standard 4: Metal finish a damaged panel to its original form. (1671.S.4)

Metal Finish Objectives

Students will:

- 1671.4.1 Grind the paint from the damaged area of body panel.
- 1671.4.2 Pick and file the damaged area of a body panel to eliminate surface irregularities.
- 1671.4.3 Disc sand the repaired body panel to produce final smoothness.

Standard 5: Mix and apply body fillers. (1671.S.5)

Body Filler Objectives

Students will:

- 1671.5.1 Mix and apply plastic body filler and cheese-grate during curing.
- 1671.5.2 Rough sand cured plastic body filler to contour; finish sand.
- 1671.5.3 Featheredge repaired areas.

Standard 6: Inspect, adjust, repair, or replace moveable glass and hardware. (1671.S.6)

Glass and Hardware Objectives

Students will:

- 1671.6.1 Inspect, adjust, repair or replace window regulators, run channels, glass, power mechanisms, and related controls.
- 1671.6.2 Repair or replace all power-driven accessories and related controls (including electrically-heated glass).
- 1671.6.3 Diagnose and repair water leaks, dust leaks, and wind noises; inspect, repair and replace weather stripping.
- 1671.6.4 Inspect, repair or replace, and adjust removable, manually-operated, roof panel, and hinges, latches, guides handles, retainer, and controls of sun roofs.

Mechanical and Electrical Components

WVEIS Code 1673

This course will introduce students to the entry-level skills necessary in mechanical and electrical repairs as they apply to collision repair technology.

Standard 1: Inspect and service supplemental airbag restraint systems. (1673.S.1)

Airbag Restraint System Objectives

Students will:

- 1673.1.1 Disarm airbag system in accordance with manufacturer's procedures.
- 1673.1.2 Inspect and replace damaged sensors and wiring in accordance with manufacturer's procedures; insure proper sensor orientation.
- 1673.1.3 Verify that system is armed and operational in accordance with manufacturer's procedures.
- 1673.1.4 Remove and replace non-deployed airbag; observe manufacturer's safety procedures.
- 1673.1.5 Use fault codes to diagnose and repair airbag system.

Standard 2: Inspect and service passive restraint systems.

Passive Restraint System Objectives

Students will:

- 1673.2.1 Remove and replace seatbelt and shoulder harness assembly in accordance with manufacturer's procedures.
- 1673.2.2 Inspect anchorages for deformation; repair as required.
- 1673.2.3 Verify proper operation of seatbelt in accordance with manufacturer's procedures.
- 1673.2.4 Remove and replace track and drive assembly, lap retractor, torso retractor assembly, inboard buckle-lap retractor, knee blocker, etc.

Standard 3: Service active restraint systems. (1673.S.3)

Active Restraint System Objectives

Students will:

- 1673.3.1 Remove and replace seatbelt and shoulder harness assembly in accordance with manufacturer's procedures.
- 1673.3.2 Inspect anchorage for deformation; repair as required.

Standard 4: Identify, inspect, and repair suspension and steering systems. (1673.S.4)

Repair Suspension and Steering Systems Objectives

Students will:

- 1673.4.1 Inspect and replace rack and pinion steering gear, inner tie rod ends (sockets), and bellows boots.
- 1673.4.2 Remove and replace power steering gear (non-rack and pinion type).
- 1673.4.3 Remove and replace power steering pump; inspect pump mounts.
- 1673.4.4 Remove, replace, and adjust tie rods, tie rod sleeves, clamps, and tie rod ends (sockets).
- 1673.4.5 Remove and replace strut rods and bushings on long and short arm suspension systems.
- 1673.4.6 Remove and replace upper and lower ball joints on short and long arm suspension systems.
- 1673.4.7 Remove and replace steering knuckle/spindle assemblies.
- 1673.4.8 Remove and replace front and rear suspension components.
- 1673.4.9 Remove and replace shock absorbers.
- 1673.4.10 Diagnose vehicle wandering, pulling hard steering, bump steering, memory steering, torque

- steering, and steering return problems; determine needed repairs.
- 1673.4.11 Check and adjust caster on suspension systems with a caster adjustments.
 - 1673.4.12 Measure vehicle ride height; determine needed repairs.
 - 1673.4.13 Center steering wheel.
 - 1673.4.14 Diagnose tire wear patterns; determine needed repairs.

Standard 5: Inspect and service air conditioning systems. (1673.S.5)

Air Conditioning System Objectives

Students will:

- 1673.5.1 Inspect, repair and replace air conditioner system hoses, lines, fittings, and related components (compressor, condenser, evaporator).
- 1673.5.2 Recharge air conditioner according to manufacturer's recommendations.

Standard 6: Inspect, adjust, and repair hydraulic brake systems. (1673.S.6)

Hydraulic Brake System Objectives

Students will:

- 1673.6.1 Inspect brake lines and fittings for leaks, dents, kinks, rust, cracks or wear; tighten loose fittings and supports; replace brake lines (double flare and ISO types), hoses, fittings, and supports.
- 1673.6.2 Inspect flexible brake hoses for leaks, kinks, cracks, bulging, or wear; tighten loose fittings and supports.
- 1673.6.3 Select, handle, store, and install brake fluids, (including silicone fluids).
- 1673.6.4 Bleed (manual, pressure, vacuum, or surge) and/or flush hydraulic brake system, in accordance with manufacturer's procedures.
- 1673.6.5 Pressure test brake hydraulic system by applying heavy force to pedal, hold for 15 seconds and inspect for leaks.
- 1673.6.6 Adjust brake shoes and reinstall brake drums or drum/hub assemblies and wheel bearings.
- 1673.6.7 Reinstall wheel, torque lug nuts, and make final checks for adjustments.
- 1673.6.8 Remove and replace caliper assembly.
- 1673.6.9 Clean and inspect; caliper mountings and slides for wear and damage.
- 1673.6.10 Check parking brake system operation.

Standard 7: Inspect and service cooling systems. (1673.S.7)

Cooling Systems Objectives

Students will:

- 1673.7.1 Inspect and replace engine cooling system hoses and belts.
- 1673.7.2 Drain, flush and refill system with proper coolant and level or protection.
- 1673.7.3 Inspect, remove and replace radiator, pressure cap, coolant recovery system, and water pump.
- 1673.7.4 Remove and replace fan, fan clutch (both electrical and mechanical), and fan shroud.

Standard 8: Analyze, repair, and replace electrical components. (1673.S.8)

Electrical Components Objectives

Students will:

- 1673.8.1 Check voltages in electrical wiring circuits with a voltmeter; determine needed repairs.
- 1673.8.2 Check continuity and resistance in electrical wiring circuits and components with an ohmmeter; determine needed repairs.
- 1673.8.3 Check electrical wiring circuits with jumper wires; determine needed repairs.

- 1673.8.4 Inspect, test, and replace fusible links, circuit breakers, and fuses.
- 1673.8.5 Perform battery state-of-charge in accordance with manufacturers recommendations.
- 1673.8.6 Identify programmable electrical/electronic components; record data from reprogramming before disconnecting battery.
- 1673.8.7 Inspect, clean, and repair or replace battery cables, connectors, and clamps.
- 1673.8.8 Inspect, adjust, and replace alternator drive belts, pulleys, and fans.
- 1673.8.9 Remove and replace alternator.
- 1673.8.10 Remove and replace headlights, parking/taillights, stop lights, flashers, turn-signals and backup lights; check operation.
- 1673.8.11 Inspect, replace, and aim headlights/bulbs.
- 1673.8.12 Check operation of retractable headlight assembly.
- 1673.8.13 Remove and replace motors, switches, relays, connectors, and wires of retractable headlight assembly circuits.
- 1673.8.14 Inspect, test, and repair or replace switches, relays, bulbs, sockets, connectors, and wires of all light circuits including four-wire taillight systems.

Non-Structural Analysis And Damage Repair

WVEIS Code 1675

This course will introduce students to the entry-level skills necessary in non-structural analysis and repair of metal and composite parts.

Standard 1: Determine the extent of damage, plan method, and make outer body panel repairs, replacement and adjustments. (1675.S.1)

Outer Body Panel Repair Objectives

Students will:

- 1675.1.1 Determine the extent of the direct and indirect damage, the direction of impact, and plan the methods and order of repair.
- 1675.1.2 Determine the extent of damage to aluminum body panels; repair; weld or replace in accordance with manufacturer's specifications.
- 1675.1.3 Remove, replace and align hood, hood hinges, and hood latch.
- 1675.1.4 Remove, replace and align deck lid, lid hinges, and lid latch.
- 1675.1.5 Remove and replace doors, tailgates, hatches, lift gates, latches assemblies and hinges.
- 1675.1.6 Remove, replace and align bumpers, reinforcements, guards, isolators, and mounting hardware.
- 1675.1.7 Check and adjust clearances of front fenders, headers, and other panels.
- 1675.1.8 Check door hinge condition; check door frames for proper fit; check and adjust door clearances (where adjustable) along quarter panel, door, rocker panel, fender, and top.
- 1675.1.9 Repair or replace door skins and intrusion beams in accordance with vehicle manufacturer's specification.
- 1675.1.10 Straighten roughed out contours of damaged panel to a surface condition for body filling or metal finishing using power and hand tools.
- 1675.1.11 Weld cracked or torn steel body panels; re-weld broken welds.
- 1675.1.12 Heat shrink stretched panel areas back to contour, and restore contour with heat.
- 1675.1.13 Cold shrink stretched panel areas back to cover, and apply protective coatings and sealants.

Standard 2: Identify and repair various types of automotive plastics. (1675.S.2)

Automotive Plastics Objectives

Students will:

- 1675.2.1 Identify types of plastics to be repaired and their repair procedures.
- 1675.2.2 Repair rigid and flexible plastic parts with urethane or epoxy adhesives and fiberglass reinforcements according to vehicle and industry specifications.
- 1675.2.3 Remove damaged areas from rigid exterior sheet molded compound (SMC) panels and repair with partial panel installation.
- 1675.2.4 Retexture and refinish interior plastic parts.
- 1675.2.5 Repair vinyl-clad urethane foam parts.
- 1675.2.6 Reshape and shrink flexible exterior plastic parts.

Structural Analysis and Damage Repair

WVEIS Code 1677

This course will introduce students to the entry-level skills necessary in structural analysis and repair of frame and unibody type vehicles using welding techniques, measuring equipment and frame machines.

Standard 1: Identify weld types, joints, welder setup and analyze weld defects. (1677.S.1)

Weld Objectives

Students will:

- 1677.1.1 Identify weldable and non-weldable materials used in autobody components.
- 1677.1.2 Determine correct electrode wire type, diameter and gas to be used in specific welding situations.
- 1677.1.3 Determine the correct type of weld and weld joint (continuous, stitch/pulse, tack, plug, etc.) for each specific weld repair.
- 1677.1.4 Identify safety considerations: eye protection, proper clothing, shock hazards, dangerous fumes, etc. before beginning welding operation.
- 1677.1.5 Set up and tune the welder in accordance with manufacturers' instructions; clean the gun and gas nozzle as required.
- 1677.1.6 Protect computers and other electronic modules from possible welding damage.
- 1677.1.7 Clean the metal to be welded; assure good metal fit through preparation and clamping.
- 1677.1.8 Use the proper angle of the gun to the joint, and the direction of gun travel for the type of weld being made in the flat, horizontal, vertical, and overhead positions.
- 1677.1.9 Identify cause(s) of splits and sputters, burn through, lack of penetration, cracks in metal, porosity, incomplete fusion, excessive spatter, distortion, and waviness of bead; make necessary adjustments.
- 1677.1.10 Identify cause(s) of contact tip burn-back and failure of wire to feed; make necessary adjustments.

Standard 2: Diagnose, measure and repair unibody and framed damage. (1677.S.2)

Unibody and Framed Damage Objectives

Students will:

- 1677.2.1 Diagnose and measure structural damage using tram and centering gauges according to manufacturer's specifications.
- 1677.2.2 Diagnose and measure unibody damage using a dedicated (fixture) or universal measuring system compared to specification.
- 1677.2.3 Attach body anchoring devices.
- 1677.2.4 Straighten and align all types of frame damage on a typical frame type vehicle (mash, sag, sideway, twist, kickup, diamond).
- 1677.2.5 Straighten and align structural panels on unibody type vehicles (roof, cowl, pillars, rockers, front and rear sections).
- 1677.2.6 Apply cold and heat stress relief methods and weld in accordance with vehicle manufacturer's recommendations.
- 1677.2.7 Remove and replace damaged frame horns, side rails, cross members and structural steel body panels in accordance with vehicle manufacturers recommendation/industry standards.
- 1677.2.8 Perform structural panel sectioning in accordance with vehicle manufacturers specifications/industry standards.
- 1677.2.9 Restore corrosion protection to repaired structural areas in accordance with vehicle manufacturers specifications.

Standard 3: Remove and replace fixed glass using manufacturers procedures. (1677.S.3)

Fixed Glass Objectives

Students will:

- 1677.3.1 Remove and replace fixed glass (heated and non-heated) and modular glass using manufacturers procedures.
- 1677.3.2 Remove and replace butyl-retained and urethane-retained modular glass with mechanical fasteners.
- 1677.3.3 Determine when to use the partial cutout or the full cutout method of repair when replacing a windshield.

Surface Preparation and Refinishing

WVEIS Code 1679

This course will introduce students to the entry-level skills necessary in the surface preparation and refinishing of vehicles using various refinishing systems.

Standard 1: Prepare a surface for refinishing using proper safety precautions. (1679.S.1)

Surface Safety Precautions Objectives

Students will:

- 1679.1.1 Remove and store trim and molding.
- 1679.1.2 Remove dirt, wax, road grime, and special coatings from area to be refinished. and from adjacent surfaces; wash entire vehicle.
- 1679.1.3 Inspect and identify type of finish and surface condition; develop a plan for refinishing.
- 1679.1.4 Chemically and mechanically remove paint finish where necessary.
- 1679.1.5 Featheredge and wet sand area to be refinished.
- 1679.1.6 Identify type of metal and apply suitable metal treatments.
- 1679.1.7 Mask trim and other areas that will not be refinished.
- 1679.1.8 Mix primer, primer-surface, or primer-sealer; spray onto surface of repaired area according to parts manufacturer's specifications.
- 1679.1.9 Dry or wet block sand areas to which primer-surface has been applied.
- 1679.1.10 Compound or prepare around the edge of the repaired area to be refinished.
- 1679.1.11 Blow dust from entire vehicle including cracks and moldings in the area to be refinished.
- 1679.1.12 Clean area to be refinished with a proper solvent.
- 1679.1.13 Remove, with a tack rag, any dust or lint particles from the area to be refinished.
- 1679.1.14 Apply recommended sealer to the area being refinished according to manufacturer's specifications.
- 1679.1.15 Scuff sand to remove nibs or over spray from a sealer.

Standard 2: Inspect, clean and operate spraying equipment. (1679.S.2)

Spraying Equipment Objectives

Students will:

- 1679.2.1 Inspect, clean, and determine condition and adequacy of spray guns and related equipment (air hose, regulator, air lines, and compressor).
- 1679.2.2 Check and adjust air pressure on the spray gun (includes siphon-feed, and gravity-feed).
- 1679.2.3 Adjust spray gun using fluid and pattern control valves.
- 1679.2.4 Check and adjust high volume, low pressure spraying equipment.

Standard 3: Mix, match, and apply various refinishing systems. (1679.S.3)

Refinishing Systems Objectives

Students will:

- 1679.3.1 Determine type and color of paint on vehicle.
- 1679.3.2 Shake, stir, thin or reduce, or strain paint according to manufacturer's recommendations.
- 1679.3.3 Select proper air pressure and spraying technique (gun arc, gun angle, gun distance, gun speed, and spay pattern overlap) for finish being applied.
- 1679.3.4 Apply selected product on test panel in accordance with manufacturers recommendations.
- 1679.3.5 Apply acrylic enamel, urethane and urethane basecoat/clearcoat for spot and panel blending, and overall refinishing.
- 1679.3.6 Check for color matching of all applied finishes.

- 1679.3.7 Select and perform sanding, buffing, and polishing processes for finish.
- 1679.3.8 Identify the types of rigid and flexible plastic parts to be finished; determine correct materials and refinishing procedures.
- 1679.3.9 Apply finish coat to rigid and flexible plastic parts.
- 1679.3.10 Clean, condition, and refinish vinyl (e.g., upholster, dashes, and tops).
- 1679.3.11 Clean and detail vehicle after complete refinishing.
- 1679.3.12 Apply decals, transfers, tapes, woodgrains, pinstripes (painted and taped), etc.

Standard 4: Identify and solve paint application problems and finish defects, and determine cause and cure. (1679.S.4)

Paint Application Objectives

Students will:

- 1679.4.1 Identify, prevent and correct all paint application problems that occur in refinishing operations.

Fundamentals of Broadcasting (Radio & TV)

WVEIS Code 1681

This course will introduce students to the basic fundamentals needed to support broadcast managers in the production and broadcasting of materials or programs. Students will become familiar with the equipment, processes, and procedures used in producing and making radio and television broadcasts.

Standard 1: Identify, explore, and evaluate career opportunities related to radio and television production. (1681.S.1)

Radio and Television Production Objectives

Students will:

- 1681.1.1 Describe a variety of careers related to radio and television production, and the training necessary to be successful in those careers.
- 1681.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of radio and television production.
- 1681.1.3 Identify sources of information about careers in radio and television production.
- 1681.1.4 Describe the effect that computers and automation have and will have on the broadcast industry.

Standard 2: Identify elements of radio broadcast equipment and procedures. (1681.S.2)

Radio Broadcast Objectives

Students will:

- 1681.2.1 Identify safety rules for operating radio broadcasting equipment.
- 1681.2.2 Define uses for electronic equipment (microphones, recorders, etc.) and proper care while operating.
- 1681.2.3 Demonstrate efficiency and accuracy while performing cue up and playing of records, compact disks, cassettes, open reel tapes and computerized audio files.
- 1681.2.4 Operate audio console and identify proper modulations levels.

Standard 3: Identify elements of television broadcast equipment and procedures. (1681.S.3)

Television Broadcast Objectives

Students will:

- 1681.3.1 Identify safety rules for operating television broadcasting equipment.
- 1681.3.2 Define uses for television broadcasting electronic equipment (microphones, cameras, etc.) and proper care while operating.
- 1681.3.3 Apply knowledge of camera shots and angles.
- 1681.3.4 Illustrate proper way to hold scripts and props.
- 1681.3.5 Identify problems of microphone and camera consciousness, and ways to overcome camera fright.
- 1681.3.6 Recognize and perform hand signals used in television broadcasting.
- 1681.3.7 Identify various types of video equipment.
- 1681.3.8 Demonstrate the ability to make minor repairs to lighting such as replacing defective bulbs, cables and equipment.
- 1681.3.9 Illustrate proper posture for on-air performance.
- 1681.3.10 Prepare and demonstrate use of cue cards.
- 1681.3.11 Select and demonstrate proper use of "hitting marks".

Radio Broadcast Applications

WVEIS Code 1683

This course will provide students with the knowledge to perform, either in a live or mock setting, a radio broadcast.

Standard 1: Prepare material for on-air presentations. (1683.S.1)

Air Presentations Objectives

Students will:

- 1683.1.1 Describe FCC rules and regulations relating to radio broadcasting.
- 1683.1.2 Identify various news services, their differences and how they are used.
- 1683.1.3 Interpret wire service copy.
- 1683.1.4 Describe the importance of objectivity in story writing to avoid bias.
- 1683.1.5 Demonstrate proper conversational and broadcast news style writing skills.
- 1683.1.6 Read and use various editing techniques to rewrite scripts.
- 1683.1.7 Follow format clock and time news reports and programs correctly.
- 1683.1.8 Set up and make entries in an operating log and a program log.
- 1683.1.9 Write and produce a newscast.

Standard 2: Demonstrate basic skills for delivering on-air productions. (1683.S.2)

Basic Skills On Air Productions Objectives

Students will:

- 1683.2.1 Identify problems of voice quality and ways to overcome "mike fright".
- 1683.2.2 Interpret and perform hand signals used in radio broadcasting.
- 1683.2.3 Speak clearly and in conversational style when delivering a broadcast.
- 1683.2.4 Read, in an effective manner, copy written by someone else.
- 1683.2.5 Apply ad-libbing techniques.

Standard 3: Demonstrate advanced skills in radio production. (1683.S.3)

Advanced Skills in Radio Production Objectives

Students will:

- 1683.3.1 Clean magnetic heads on tape equipment and bulk erase tapes.
- 1683.3.2 Write a commercial or public service announcement.
- 1683.3.3 Preview, critique, and select segments for possible airing.
- 1683.3.4 Determine story priority for a news broadcast.
- 1683.3.5 Conduct and perform a sports interview, a live interview, and a remote broadcast.
- 1683.3.6 Prepare and broadcast sports and news commentaries and editorials.
- 1683.3.7 Design and execute special effects.
- 1683.3.8 Conduct market research.

Television Production Applications

WVEIS Code 1685

This course will provide students with an entry-level understanding of the components of television broadcasting.

Standard 1: Operate television broadcast equipment. (1685.S.1)

Operate Television Broadcast Equipment Objectives

Students will:

- 1685.1.1 Take a level.
- 1685.1.2 Adjust camera control unit.
- 1685.1.3 Set up lights for production purposes.
- 1685.1.4 Operate a switcher, an audio board, a video recorder and a teleprompter.
- 1685.1.5 Switch studio lights on during broadcast following script or instructions from director.

Standard 2: Utilize proper television techniques to develop quality productions. (1685.S.2)

Quality Productions Objectives

Students will:

- 1685.2.1 Use various script formats.
- 1685.2.2 Set up equipment and conduct a one-person field interview.
- 1685.2.3 Perform a live interview.
- 1685.2.4 Assemble a videotape "package" (studio and field types).
- 1685.2.5 Assign staff personnel to operate and direct broadcasting activities.
- 1685.2.6 Apply ad-libbing techniques.
- 1685.2.7 Prepare and broadcast sports, news, commentaries, and editorials.
- 1685.2.8 Properly apply makeup for television broadcasting.
- 1685.2.9 Design and construct a set.
- 1685.2.10 Write and produce a newscast.

Standard 3: Demonstrate television production editing skills. (1685.S.3)

Editing Skills Objectives

Students will:

- 1685.3.1 Design and use electronic graphics.
- 1685.3.2 Operate a time base corrector (TBC)
- 1685.3.3 Perform electronic and manual edits.
- 1685.3.4 Read, edit and rewrite scripts.
- 1685.3.5 Time news reports correctly, and edit if necessary.
- 1685.3.6 Set up and make entries in an operating log and a program log.

Standard 4: Demonstrate television production troubleshooting skills and special techniques. (1685.S.4)

Skills and Special Techniques Objectives

Students will:

- 1685.4.1 Identify common symptoms of head clogs and tracking problems.
- 1685.4.2 Apply news judgment to field interviewing.
- 1685.4.3 Design and perform special effects.
- 1685.4.4 Prepare an instruction sheet or manual on video taping filed stories (both storyboard and script).

Broadcast Management

WVEIS Code 1687

This course is designed to provide students with knowledge and understanding of management practices in media operations. It will introduce students to the requirements needed to manage personnel and programming in the radio and television industries.

Standard 1: Programming (1687.S.1)

The students will learn programming practices and pressures.

Programming Objectives

The students will:

- 1687.1.1 Describe the typical prime time audience for which television executives aim.
- 1687.1.2 Define the LOP (Least Objectional Principle) used to determine television programming needs.
- 1687.1.3 Describe how television is required to serve the public interest.
- 1687.1.4 Develop an understanding of programming tactics including hamlocking, counter programming, blunting and bridging.

Standard 2: Storyboard (1687.S.2)

The students will study program development from storyboard to final episode.

Storyboard Objectives

The students will:

- 1687.2.1 Describe the steps required to define a television program.
- 1687.2.2 Identify the purpose of the storyboard for a program.
- 1687.2.3 Write a script for a television program.
- 1687.2.4 Participate in production planning including topics of crew, cast, locations, equipment and supplies.

Standard 3: Social Issues on Television (1687.S.3)

The students will analyze social issues in television.

Social Issues on Television Objectives

The students will:

- 1687.3.1 Describe the libertarian theory of broadcasting.
- 1687.3.2 Describe the social responsibility theory of broadcasting.
- 1687.3.3 Explain how violence on television affects viewers.
- 1687.3.4 Explain the relationship of advertising and television programming as it relates to children.
- 1687.3.5 Explain how television can create bias against women and minorities.

Standard 4: Community Needs (1687.S.4)

The students will determine and participate in techniques to ascertain the community needs.

Community Needs Objectives

The students will:

- 1687.4.1 Develop a survey to determine community needs.
- 1687.4.2 Determine the community needs in regard to broadcasting by circulating the survey throughout the local community.

Standard 5: Ratings Systems (1687.S.5)

The students will identify and evaluate ratings systems in the broadcast industry.

Ratings Systems Objectives

The students will:

1687.5.1 Describe ratings systems and how they affect programming.

1687.5.2 Describe how ratings affect advertising sales.

Standard 6: Promotions (1687.S.6)

The students will gain information on promotional practices to build the audience.

Promotions Objectives

The students will:

1687.6.1 Define cross promotion and explain how it will build audience participation.

1687.6.2 Describe "Off Air" promotion and how it helps to build audience participation.

Producing Live Television

WVEIS Code 1689

This course is designed to prepare students for entry-level positions in the television industry. Students will be introduced to the requirements for producing live television news and other live programs including talk shows, game shows, variety shows and sports events broadcasts.

Standard 1: Producing (1689.S.1)

The students will study the art of producing for live television.

Producing Objectives

The students will:

- 1689.1.1 Identify the producer's role in live television.
- 1689.1.2 Recognize the organizational aspects necessary to be a producer.
- 1689.1.3 Describe business aspects required of the producer.

Standard 2: Directing (1689.S.2)

The students will review information on directing for content, for communication and for performance.

Directing Objectives

The students will:

- 1689.2.1 Define the role of the director.
- 1689.2.2 Describe techniques available to communicate with the audience.
- 1689.2.3 Guide on screen talent in shaping their performance.

Standard 3: Newsroom (1689.S.3)

The students will develop an understanding of newsroom structure and operations.

Newsroom Objectives

The students will:

- 1689.3.1 Gain knowledge concerning newsroom taxonomy.
- 1689.3.2 Recognize staffing requirements to present programs live.
- 1689.3.3 Describe the relationship between studio personnel and field personnel.

Standard 4: Broadcast (1689.S.4)

The students will participate in mock live broadcast performances of television news programs.

Broadcast Objectives

The students will:

- 1689.4.1 Participate as a director.
- 1689.4.2 Participate as an anchor.
- 1689.4.3 Participate as an audio technician.
- 1689.4.4 Participate as an video technician.
- 1689.4.5 Participate as a lighting technician.
- 1689.4.6 Participate as a master board control operator.
- 1689.4.7 Participate as a field reporter.

Standard 5: Technical Requirements (1689.S.5)

The students will be introduced to the technical requirements for producing live in studio television programming.

Technical Requirements Objectives

- 1689.5.1 Describe electronic news gathering.
- 1689.5.2 Identify available resources to improve the capability of ENG.
- 1689.5.3 Describe how the presentation of news programming can affect the local community.

Standard 6: Television Performance (1689.S.6)

The students will learn about maintaining continuity in the television performance.

Television Performance Objectives

The students will:

- 1689.6.1 Describe how format relates to continuity in television.
- 1689.6.2 Describe established formats for game shows.
- 1689.6.3 Describe established formats for variety shows.
- 1689.6.4 Develop a format for live sports broadcasting.

Standard 7: Electronic and Satellite News Gathering (1689.S.7)

The students will study techniques available to put live news on the air from remote locations utilizing ENG (Electronic News Gathering) and SNG (Satellite News Gathering).

Electronic and Satellite News Gathering Objectives

The students will:

- 1689.7.1 Explain about the use of microwave equipment to provide live video and audio feeds directly to the news room from remote locations.
- 1689.7.2 Explain how to utilize satellite equipment in the production of television news.

A+ Service Technician

WVEIS Code 1701

This course will provide the knowledge and skills to identify, configure and upgrade microcomputer modeling and peripherals, safety and preventive maintenance procedures. Also included will be specific terminology, categories and principles of motherboard, procedures and memory in microcomputer systems. Diagnosing and troubleshooting common and system malfunctions and networking concepts will be included.

Standard 1: Perform installation, configurations, and upgrading of computers. (1701.S.1)

Computers Objectives

Students will:

- 1701.1.1 Identify basic terms, concepts, and functions of system modules, including how each module should work during normal operation and during the boot process.
- 1701.1.2 Identify basic procedures for adding and removing field replaceable modules for both desktop and portable systems.
- 1701.1.3 Identify available IRQ's, DMA's, and I/O addresses and procedures for device installation and configuration.
- 1701.1.4 Identify common peripheral ports, associated cabling, and their connectors.
- 1701.1.5 Identify proper procedures for installing and configuring IDE/EIDE devices.
- 1701.1.6 Identify proper procedures for installing and configuring SCSI devices.
- 1701.1.7 Identify proper procedures for installing and configuring peripheral devices.
- 1701.1.8 Identify hardware methods of upgrading system performance, procedures for replacing basic subsystem components, unique components and when to use them.

Standard 2: Demonstrate diagnosing and troubleshooting procedures. (1701.S.2)

Procedures Objectives

Students will:

- 1701.2.1 Identify common symptoms and problems associated with each module and how to troubleshoot and isolate the problems.
- 1701.2.2 Identify basic troubleshooting procedures and how to elicit problem symptoms from customers.

Standard 3: Perform preventative maintenance procedures. (1701.S.3)

Preventative Maintenance Procedures Objectives

Students will:

- 1701.3.1 Identify common symptoms and problems associated with each module and how to troubleshoot and isolate the problems.
- 1701.3.2 Identify basic troubleshooting procedures and how to elicit problem symptoms from customers.

Standard 4: Identify the Motherboard/Processors/Memory parts of the computer. (1701.S.4)

Parts of the Computer Objectives

Students will:

- 1701.4.1 Distinguish between the popular CPU chips in their basic characteristics.
- 1701.4.2 Identify the categories of RAM (Random Access Memory) terminology, their locations, and physical characteristics.
- 1701.4.3 Identify the most popular type of motherboards, their components, and their architecture (bus structures and power supplies).

- 1701.4.4 Identify the purpose of CMOS (Complementary Metal-Oxide Semiconductor), what it contains and how to change its basic parameters.

Standard 5: Demonstrate knowledge of various printers. (1701.S.5)

Printers Objectives

Students will:

- 1701.5.1 Identify basic concepts, printer operations and printer components.
1701.5.2 Identify care and service techniques and common problems with primary printer types.

Standard 6: Demonstrate basic networking knowledge. (1701.S.6)

Basic Networking Objectives

Students will:

- 1701.6.1 Identify basic networking concepts, including how a network works and the ramifications of repairs on the network.

A+ Computer Technicians Operating Systems

WVEIS Code 1702

This course will provide the knowledge and skills to identify, install, configure and upgrade computer operating systems, safety and preventive maintenance procedures. Also included will be specific terminology, categories and principles of computer operating systems and diagnosing and troubleshooting common operating system malfunctions.

Standard 1: Operating System Basics (1702.S.1)

The students will identify operating system basics.

Operating System Basics Objectives

The students will:

- 1702.1.1 Identify the operating system's functions, structures and major system files.
- 1702.1.2 Identify ways to navigate the operating system and how to get to needed technical education.
- 1702.1.3 Identify basic concepts and procedures for creating, viewing and managing files and directories, including procedures for changing file attributes and the ramification of those changes.
- 1702.1.4 Identify the procedures for basic disk management.

Standard 2: Installing, Configuring and Upgrading (1702.S.2)

The students will identify the procedures for installing, configuring and upgrading.

Installing, Configuring and Upgrading Objectives

The students will:

- 1702.2.1 Identify the procedures for installing the operating system and bringing the software to a basic operational level.
- 1702.2.2 Identify the steps to perform an operating system upgrade.
- 1702.2.3 Identify the basic system boot sequences and alternative ways to boot the system software, including the steps to create an emergency boot disk with utilities installed.
- 1702.2.4 Identify procedures for leading/adding device drivers and the necessary software for certain devices.
- 1702.2.5 Identify the procedures for changing options, configuring and using the operating system's printing subsystem.
- 1702.2.6 Identify the procedures for installing and launching typical software applications.

Standard 3: Diagnosing and Troubleshooting (1702.S.3)

The students will be able to recognize, interpret and identify codes, messages and concepts of operating systems.

Diagnosing and Troubleshooting Objectives

The students will:

- 1702.3.1 Recognize and interpret the meaning of common error codes and startup messages from the boot sequence, and identify steps to correct the problems.
- 1702.3.2 Recognize specific printing problems and identify the procedures for correcting them.
- 1702.3.3 Recognize common operating system problems and determine how to resolve them.
- 1702.3.4 Identify concepts relating to viruses and virus types, why they are dangerous, their symptoms, sources of viruses, how they infect, how to protect against them and how to identify and remove them.

Standard 4: Network (1702.S.4)

The students will identify the basic components and operation of computer networks.

Network Objectives

The students will:

- 1702.4.1 Identify the networking capabilities of the operating system, including procedures for connecting to the network.
- 1702.4.2 Identify concepts and capabilities relating to the Internet and basic procedures for setting up a system for Internet access.

Computer Maintenance And Repair

WVEIS Code 1703

This course will provide students with the necessary skills to detect and correct hardware and software faults in personal computers.

Standard 1: Demonstrate safe practices when working with electronic devices. (1703.S.1)

Safe Practices Objectives

Students will:

- 1703.1.1 Identify types of computer viruses and the methods of removing and protecting against them.
- 1703.1.2 Identify and demonstrate proper usage of the components of a basic technician's toolkit.
- 1703.1.3 Demonstrate proper use of a multimeter.

Standard 2: Identify and define hardware. (1703.S.2)

Hardware Objectives

Students will:

- 1703.2.1 Demonstrate knowledge of basic systems components.
- 1703.2.2 Use a block diagram to identify the ALU, control and memory components of the system unit and explain each.
- 1703.2.3 Describe the differences between RAM and ROM memory.
- 1703.2.4 Identify and explain the usage of several of the more common input devices.
- 1703.2.5 Identify several special-purpose output devices.
- 1703.2.6 Describe the differences between monochrome and color display screens.
- 1703.2.7 Identify and explain the difference between impact and non impact printers.
- 1703.2.8 Describe the need for auxiliary storage devices.
- 1703.2.9 Identify the various types and characteristics of auxiliary storage devices.
- 1703.2.10 Identify several of the more common magnetic disk devices, explain how they function, and describe how they are used.
- 1703.2.11 Identify optical storage devices, explain how they function, and describe how they are used.
- 1703.2.12 Identify magnetic tape devices, explain how they function, and are used.
- 1703.2.13 Identify and explain the difference between cathode ray tube (CRT) and liquid crystal display (LCD) technology.
- 1703.2.14 Identify and describe interactive processing and batch processing.

Standard 3: Troubleshoot system components. (1703.S.3)

System Components Objectives

Students will:

- 1703.3.1 Demonstrate correct system disassembly and reassembly.
- 1703.3.2 Identify and correct common faults in system unit components.
- 1703.3.3 Identify and correct common faults in I/O devices.
- 1703.3.4 Identify and correct common faults in operating system components and drives.
- 1703.3.5 Identify and correct common faults in applications.
- 1703.3.6 Utilize operating system components, diagnostic software and supplied documentation to detect and correct faults.
- 1703.3.7 Understand the proper procedure for contacting technical support services.

Standard 4: Demonstrate proper customer support procedures. (1703.S.4)

Proper Customer Support Objectives

Students will:

- 1703.4.1 Demonstrate proper telephone and personal etiquette.
- 1703.4.2 Discuss various questioning techniques.
- 1703.4.3 Perform after-call follow-up.
- 1703.4.4 Maintain logs.

4

Fundamentals of Computer Systems

WVEIS Code 1705

This course will introduce students to the entry-level job skills related to the computer industry, as well as give them a solid foundation for college study in the computer sciences. Students will become familiar with computer operating systems, operational software, and networking of systems.

Standard 1: Identify, explore, and evaluate career opportunities related to computer systems. (1705.S.1)

Computer Systems Objectives

Students will:

- 1705.1.1 Describe a variety of careers related to computer systems, and the training necessary to be successful in those careers.
- 1705.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of computer systems.
- 1705.1.3 Identify sources of information about careers in computer systems.

Standard 2: Demonstrate a knowledge of information processing. (1705.S.2)

Information Processing Objectives

Students will:

- 1705.2.1 List the four elements of the information processing cycle and explain the purpose of each.
- 1705.2.2 Use a block diagram to identify the ALU, control and memory components of the system unit and explain each.
- 1705.2.3 Describe the difference between RAM and ROM memory.
- 1705.2.4 Identify and explain the usage of several of the more common input devices, and identify several special-purpose input devices.
- 1705.2.5 Identify and explain the usage of several of the more common output devices, and identify several special-purpose output devices.
- 1705.2.6 Identify and explain the difference between impact and non-impact printers.
- 1705.2.7 Identify the various types and characteristics of auxiliary storage devices, and the need for them.
- 1705.2.8 Identify several of the more common magnetic disk devices, explain how they function, and describe how they are used.
- 1705.2.9 Identify optical storage devices, explain how they function, and describe how they are used.
- 1705.2.10 Identify magnetic tape devices, explain how they function, and describe how they are used.
- 1705.2.11 Identify various displays available, and explain the difference between cathode ray tube (CRT) and liquid crystal display (LCD) technology.
- 1705.2.12 Identify and describe interactive processing and batch processing.

Standard 3: Demonstrate a knowledge of trends and issues in the computer industry. (1705.S.3)

Computer Industry Objectives

Students will:

- 1705.3.1 Discuss the ethical problems facing the computer industry.
- 1705.3.2 Demonstrate a knowledge of future uses of computer systems, using current literature.

Standard 4: Demonstrate a knowledge of data structure. (1705.S.4)

Data Structure Objectives

Students will:

- 1705.4.1 List the two most commonly used coding schemes.
- 1705.4.2 Define bits, bytes, fields, records and files.

Standard 5: Demonstrate a knowledge of data communications. (1705.S.5)

Data Communications Objectives

Students will:

- 1705.5.1 Describe the basic components of a data communications system.
- 1705.5.2 Discuss various methods and media of networking.

Standard 6: Utilize and define an operating system. (1705.S.6)

Operating System Objectives

Students will:

- 1705.6.1 Define the purpose and functions of an operating system.
- 1705.6.2 Compare and contrast the capabilities of single-user environments and multi-tasking environments.
- 1705.6.3 Describe some of the issues of operating system compatibility.
- 1705.6.4 Effectively use an operating system to view directories, format disks, and copy, rename, and delete files.
- 1705.6.5 Maintain operation logs.

Standard 7: Demonstrate the use of operational software for system troubleshooting. (1705.S.7)

Operational Software Objectives

Students will:

- 1705.7.1 Perform operator diagnostic troubleshooting on a microcomputer system.
- 1705.7.2 Correct faults identified by troubleshooting.

Systems Software

WVEIS Code 1707

This course provides an overview of operating system concepts, the use of personal computer operating systems, data communications, networking concepts and utilization, and an introduction to the Internet.

Standard 1: Demonstrate knowledge of operating system components. (1707.S.1)

Operating System Components Objectives

Students will:

- 1707.1.1 Define operating system.
- 1707.1.2 Compare and contrast command-driven, menu-driven and icon-driven operating systems.
- 1707.1.3 Compare and contrast single-tasking versus multitasking operating system.
- 1707.1.4 Describe various personal computer operating systems in use today.

Standard 2: Utilize an operating system. (1707.S.2)

Operating System Objectives

Students will:

- 1707.2.1 Install and configure an operating system.
- 1707.2.2 Effectively use an operating system to complete a variety of operations.
- 1707.2.3 Use supplied documentation.

Standard 3: Demonstrate knowledge of data communications. (1707.S.3)

Data Communications Objectives

Students will:

- 1707.3.1 Define networking, and describe the basic components of a data communications system.
- 1707.3.2 Describe the difference between local and remote terminals.
- 1707.3.3 Define a Local Area Network (LAN) and a Wide Area Network (WAN).
- 1707.3.4 Compare and contrast various transmission methods and media.
- 1707.3.5 Compare and contrast peer-to-peer, client-server, host-based time sharing, and dedicated file servers.

Standard 4: Utilize a Network Operating System. (1707.S.4)

Network Operating System Objectives

Students will:

- 1707.4.1 Install and configure NOS on servers and clients.
- 1707.4.2 Utilize NOS to complete a variety of tasks.

Standard 5: Demonstrate knowledge of the Internet. (1707.S.5)

Knowledge of the Internet Objectives

Students will:

- 1707.5.1 Define the Internet and discuss its historical evolution.
- 1707.5.2 Utilize various components of the Internet including WWW, email, news groups, search engines, and FTP facilities.
- 1707.5.3 Utilize browsers to access www facilities.

Technical Computer Applications

WVEIS Code 1709

This course will introduce students to the basic principles of computer programming, including program design and implementation. Students will obtain an in-depth understanding of computer software.

Standard 1: Demonstrate knowledge of word processing software. (1709.S.1)

Word Processing Software Objectives

Students will:

- 1709.1.1 Create a document with proper formatting.
- 1709.1.2 Modify a document, then print copies.

Standard 2: Demonstrate knowledge of an electronic spreadsheet. (1709.S.2)

Electronic Spreadsheet Objectives

Students will:

- 1709.2.1 Create, save and print a copy of a basic worksheet.
- 1709.2.2 Modify an existing worksheet.
- 1709.2.3 Create a worksheet graph.

Standard 3: Demonstrate knowledge of computer graphics. (1709.S.3)

Computer Graphics Objectives

Students will:

- 1709.3.1 Define computer graphics and list three uses of graphics software.
- 1709.3.2 Create a graphic with graphics software.

Standard 4: Demonstrate knowledge of presentation software. (1709.S.4)

Presentation Software Objectives

Students will:

- 1709.4.1 Plan and create a presentation using presentation software.
- 1709.4.2 Deliver a presentation, using proper speaking techniques and effectively use the computer generated presentation.

Standard 5: Demonstrate knowledge of database software. (1709.S.5)

Database Software Objectives

Students will:

- 1709.5.1 Create a database file and enter data into the database.
- 1709.5.2 Sort a database file and create a printed document of the information.
- 1709.5.3 Update a database file.

Standard 6: Demonstrate knowledge of other relevant technical computer applications as appropriate. (1709.6.1)

Other Computer Applications Objectives

Students will:

1709.6.1 Discuss and demonstrate the efficient use of other various types of software.

Standard 7: Demonstrate a fundamental knowledge of computer programming languages. (1709.S.7)

Computer Programming Languages Objectives

Students will:

1709.7.1 Define a computer program, and identify programs written in two different languages.

1709.7.2 List four of the most popular programming languages used today, and match each with its appropriate environment.

Standard 8: Demonstrate knowledge of program development. (1709.S.8)

Program Development Objectives

Students will:

1709.8.1 Define the basic steps in the programming cycle.

1709.8.2 Identify and describe the most common flowchart symbols.

1709.8.3 Describe the differences between a system flowchart and a program flowchart.

1709.8.4 Describe file organization and access for sequential files, indexed files, and relative (or direct) files.

Standard 9: Utilize a programming language. (1709.S.9)

Programming Language Objectives

Students will:

1709.9.1 Define a programming problem, and plan a solution to the problem.

1709.9.2 Code, test and debug the program you designed.

1709.9.3 Provide appropriate documentation for the program.

Web Development and Support

WVEIS Code 1711

This course is an introduction to web site development and web server support.

Standard 1: Demonstrate knowledge of the structure and functions of the World Wide Web (WWW). (1711.S.1)

World Wide Web Objectives

Students will:

- 1711.1.1 Describe the structure of the www.
- 1711.1.2 Discuss the various types and uses of web pages.
- 1711.1.3 Discuss the development and uses of HTML.

Standard 2: Demonstrate knowledge of web publishing. (1711.S.2)

Web Publishing Objectives

Students will:

- 1711.2.1 Effectively utilize an HTML editor.
- 1711.2.2 Plan and code a site, then post it on the www.
- 1711.2.3 Register a site with a search engine.
- 1711.2.4 Discuss the purpose of a domain name, and the procedure for obtaining a domain name.

Standard 3: Discuss proper procedures for accessing the WWW. (1711.S.3)

WWW Objectives

Students will:

- 1711.3.1 Discuss the importance and implications of an Acceptable Use Policy.
- 1711.3.2 Demonstrate the use of appropriate screening software.
- 1711.3.3 Discuss the concepts of ethical behavior, security, and user privacy on the WWW.

Standard 4: Demonstrate knowledge of web support procedure. (1711.S.4)

Web Support Procedure Objectives

Students will:

- 1711.4.1 Define web server.
- 1711.4.2 Setup and configure a web server, and perform daily administrative and maintenance tasks on it.
- 1711.4.3 Maintain a log.

Drafting Specialization - Architectural

WVEIS Code 1721

This course will provide students the opportunity to specialize in architectural drawing and design, including plumbing, electrical and HVAC systems. The student will choose one of these areas to do in-depth study during this course.

Standard 1: Demonstrate the ability to design and draw domestic and commercial piping systems. (1721.S.1)

Commercial Piping Systems Objectives

Students will:

- 1721.1.1 Demonstrate knowledge of domestic and commercial piping system terminology and materials.
- 1721.1.2 Demonstrate the ability to interpret and draw domestic and commercial piping schematic flow diagrams.
- 1721.1.3 Demonstrate the ability to use a CAD system to design and develop drawings for domestic and commercial piping.

Standard 2: Demonstrate the ability to design and draw electrical systems. (1721.S.2)

Electrical Systems Objectives

Students will:

- 1721.2.1 Demonstrate knowledge of electrical system terminology and materials.
- 1721.2.2 Demonstrate the ability to interpret and draw electrical diagrams.
- 1721.2.3 Demonstrate the ability to use a CAD system to design and develop drawings for electrical systems.

Standard 3: Demonstrate the ability to design and draw HVAC systems. (1721.S.3)

HVAC Systems Objectives

Students will:

- 1721.3.1 Demonstrate knowledge of HVAC system terminology and materials.
- 1721.3.2 Demonstrate the ability to interpret and draw HVAC diagrams.
- 1721.3.3 Demonstrate the ability to use a CAD system to design and develop drawings for HVAC systems.

Standard 4: Apply architectural techniques to design and draw building structures. (1721.S.4)

Building Structures Objectives

Students will:

- 1721.4.1 Demonstrate knowledge of building styles, material selection and price estimates and architectural terms.
- 1721.4.2 Demonstrate the ability and knowledge to determine structural design required for client needs and purposes.
- 1721.4.3 Draw and dimension all necessary drawings for the completion of the structure, including floor plan, elevations and exterior presentation (two point, three point, etc.), etc.
- 1721.4.4 Demonstrate the ability to use a CAD system to design and develop architectural drawings.

Drafting Specialization-Civil

WVEIS Code 1723

This course will provide students the opportunity to specialize in civil drafting and design, including and introduction to mapping, cartography techniques, and elementary structural steel design.

Standard 1: Utilize civil drawing techniques and proper cartography to develop accurate maps and construction drawings. (1723.S.1)

Maps and Construction Drawings Objectives

Students will:

- 1723.1.1 Demonstrate a knowledge of common maps, earth directions (latitude, longitude, relationship to sea level), convert azimuth to bearings and reverse, plot traverses, contours, profiles and other math computations.
- 1723.1.2 Draw/plot land from legal descriptions and/or write legal descriptions from notes.
- 1723.1.3 Demonstrate understanding of structural design and of weight supports (bridge, tower, road designs).

Standard 2: Demonstrate the ability to design and draw structural steel fabrications. (1723.S.2)

Structural Steel Fabrications Objectives

Students will:

- 1723.2.1 Demonstrate knowledge of structural terms, symbols and materials (steel, concrete, etc.).
- 1723.2.2 Demonstrate familiarity with sheer moment, stress and methods to compute required structural size.
- 1723.2.3 Demonstrate ability to correctly design and draw structural members and connections.
- 1723.2.4 Draw plans of elevations and pictorials.
- 1723.2.5 Demonstrate the ability to use a CAD system to design and develop drawings for steel fabrications.

Standard 3: Utilize CAD and MAPP software to create drawings from field notes. (1723.S.3)

CAD and MAPP Software Objectives

Students will:

- 1723.3.1 Demonstrate knowledge of field surveying notes and their applications to plan drawings.
- 1723.3.2 Complete downloading and editing of raw data to achieve the appropriate format.
- 1723.3.3 Demonstrate knowledge of modeling and overlap using surveying data.

Drafting Specialization - Mechanical

WVEIS Code 1725

This course will introduce students to mechanical drafting, including the application of dimensioning techniques, assembly and detail drawings, pictorial views and common threads and fasteners. This course will provide the training to apply these applications using a CAD system.

Standard 1: Demonstrate the proper use and knowledge of advanced dimensioning techniques. (1725.S.1)

Advanced Dimensioning Techniques Objectives

Students will:

- 1725.1.1 Demonstrate knowledge of advanced dimensioning terminology and basic principals of fit selection.
- 1725.1.2 Apply tolerance dimensions, positional and form tolerance symbols.

Standard 2: Construct various types of assembly and detail drawings. (1725.S.2)

Assembly and Detail Drawings Objectives

Students will:

- 1725.2.1 Identify types of assembly drawings, detail parts within, and dimension detailed assembly drawings.
- 1725.2.2 Draw title and revision blocks, make and record drawing revisions, specify shop notes, and draft the necessary bill of materials on a drawing.
- 1725.2.3 Draw sectional and detailed working assembly drawings.

Standard 3: Identify and draw common threads and fasteners. (1725.S.3)

Threads and Fasteners Objectives

Students will:

- 1725.3.1 Demonstrate knowledge of common threaded fasteners, thread forms, series and classification of fits.
- 1725.3.2 Specify keys, keyways and taper pins, etc.
- 1725.3.3 Draw threaded fasteners using detailed and schematic representations.

Standard 4: Use computer assisted drafting to produce drawings, demonstrating competency in using advanced CAD systems. (1725.S.4)

CAD Systems Objectives

Students will:

- 1725.4.1 Use advanced drawing and editing features within a CAD system.
- 1725.4.2 Obtain numerical and database information from a CAD system.
- 1725.4.3 Use operating system functions within the CAD program.
- 1725.4.4 Demonstrate the ability to efficiently print/plot specified drawings.
- 1725.4.5 Develop 3-D objects on a CAD system.
- 1725.4.6 Use specialized CAD software to design and develop mechanical drawings and models (Mechanical Desktop).
- 1725.4.7 Develop 3-D objects using CNC.

Drafting Techniques

WVEIS Code 1727

This course will introduce students to techniques used in advanced orthographic projection, including dimensioning, sectioning, auxiliary views, revolutions, pattern development and advanced CAD.

Standard 1: Apply proper sectioning techniques to fully describe the interior of an object on a drawing. (1727.S.1)

Proper Sectioning Techniques Objectives

Students will:

- 1727.1.1 Describe the purpose of a cutting plane and cutting plane line, and properly draw them.
- 1727.1.2 Draw various ANSI standard section lines used for general sections, steel, concrete, etc.
- 1727.1.3 Describe the differences between a full, half, revolved, aligned, offset, removed and broken out sections, and use sectioning techniques to complete drawings.

Standard 2: Identify and construct pictorial views. (1727.S.2)

Pictorial Views Objectives

Students will:

- 1727.2.1 Construct oblique and isometric drawings, including exploded and sectional views.
- 1727.2.2 Apply standard, horizontal and reverse axes in isometric drawings.
- 1727.2.3 Draw non-isometric lines, circles arcs, and curved lines.

Standard 3: Draw primary and secondary auxiliary views and revolutions. (1727.S.3)

Auxiliary Views and Revolutions Objectives

Students will:

- 1727.3.1 Demonstrate knowledge of primary auxiliary views.
- 1727.3.2 Draw secondary auxiliary views and explain their use.
- 1727.3.3 Demonstrate knowledge of revolutions and their use.

Standard 4: Apply descriptive geometry techniques to solve graphical problems. (1727.S.4)

Geometry Techniques Objectives

Students will:

- 1727.4.1 Determine the true length of a line, true view of a plane and the true angle between two planes.
- 1727.4.2 Determine the intersection between lines, planes, and surfaces.

Standard 5: Use proper techniques to draw patterns and developments. (1727.S.5)

Patterns and Developments Objectives

Students will:

- 1727.5.1 Develop rectangular prisms, cylinders, pyramids and cones.
- 1727.5.2 Demonstrate knowledge of transition pieces.
- 1727.5.3 Apply development techniques to shop patterns.

Standard 6: Apply the rules of dimensioning to dimension drawings, using architectural,

engineering and metric measurements. (1727.S.6)

Rules of Dimensioning Objectives

Students will:

- 1727.6.1 Layout, measure and construct lines with the architectural, engineering and metric scales.
- 1727.6.2 Describe and apply unidirectional and aligned systems of dimensioning.
- 1727.6.3 Apply standard dimensioning techniques for a hole, countersink, counter bore and knurling.
- 1727.6.4 Properly dimension axonometric drawings.

Standard 7: Use computer assisted drafting to produce drawings, demonstrating the ability to customize a CAD system. (1727.S.7)

Computer Assisted Drafting Objectives

Students will:

- 1727.7.1 Create and use various prototype drawings using custom developed line types, hatch patterns and text styles.
- 1727.7.2 Modify CAD menu to perform additional and/or new operations.
- 1727.7.3 Demonstrate the ability to modify operating system files to facilitate CAD operations and load and run a lisp routine.

Fundamentals Of Drafting

WVEIS Code 1729

This course will introduce students to the basic fundamentals of drafting and geometric construction. Students will become familiar with drafting equipment and methodology used in industry. This course will provide basic understanding of drafting techniques necessary to allow students to progress to CAD.

Standard 1: Identify, explore, and evaluate career opportunities related to drafting and design. (1729.S.1)

Drafting and Design Objectives

Students will:

- 1729.1.1 Describe a variety of careers related to drafting and design, and the training necessary to be successful in those careers.
- 1729.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of drafting and design.
- 1729.1.3 Identify sources of information about careers in drafting.

Standard 2: Identify and properly use a variety of basic drafting equipment and materials. (1729.S.2)

Basic Drafting Equipment and Materials Objectives

Students will:

- 1729.2.1 Describe and properly use standard drafting tools and machines such as triangles, protractors, scales, erasing shield, pencils, pens, erasers, compass and dividers.
- 1729.2.2 List the standard size sheets for drawing, and describe the difference between tracing paper, vellum and drafting film.

Standard 3: Apply mathematical skills related to drafting and design. (1729.S.3)

Mathematical Skills Objectives

Students will:

- 1729.3.1 Perform mathematical computations as they relate to creating accurate drawings.
- 1729.3.2 Interpret various charts and graphs used to display numerical data.
- 1729.3.3 Layout, measure and construct lines with the architectural scales.

Standard 4: Demonstrate proper drafting techniques when solving a variety of drafting problems.(1729.S.4)

Drafting Objectives

Students will:

- 1729.4.1 Identify and draw the various standard ANSI lines, borders and title blocks used in the drafting/design industry.
- 1729.4.2 Properly draw basic geometric shapes using equipment, and layout basic geometric constructions to demonstrate bisection, perpendicular, parallel, tangent, division, etc.
- 1729.4.3 Demonstrate proper techniques for lettering freehand and with mechanical lettering devices.

Standard 5: Demonstrate proper techniques to develop multi-view drawings using orthographic projection. (1729.S.5)

Multi-View Drawings Objectives

Students will:

- 1729.5.1 Apply proper isometric sketching techniques to aid in visualization of orthographic drawings.
- 1729.5.2 Arrange and layout the three principle views of an object on a standard ANSI sheet, using proper centering techniques.
- 1729.5.3 Select the proper views necessary to completely describe an object, and complete technical drawings using these views.

Standard 6: Apply general rules to dimension drawings, using architectural measurements.(1729.S.6)

Dimension Drawings Objective

Students will:

- 1729.6.1 List and draw basic dimensions lines such as extension, dimension and leader lines.

Standard 7: Use computer assisted drafting to produce drawings, demonstrating basic functions of CAD. (1729.S.7)

CAD Objectives

Students will:

- 1729.7.1 Properly use software to create drawings using basic commands.
- 1729.7.2 Dimension the drawing, using appropriate commands.
- 1729.7.3 Properly save and plot a drawing.

Fundamentals of Business Management

WVEIS Code 1733

This course will provide the knowledge and skills to operate and manage a cosmetology salon.

Standard 1: Demonstrate knowledge and skills needed for opening a salon. (1733.S.1)

Salon Objectives

Students will:

- 1733.1.1 Match terms associated with site planning to the correct definitions.
- 1733.1.2 Repeat the characteristics of various types of salons.
- 1733.1.3 Match types of ownerships to the correct descriptions.
- 1733.1.4 Distinguish between lease and rent.
- 1733.1.5 Name clauses that may be included in a complex lease.
- 1733.1.6 Describe a tentative contract.
- 1733.1.7 Identify factors to consider before owning, leasing, or renting a business.
- 1733.1.8 State permits, licenses, and public utilities necessary for opening a salon.
- 1733.1.9 Select from a list sources available for financing a business.
- 1733.1.10 Plan a salon site.

Standard 2: Demonstrate knowledge of salon management. (1733.S.2)

Salon Management Objectives

Students will:

- 1733.2.1 Match terms associated with salon planning and management to the correct definitions.
- 1733.2.2 Cite factors to consider when selecting the salon name.
- 1733.2.3 Select from a list basic implements and equipment needed for the salon.
- 1733.2.4 Select from a list color schemes appropriate for a salon.
- 1733.2.5 Choose basic rules for preparing window displays.
- 1733.2.6 Explain decorating the reception area.
- 1733.2.7 Formulate the styling area arrangements.
- 1733.2.8 List items to consider when setting up a dispensary (supply room).
- 1733.2.9 Tally items to include in a salon operating budget.
- 1733.2.10 Match types of insurance available to the correct definitions.
- 1733.2.11 Describe taxes and laws pertaining to a salon.
- 1733.2.12 Match various salary alternatives to the proper definitions.
- 1733.2.13 Name supplies which should be purchased.
- 1733.2.14 Describe methods of advertising.
- 1733.2.15 Design a salon.

Orientation to Cosmetology

WVEIS Code 1737

This course will provide the student with information about the future of the cosmetology field, sanitation practices and salon equipment.

Standard 1: Summarize the occupational outlook of cosmetology. (1737.S.1)

Cosmetology Objectives

Students will:

- 1737.1.1 Match terms associated with orientation to the correct definitions.
- 1737.1.2 Discuss facts concerning the occupational outlook of cosmetology.
- 1737.1.3 Identify various types of occupations that can be acquired through cosmetology training.
- 1737.1.4 Select from a list specific areas involved in cosmetology lab work.
- 1737.1.5 Select from a list student requirements for the cosmetology program.

Standard 2: Identify general implements and equipment used in a salon. (1737.S.2)

Salon Objectives

Students will:

- 1737.2.1 Match terms associated with implements and equipment to the correct definitions.
- 1737.2.2 Identify types of combs.
- 1737.2.3 Identify types of brushes.
- 1737.2.4 Identify types of rollers
- 1737.2.5 Identify types of clips.
- 1737.2.6 Identify air-waving equipment (quick service).
- 1737.2.7 Identify haircutting implements.
- 1737.2.8 Identify equipment used for facials and scalp treatments.
- 1737.2.9 Identify implements used in thermal waving.
- 1737.2.10 Identify implements used in permanent waving.
- 1737.2.11 Identify implements used in hair lightening and hair coloring.
- 1737.2.12 Identify manicure and pedicure implements.
- 1737.2.13 Identify implements used in styling hairpieces.
- 1737.2.14 Identify implements and equipment used shampooing.
- 1737.2.15 Identify drying equipment.
- 1737.2.16 Identify implements and equipment used in hairstyling.
- 1737.2.17 Distinguish between wet and dry sanitizers.

Standard 3: Demonstrate knowledge of rules concerning sanitation and safety. (1737.S.3)

Sanitation and Safety Objectives

Students will:

- 1737.3.1 Match terms associated with safety to the correct definitions.
- 1737.3.2 Match the colors of the safety color code with their correct use.
- 1737.3.3 Identify rules for personal safety.
- 1737.3.4 Select from a list sanitation and sterilization rules that can prevent some personal safety hazards.
- 1737.3.5 Select physical and chemical methods of sterilization.
- 1737.3.6 Arrange in order steps for using a wet sanitizer.
- 1737.3.7 Identify how bacteria can become a personal health hazard.
- 1737.3.8 Distinguish between pathogenic and nonpathogenic bacteria.

- 1737.3.9 Match types of pathogenic bacteria to diseases they cause.
- 1737.3.10 Select rules for general shop safety.
- 1737.3.11 Label the components of the fire triangle.
- 1737.3.12 Match the classes of fire to the correct definitions.
- 1737.3.13 Match types of fire extinguishers to the class of fire each is best suited to extinguish.
- 1737.3.14 Complete a safety pledge form.
- 1737.3.15 Complete a safety inspection checklist.
- 1737.3.16 State general shop safety rules.
- 1737.3.17 Recall sanitation rules.

Professional Practices – Skin and Nails I

WVEIS Code 1719

This course will provide the student with the knowledge and skills to be able to provide manicures, pedicures, massage, facials.

Standard 1: Manicuring and Pedicuring (1719.S.1)

Students will demonstrate the knowledge of manicuring and pedicuring.

Manicuring and Pedicuring Objectives

Students will:

- 1719.1.1 Match terms associated with manicuring and pedicuring to the correct definitions.
- 1719.1.2 Identify the most common shapes for manicuring women's nails.
- 1719.1.3 Identify the most common shapes for manicuring men's nails.
- 1719.1.4 Match supplies used in manicuring and pedicuring with the correct functions.
- 1719.1.5 Identify equipment and implements used in manicuring and pedicuring.
- 1719.1.6 Match implements and equipment to their correct functions.
- 1719.1.7 Distinguish between a regular manicure and a man's manicure.
- 1719.1.8 Describe hot oil manicuring.
- 1719.1.9 Identify disorders of the nail.
- 1719.1.10 Match disorders of the nail to the correct cause.
- 1719.1.11 Identify diseases of the nail.
- 1719.1.12 Match diseases with their symptoms and causes.
- 1719.1.13 Select from a list the safety precautions to observe while giving a manicure or pedicure.
- 1719.1.14 Name sanitary measures to observe while giving a manicure and pedicure.
- 1719.1.15 Arrange implements and materials for a manicure and pedicure.
- 1719.1.16 Give a regular manicure.
- 1719.1.17 Apply liquid polish.
- 1719.1.18 Give a hot oil manicure.
- 1719.1.19 Give a pedicure.
- 1719.1.20 Repair a split or broken nails.
- 1719.1.21 Apply plastic nails.
- 1719.1.22 Apply sculpture nails.
- 1719.1.23 Apply brush-on nails.
- 1719.1.24 Give a man's manicure.

Standard 2: Nail (1719.S.2)

Students will identify various structures and functions of the nail.

Nail Objectives

Students will:

- 1719.2.1 Match terms associated with nail structure to the correct definitions.
- 1719.2.2 Identify parts of the nail.
- 1719.2.3 Match parts of the nail to the correct functions.
- 1719.2.4 Identify various shapes of nail growth.
- 1719.2.5 Name characteristics of nail growth.

Standard 3: Massage (1719.S.3)

Students will illustrate knowledge of massage.

Massage Objectives

Students will:

- 1719.3.1 Match terms associated with massage manipulations to the correct definitions.
- 1719.3.2 Signify the effects of massage.

- 1719.3.3 Identify various types of massage.
- 1719.3.4 Match types of massage manipulations to the correct characteristics.

Standard 4: Facial (1719.S.4)

Students will demonstrate the ability to give a facial.

Facial Objectives

Students will:

- 1719.4.1 Match terms associated with facials to their correct definitions.
- 1719.4.2 Match the structures of the skin to the correct functions.
- 1719.4.3 Identify muscle and nerve motor points of the face.
- 1719.4.4 Develop reasons for giving facials.
- 1719.4.5 Match skin disorders and diseases to the correct descriptions.
- 1719.4.6 Match types of primary lesions to the correct descriptions.
- 1719.4.7 Match types of secondary lesions to the correct descriptions.
- 1719.4.8 Match the products used in giving a facial to the correct definitions.
- 1719.4.9 Distinguish between facial packs and facial masks.
- 1719.4.10 Identify implements and equipment used in giving a facial.
- 1719.4.11 Match implements and equipment used in giving a facial to the correct functions.
- 1719.4.12 State the types of skin problems that require a facial.
- 1719.4.13 Select proper treatment for skin conditions that require a facial.
- 1719.4.14 Arrange in order the steps in giving a plain facial.
- 1719.4.15 Mark sanitary measures to observe while giving a facial.
- 1719.4.16 State safety precautions to observe while giving a facial.
- 1719.4.17 Complete a safety precaution checklist.
- 1719.4.18 Drape patron for a facial.
- 1719.4.19 Give a plain facial.
- 1719.4.20 Apply facial mask and pack.
- 1719.4.21 Give facial manipulations.
- 1719.4.22 Arch the eyebrows.

Professional Practices – Skin and Nails II

WVEIS Code 1732

This course will provide the student with the knowledge and skills to be able to apply full makeup and various methods of hair removal.

Standard 1: Makeup (1732.S.1)

Students will demonstrate the ability to apply full makeup.

Makeup Objectives

Students will:

- 1732.1.1 Match terms associated with makeup to the correct definitions.
- 1732.1.2 Match cosmetics used in applying makeup to the correct characteristics.
- 1732.1.3 Identify facial shape.
- 1732.1.4 Identify facial problems.
- 1732.1.5 Proportion a face.
- 1732.1.6 Differentiate fair, dark, and oriental skin tones.
- 1732.1.7 Distinguish between daytime and evening makeup.
- 1732.1.8 Match facial shapes and features to problem areas needing correctional makeup.
- 1732.1.9 Note procedures needed to correct various facial problem areas.
- 1732.1.10 Arrange in order the steps to applying daytime makeup.
- 1732.1.11 Distinguish between strip lashes and individual lashes.
- 1732.1.12 Arrange in order the steps for cleaning strip lashes.
- 1732.1.13 Select from a list sanitary measures to observe while applying makeup.
- 1732.1.14 Find safety precautions to observe while applying makeup.
- 1732.1.15 Apply daytime makeup.
- 1732.1.16 Apply evening makeup.
- 1732.1.17 Apply corrective makeup.
- 1732.1.18 Apply strip lashes.
- 1732.1.19 Apply individual lashes.

Standard 2: Hair Removal (1732.S.2)

Students will demonstrate knowledge of various methods of hair removal.

Hair Removal Objectives

Students will:

- 1732.2.1 Match terms associated with hair removal to the correct definitions.
- 1732.2.2 Describe the types of hair removal.
- 1732.2.3 Choose methods of permanent hair removal.
- 1732.2.4 Itemize methods of temporary hair removal.
- 1732.2.5 Identify implements used in temporary hair removal.
- 1732.2.6 Match products and implements to the correct functions.
- 1732.2.7 Select from a list safety precautions to observe while temporarily removing hair.
- 1732.2.8 Tweeze eyebrow hair.
- 1732.2.9 Apply wax depilatory.
- 1732.2.10 Apply chemical depilatory.

Fundamentals of Hairstyling I

WVEIS Code 1734

This course will provide the knowledge and skills for working with hair and scalp, scalp treatment, shampoo and rinse, facial shapes, hair styles, wiggyery.

Standard 1: Hair and Scalp (1734.S.1)

Students will demonstrate knowledge and skill in structure of hair and scalp.

Hair and Scalp Objectives

Students will:

- 1734.1.1 Match terms associated with scalp and hair analysis to the correct definitions.
- 1734.1.2 Discuss the composition of hair.
- 1734.1.3 Identify the layers of hair root shaft.
- 1734.1.4 Identify parts of the hair root area.
- 1734.1.5 Match parts of the hair root area to the correct functions.
- 1734.1.6 Match types of hair texture to their characteristics.
- 1734.1.7 Distinguish between hair porosity and hair elasticity.
- 1734.1.8 Identify sterilization and sanitation rules to observe during scalp and hair analysis.
- 1734.1.9 Identify scalp disorders.
- 1734.1.10 Match scalp disorders to the proper treatments.
- 1734.1.11 Identify scalp disorders that should not be treated in a salon.
- 1734.1.12 Name conditions that affect hair growth.
- 1734.1.13 Prescribe treatments for scalp and hair problems.

Standard 2: Scalp Treatment (1734.S.2)

Students will display knowledge and skill in scalp treatment.

Scalp Treatment Objectives

Students will:

- 1734.2.1 Match terms associated with brushing and scalp treatment to the correct definitions.
- 1734.2.2 Select from a list types of scalp treatments.
- 1734.2.3 Identify scalp conditions that can be treated by a cosmetologist.
- 1734.2.4 Match scalp problems to the necessary treatments.
- 1734.2.5 Identify equipment needed for scalp treatment.
- 1734.2.6 Select from a list general safety precautions to observe while performing scalp treatments.
- 1734.2.7 Develop safety precautions to observe while using high-frequency current.
- 1734.2.8 Distinguish between methods of applying high-frequency current for scalp treatment.
- 1734.2.9 Distinguish between the use of the ultra-violet ray and infra-red ray.
- 1734.2.10 Prescribe treatment for scalp problems.
- 1734.2.11 Drape a patron.
- 1734.2.12 Brush hair for a scalp treatment.
- 1734.2.13 Perform scalp manipulations.
- 1734.2.14 Apply direct and indirect high-frequency current treatments to scalp.
- 1734.2.15 Apply therapeutic rays to scalp.
- 1734.2.16 Apply heat cap scalp treatment.

Standard 3: Shampoo and Apply Rinse (1734.S.3)

Students will demonstrate the ability to give a shampoo and apply rinse.

Shampoo and Apply Rinse Objectives

Students will:

- 1734.3.1 Match terms associated with shampoos and rinses to the correct definitions.
- 1734.3.2 Itemize types of shampoos.

- 1734.3.3 Match types of shampoos to the correct functions.
- 1734.3.4 Identify types of rinses.
- 1734.3.5 Match types of rinses to the correct functions.
- 1734.3.6 State safety precautions to observe during a shampoo.
- 1734.3.7 Identify parts of the pH scale.
- 1734.3.8 Give a shampoo.
- 1734.3.9 Apply acid rinse.
- 1734.3.10 Apply crème rinse.
- 1734.3.11 Apply instant color rinse.

Standard 4: Facial Shapes with Hair Types (1734.S.4)

Students will coordinate facial shapes with hair types.

Facial Shapes with Hair Types Objectives

Students will:

- 1734.4.1 Match terms associated with facial shapes and body structures to the correct definitions.
- 1734.4.2 Identify facial shapes.
- 1734.4.3 Match facial shapes to the correct characteristics.
- 1734.4.4 Identify facial profiles.
- 1734.4.5 Match facial profile shapes to the correct characteristics.
- 1734.4.6 Identify body structures that are used to determine hairstyles.
- 1734.4.7 Match facial shapes to appropriate hairstyles.
- 1734.4.8 Match facial profile shapes to appropriate hairstyles.
- 1734.4.9 Match body structures to the appropriate hairstyles.
- 1734.4.10 Label the major sections of the head.
- 1734.4.11 Indicate proportions of the ideal face.
- 1734.4.12 Measure facial features.

Standard 5: Hair Shaping (1734.S.5)

Students will apply knowledge and skill of hair shaping.

Hair Shaping Objectives

Students will:

- 1734.5.1 Match terms associated with haircutting and shaping to the correct definitions.
- 1734.5.2 Identify implements and equipment needed to give a haircut or shaping.
- 1734.5.3 Match implements and equipment needed to give a haircut or shaping to the proper functions.
- 1734.5.4 Identify the parts of a pair of scissors.
- 1734.5.5 Identify the parts of a razor.
- 1734.5.6 Identify the parts of a pair of thinning shears.
- 1734.5.7 Match the common names for head shapes to the technical names.
- 1734.5.8 Compare hair texture as it relates to haircutting and shaping.
- 1734.5.9 Distinguish between low and high elevation haircutting and shaping.
- 1734.5.10 Select from a list purposes for sectioning hair for a haircut or shaping.
- 1734.5.11 Distinguish between length and perimeter in haircutting and shaping.
- 1734.5.12 Distinguish between tapering and thinning the hair.
- 1734.5.13 Recall in order, steps for cutting and shaping hair to the bond structure.
- 1734.5.14 Distinguish between beveling with a razor and tapering shears.
- 1734.5.15 Identify various elevations used in haircutting and shaping.

Standard 6: Roller Techniques (1734.S.6)

Students will demonstrate the ability to set hair using various roller techniques.

Roller Techniques Objectives

Students will:

- 1734.6.1 Match terms associated with roller sets to the correct definitions.
- 1734.6.2 Identify implements used in roller sets.
- 1734.6.3 Match implements used in roller sets to the correct functions.
- 1734.6.4 Identify parts of a roller curl.
- 1734.6.5 Match parts of a roller curl to the correct descriptions.
- 1734.6.6 Locate roller bases.
- 1734.6.7 Match roller diameters to the correct descriptions.
- 1734.6.8 Distinguish between volume and indentation.
- 1734.6.9 Identify various hair partings.
- 1734.6.10 Match various hair partings.
- 1734.6.11 Discuss various roller placements.
- 1734.6.12 Name products used in roller sets.
- 1734.6.13 State sanitary measures to observe during roller sets.
- 1734.6.14 State rules to observe during roller sets.
- 1734.6.15 Place rollers for a half-bang.
- 1734.6.16 Place rollers for a forward shake.
- 1734.6.17 Place rollers for a wave side.
- 1734.6.18 Place rollers in back for basic set.
- 1734.6.19 Place vertical rollers in back to create design and wave pattern.

Standard 7: Backcomb (1734.S.7)

Students will demonstrate the ability to backcomb into a desired style.

Backcomb Objectives

Students will:

- 1734.7.1 Match terms associated with comb-outs to the correct definition.
- 1734.7.2 Identify equipment used in comb-outs.
- 1734.7.3 Match hairdressing fundamentals to the correct applications.
- 1734.7.4 Specify backcombing techniques.
- 1734.7.5 Describe sectional teasing.
- 1734.7.6 Detail common problems found when backcombing.
- 1734.7.7 Apply basic comb-out techniques.
- 1734.7.8 Backcomb hair.
- 1734.7.9 Lace hair.
- 1734.7.10 Back brush hair.
- 1734.7.11 Stretch a wave.

Standard 8: Thermal Method (1734.S.8)

Students will demonstrate the ability to style hair using the thermal method.

Thermal Method Objectives

Students will:

- 1734.8.1 Match terms associated with thermal hairstyling to the correct definitions.
- 1734.8.2 Distinguish between soft press and hard press.
- 1734.8.3 Define hair texture.
- 1734.8.4 Distinguish between elasticity and porosity.
- 1734.8.5 Match types of scalps to the problems that might occur during thermal hairstyling.
- 1734.8.6 Match equipment used in thermal work to the correct functions.
- 1734.8.7 Arrange in order the steps to follow when tempering thermal irons.
- 1734.8.8 State factors to consider when determining the degree of heat to be used when thermal hairstyling.
- 1734.8.9 Recall how to clean the thermal irons.

- 1734.8.10 Match types of hair presses to the correct definitions.
- 1734.8.11 Match types of thermal curling to the proper characteristics.
- 1734.8.12 Select from a list problem areas to observe while thermal hairstyling.
- 1734.8.13 Select from a list safety precautions to observe while thermal hairstyling.
- 1734.8.14 Give a soft perm.
- 1734.8.15 Thermal curl hair.
- 1734.8.16 Thermal wave hair.
- 1734.8.17 Make side flare, sculpture, spiral (poker), and flip curls using the thermal method.

Fundamentals of Hair Styling II

WVEIS Code 1736

This course will provide the knowledge and skills for working with hair and scalp, scalp treatment, shampoo and rinse, facial shapes, hair styles, wiggery, hair relaxer and hair coloring.

Standard 1: Shaping and Wave (1736.S.1)

Students will demonstrate how to make a shaping and wave.

Shaping and Wave Objectives

Students will:

- 1736.1.1 Match terms associated with shaping to the correct definitions.
- 1736.1.2 Identify the styling section of the head.
- 1736.1.3 Match styling sections of the head to the correct functions.
- 1736.1.4 State the purpose of a shaping.
- 1736.1.5 Identify geometric lines used in hair shaping.
- 1736.1.6 Identify open and closed ends of a shaping.
- 1736.1.7 Arrange in order the steps for establishing a natural part in hair.
- 1736.1.8 Arrange in order the steps for finding natural hair growth direction.
- 1736.1.9 Select from a list rules to observe when making shaping.
- 1736.1.10 Section head into five styling sections.
- 1736.1.11 Make a shaping.
- 1736.1.12 Make a wave.
- 1736.1.13 Make a C-shape.

Standard 2: Pin Curls (1736.S.2)

Students will demonstrate the ability to form pin curls.

Pin Curls Objectives

Students will:

- 1736.2.1 Match terms associated with pin curls to the correct definitions.
- 1736.2.2 Identify parts of a pin curl.
- 1736.2.3 Match parts of a pin curl to the correct functions.
- 1736.2.4 Identify types of pin curl stems.
- 1736.2.5 Match types of pin curl stems to the correct functions.
- 1736.2.6 Compare pin curl stems in relation to the pick-up line.
- 1736.2.7 Identify types of pin curls.
- 1736.2.8 Match types of pin curls to the correct functions.
- 1736.2.9 Identify bases used in forming a pin curl.
- 1736.2.10 Match bases used in forming a pin curl to the correct functions.
- 1736.2.11 Identify implements used to form a pin curl.
- 1736.2.12 Match implements used to form a pin curl to the correct functions.
- 1736.2.13 Select from a list of rules to observe while forming a pin curl.
- 1736.2.14 Place sculpture curls in a shaping.
- 1736.2.15 Place stand up curls for volume.
- 1736.2.16 Form flare curls.
- 1736.2.17 Place ridge curls in set.
- 1736.2.18 Place curved or C-based curls in a shaping.
- 1736.2.19 Form a skip wave.
- 1736.2.20 Complete a basic set using various types of pin curls.

Standard 3: Finger Waving Principles (1736.S.3)

Students will apply the knowledge and skill of finger waving principles.

Finger Waving Principles Objectives

Students will:

- 1736.3.1 Match terms associated with finger waving to the correct definitions.
- 1736.3.2 Identify equipment and materials used in finger waving.
- 1736.3.3 Explain hair growth directions.
- 1736.3.4 Select from a list rules to observe during finger waving.
- 1736.3.5 Indicate the main characteristics of good finger waves.
- 1736.3.6 Demonstrate the ability to finger wave a full head of hair using a side part.

Standard 4: Air Wave Hair (1736.S.4)

Students will demonstrate the knowledge needed to air wave hair.

Air Wave Hair Objectives

Students will:

- 1736.4.1 Match terms associated with air waving to the correct definitions.
- 1736.4.2 Identify implements and equipment used in air waving.
- 1736.4.3 Match implements and equipment used in air waving to the correct functions.
- 1736.4.4 Note products used in air waving.
- 1736.4.5 Arrange in order the steps to air wave hair.
- 1736.4.6 Recall safety precautions to observe while air waving hair.
- 1736.4.7 Air wave hair using blow dryer and round brush.
- 1736.4.8 Use curling iron to style hair.
- 1736.4.9 Use hot comb to style hair.
- 1736.4.10 Curl hair using spring-control curling iron.

Standard 5: Wiggery (1736.S.5)

Students will demonstrate knowledge and skills in wiggery.

Wiggery Objectives

Students will:

- 1736.5.1 Match terms associated with hairpieces to the correct definitions.
- 1736.5.2 Match types of wig materials to the correct descriptions.
- 1736.5.3 Repeat federal government requirements for labeling hairpieces.
- 1736.5.4 Identify types of hairpieces.
- 1736.5.5 Match hairpieces to the correct method of construction.
- 1736.5.6 Identify implements and equipment used for styling hairpieces.
- 1736.5.7 List the steps in measuring the head to fit a wig.
- 1736.5.8 Recall methods of sizing and blocking a wig.
- 1736.5.9 Distinguish between products for cleaning hairpieces.
- 1736.5.10 Arrange in order the steps for cleaning a hairpiece.
- 1736.5.11 Style a wiglet.
- 1736.5.12 Style a wig.

Standard 6: Permanent Weaving (1736.S.6)

Students will apply the principles of permanent waving.

Permanent Weaving Objectives

Students will:

- 1736.6.1 Examine and analyze clients hair and scalp.
- 1736.6.2 Identify clients' preparation prior to perm.
- 1736.6.3 Demonstrate a shaping on client.
- 1736.6.4 Section and block the head in a straight back pattern.

- 1736.6.5 Section and block the head in a double halo pattern.
- 1736.6.6 Section and block the head in a dropped crown position.
- 1736.6.7 Select rods, section and subsection head, wrap off-base curls.
- 1736.6.8 Select rods, section and subsection head, wrap half-base curls.
- 1736.6.9 Wrap hair with single end paper.
- 1736.6.10 Wrap hair with double end paper.
- 1736.6.11 Wrap hair with book end paper.
- 1736.6.12 Identify choice of waving lotion and apply.
- 1736.6.13 Develop test curls.
- 1736.6.14 Application of neutralizer-direct method.
- 1736.6.15 Application of neutralizer-splash on method.
- 1736.6.16 Develop piggyback wrap for long hair.
- 1736.6.17 Develop a body permanent.
- 1736.6.18 Give acid-balanced permanent wave using preheated dryer.

Standard 7: Chemical Hair Relaxer (1736.S.7)

Students will demonstrate the ability to give a chemical hair relaxer.

Chemical Hair Relaxer Objectives

Students will:

- 1736.7.1 Match terms associated with chemical relaxing to the correct definitions.
- 1736.7.2 Distinguish between hair density and hair texture.
- 1736.7.3 Distinguish between elasticity and porosity.
- 1736.7.4 Identify the structure of the hair.
- 1736.7.5 Describe the parts of the hair structure.
- 1736.7.6 Match products used in the chemical relaxing process to their correct descriptions.
- 1736.7.7 Recall methods of applying chemical relaxer to the hair.
- 1736.7.8 Itemize implements used of chemical relaxing.
- 1736.7.9 Arrange in order the steps for taking a strand test.
- 1736.7.10 Select from a list safety precautions to observe during the chemical relaxing process.
- 1736.7.11 Arrange in order the steps for a chemical relaxer.
- 1736.7.12 Arrange in order the steps for a relaxer retouch.
- 1736.7.13 Arrange in order the steps for a chemical blow-out.
- 1736.7.14 Complete a record chart.
- 1736.7.15 Determine the proper chemical relaxer and procedure to follow when given a specific situation.
- 1736.7.16 Section hair for a chemical relaxer.
- 1736.7.17 Straighten hair using a thio chemical relaxer.
- 1736.7.18 Straighten hair using a sodium hydroxide (caustic) relaxer.

Standard 8: Hair Coloring (1736.S.8)

Students will demonstrate knowledge and skill in hair coloring.

Hair Coloring Objectives

Students will:

- 1736.8.1 Match terms associated with hair coloring to the correct definitions.
- 1736.8.2 Describe hair structure as it relates to hair coloring.
- 1736.8.3 List types of hair coloring products.
- 1736.8.4 Match hair coloring products to the general coloring characteristics.
- 1736.8.5 Arrange in order the steps in performing a predisposition test.
- 1736.8.6 List the primary and secondary colors.
- 1736.8.7 Distinguish between warm and cool colors.
- 1736.8.8 Distinguish between single application and double application services.
- 1736.8.9 Distinguish between shades and stages of hair coloring.

- 1736.8.10 Describe nonprofessional hair color products.
- 1736.8.11 Distinguish between henna and soap cap.
- 1736.8.12 Demonstrate different methods to apply color fillers.
- 1736.8.13 Demonstrate pre-softening of hair.
- 1736.8.14 Describe the effect of oxidation in hair coloring.
- 1736.8.15 Select from a list information included on a hair color chart.
- 1736.8.16 Label hair care products used after coloring.
- 1736.8.17 Select from a list corrective measures for hair color problems.
- 1736.8.18 Formulate information necessary for completing a record card.
- 1736.8.19 Recall safety precautions to observe during hair coloring.
- 1736.8.20 Correct hair color problems.
- 1736.8.21 Apply a virgin tint darker than natural hair color.
- 1736.8.22 Apply a tint retouch.
- 1736.8.23 Apply color for lighter shade (single application).
- 1736.8.24 Apply instant temporary color.
- 1736.8.25 Apply semi-permanent color.

Standard 9: Hair Lightening (1736.S.9)

Students will demonstrate knowledge of skill of hair lightening.

Hair Lightening Objectives

Students will:

- 1736.9.1 Match terms associated with lightening and toning to the correct definitions.
- 1736.9.2 Match hair structures as they relate to lightening and toning to the correct descriptions.
- 1736.9.3 Define hair porosity.
- 1736.9.4 Match lightening and toning products to the general lightening characteristics.
- 1736.9.5 Repeat the stages of hair lightening.
- 1736.9.6 Distinguish between shades and stages of hair coloring.
- 1736.9.7 Recall primary and secondary colors.
- 1736.9.8 Select from a list color rules to observe during lightening and toning.
- 1736.9.9 Distinguish between warm and cool colors.
- 1736.9.10 Connect hydrogen peroxide as a developer for tints and lighteners.
- 1736.9.11 Distinguish between a virgin lightener and a lightener retouch.
- 1736.9.12 Select from a list the proper ways of selecting a toner color.
- 1736.9.13 Indicate the chemical composition of penetrating products used in lightening and toning.
- 1736.9.14 Distinguish between color lifting and color grabbing.
- 1736.9.15 Arrange in order the steps for giving a predisposition test.

Cosmetology Science I

WVEIS Code 1738

This course will provide the student with information on human anatomy.

Standard 1: Anatomy (1738.S.1)

Students will demonstrate knowledge of anatomy.

Anatomy Objectives

Students will:

- 1738.1.1 Match terms associated with body systems to the correct definitions.
- 1738.1.2 Match the body systems to the correct functions.
- 1738.1.3 Plot the cell divisions and their functions.
- 1738.1.4 Match types of tissues to their correct functions.
- 1738.1.5 Select from a list the major body organs.
- 1738.1.6 Distinguish between anabolism and catabolism.
- 1738.1.7 Distinguish between cartilage and ligament.
- 1738.1.8 Match the parts of a bone to the correct descriptions.
- 1738.1.9 Discriminate the function of the bones.
- 1738.1.10 Identify bones of the face and head.
- 1738.1.11 Identify bones of the arm and hand.
- 1738.1.12 Match types of joints to the correct locations.
- 1738.1.13 Match types of muscle to their correct descriptions.
- 1738.1.14 Match the parts of a muscle to their correct descriptions.
- 1738.1.15 Identify muscles of the face and head.
- 1738.1.16 Match muscles of the face and head to the correct functions.
- 1738.1.17 Identify types of nerve.
- 1738.1.18 Distinguish between sensory and motor nerves.

Cosmetology Science II

WVEIS Code 1740

This course will provide the student with information on chemicals in products used in cosmetology and the effects on the human anatomy.

Standard 1: Cosmetology

Students will demonstrate a knowledge of the composition of various products used in cosmetology.

Cosmetology Objectives

Students will:

- 1740.1.1 Match terms associated with product chemistry to the correct definitions.
- 1740.1.2 Identify symbols of various elements.
- 1740.1.3 Distinguish between acids and bases.
- 1740.1.4 Interpret the basic characteristics of pH scale.
- 1740.1.5 Recall the chemistry of water.
- 1740.1.6 Distinguish between organic and inorganic chemistry.
- 1740.1.7 Distinguish between physical and chemical changes.
- 1740.1.8 Distinguish between elements and compounds.
- 1740.1.9 Define solution.
- 1740.1.10 Distinguish between a suspension and an emulsion.
- 1740.1.11 Match products used for sterilization and sanitation in the salon to their proper functions.
- 1740.1.12 Select from a list the basic facts about shampoo.
- 1740.1.13 Describe the chemical reaction of hair relaxers and permanent waves.
- 1740.1.14 State the chemical reaction of various hair color products.
- 1740.1.15 Match various products used in cosmetology to the correct chemical makeup.

Diesel Engine Components

WVEIS Code 1741

This course will introduce students to the fundamentals of engine components used in diesel equipment technology.

Standard 1: Demonstrate knowledge of cylinder head components and service. (1741.S.1)

Cylinder Head Components and Service Objectives

Students will:

- 1741.1.1 Define terms and major parts associated with a cylinder head assembly.
- 1741.1.2 Disassemble, service and assemble a cylinder head and components.

Standard 2: Demonstrate knowledge of piston and connecting rod assemblies. (1741.S.2)

Piston and Connecting Rod Assemblies Objectives

Students will:

- 1741.2.1 Define terms and major parts associated with piston and connecting rod assemblies.
- 1741.2.2 Identify types of pistons and piston rings, and list their functions.
- 1741.2.3 Disassemble, service, measure for wear and assemble piston and connecting assembly.

Standard 3: Demonstrate knowledge and skill in the operation of timing gears. (1741.S.3)

Timing Gears Objectives

Students will:

- 1741.3.1 Define terms and major parts associated with camshafts, gears and the valve train.
- 1741.3.2 Explain valve timing on a two-cycle and four-cycle engine.
- 1741.3.3 Describe gears found in a typical gear train and identify those that are marked to insure correct valve timing.
- 1741.3.4 Remove, service and install a camshaft.

Standard 4: Demonstrate knowledge of cylinder blocks. (1741.S.4)

Cylinder Blocks Objectives

Students will:

- 1741.4.1 Define terms and major parts associated with cylinder blocks and a typical frame design.
- 1741.4.2 Identify advantages of a removable liner over an integral cylinder bore.
- 1741.4.3 Remove, inspect and install a cylinder liner.
- 1741.4.4 Clean, inspect, pressure test, service, repair and replace components of an engine block.

Standard 5: Demonstrate knowledge of crankshafts. (1741.S.5)

Crankshafts Objectives

Students will:

- 1741.5.1 Define terms and major parts associated with crankshafts and bearings.
- 1741.5.2 Describe the effects of the arrangement of crankshaft throws, and how the arrangement of throws relates to the number of cylinders in the engine.
- 1741.5.3 Identify ways crankshaft balance is maintained.
- 1741.5.4 Clean, inspect, service and repair crankshafts, oil passages; passage plugs, and journal.

Standard 6: Demonstrate knowledge of common types of bearings and seals. (1741.S.6)

Bearings and Seals Objectives

Students will:

- 1741.6.1 Define terms and major parts associated with bearings and seals.
- 1741.6.2 Discuss the advantages and disadvantages of various types of bearings.
- 1741.6.3 Identify common methods of lubricating bearings, and causes of bearing failure.
- 1741.6.4 Identify types of anti-friction, ball, roller, and needle bearings.
- 1741.6.5 Remove and install a plain bearing and an anti-friction bearing; check and reload bearing setting, using spring scale methods.
- 1741.6.6 Identify places where dynamic seals are used.

Diesel Engine Tune Up and Troubleshooting

WVEIS Code 1743

This course will introduce students to the fundamentals of tune up and troubleshooting used in diesel equipment technology.

Standard 1: Diagnose engine problems and prepare for engine testing. (1743.S.1)

Engine Objectives

Students will:

- 1743.1.1 Define terms associated with operation and maintenance.
- 1743.1.2 List inspections to include in a checklist during normal operation.
- 1743.1.3 List factors to include in the procedure for stopping a diesel engine.
- 1743.1.4 Match the causes of an engine misfiring with the corrective actions.
- 1743.1.5 Identify causes of engine knock.
- 1743.1.6 Identify causes of an overheated engine.
- 1743.1.7 Identify four causes of smoky exhaust.

Standard 2: Demonstrate knowledge of tune-up/adjustment of a diesel engine. (1743.S.2)

Tune-up/Adjustment of A Diesel Engine Objectives

Students will:

- 1743.2.1 Define terms associated with tune-up and adjustment.
- 1743.2.2 Identify major items to include in a visual inspection checklist.
- 1743.2.3 Tune-up a Cummins diesel engine.
- 1743.2.4 Tune-up a Detroit diesel engine.
- 1743.2.5 Tune-up a 3400 series Caterpillar diesel engine.

Standard 3: Demonstrate knowledge of troubleshooting a diesel engine. (1743.S.3)

Diesel Engine Objectives

Students will:

- 1743.3.1 Match terms associated with diagnosis and testing of engines with the correct definitions.
- 1743.3.2 Arrange in order the steps in diagnosing and testing an engine.
- 1743.3.3 Identify major checkpoints when inspecting a diesel engine.
- 1743.3.4 Complete a list of major checks to make when operating an engine.
- 1743.3.5 Identify factors necessary for an engine to produce horsepower.
- 1743.3.6 Select the possible causes of a diesel engine being hard to start or not starting.
- 1743.3.7 Select the possible causes of a diesel engine starting but not running.
- 1743.3.8 Identify items which cause a diesel engine to misfire.
- 1743.3.9 Select items which cause a diesel engine to knock.
- 1743.3.10 Select the items which cause a diesel engine to overheat.
- 1743.3.11 Identify items which cause a diesel engine to have lack of power.
- 1743.3.12 Select the items which cause a diesel engine to use too much oil.
- 1743.3.13 Identify causes of high oil pressure.
- 1743.3.14 List causes of low oil pressure.

Diesel Preventative Maintenance and Inspection WVEIS Code 1745

This course will introduce students to the fundamentals of medium and heavy truck preventative maintenance & inspection used in diesel equipment technology.

Standard 1: Demonstrate knowledge of the engine systems maintenance. (1745.S.1)

Engine Systems Objectives

Students will:

- 1745.1.1 Check engine components
- 1745.1.2 Check engine operation
- 1745.1.3 Inspect the fuel system
- 1745.1.4 Inspect air induction and exhaust system
- 1745.1.5 Inspect cooling system
- 1745.1.6 Inspect the lubrication system

Standard 2: Demonstrate knowledge of under hood and cab maintenance. (1745.S.2)

Hood and Cab Maintenance Objectives

Students will:

- 1745.2.1 Inspect instruments and controls
- 1745.2.2 Inspect safety equipment
- 1745.2.3 Inspect hardware
- 1745.2.4 Inspect heating and AC system

Standard 3: Demonstrate knowledge of electrical/electronic systems. (1745.S.3)

Electrical/Electronic Systems Objectives

Students will:

- 1745.3.1 Inspect battery and starting system
- 1745.3.2 Inspect charging system
- 1745.3.3 Inspect lighting system

Standard 4: Demonstrate knowledge of frame and chassis maintenance. (1745.S.4)

Frame and Chassis Maintenance Objectives

Students will:

- 1745.4.1 Inspect air brake system
- 1745.4.2 Inspect drive train
- 1745.4.3 Inspect steering and suspension system
- 1745.4.4 Inspect tires and wheels
- 1745.4.5 Inspect frame and 5th wheel

Diesel Support Systems

WVEIS Code 1747

This course will introduce students to the fundamentals of support systems used in diesel equipment technology.

Standard 1: Demonstrate knowledge of lubrication and cooling systems. (1747.S.1)

Lubrication and Cooling Systems Objectives

Students will:

- 1747.1.1 Match terms associated with the cooling system with the correct definitions.
- 1747.1.2 Identify two functions of the cooling system and the effects of an engine running too hot or too cold.
- 1747.1.3 Identify the parts in an air cooling system.
- 1747.1.4 Identify types of radiators and functions of the radiator cap.
- 1747.1.5 Identify three types of fans used in cooling systems and types of gauges.
- 1747.1.6 Identify purpose for using coolant filter or conditioner in a cooling system.
- 1747.1.7 Select function of the thermostat.
- 1747.1.8 Identify the primary parts of a water pump and fan.
- 1747.1.9 Match terms associated with the lubrication system with the correct definitions.
- 1747.1.10 Identify types of lubrication systems and their components.
- 1747.1.11 Identify two types of oil filters and sources of oil contamination.
- 1747.1.12 Identify types of oil pumps.
- 1747.1.13 Identify purposes of lubricating valves.
- 1747.1.14 Distinguish between internally and externally mounted oil coolers.

Standard 2: Demonstrate knowledge of air intake and exhaust systems. (1747.S.2)

Air Intake and Exhaust Systems Objectives

Students will:

- 1747.2.1 Match terms and definitions of an air intake and exhaust system and name the parts of each system.
- 1747.2.2 Match types of air cleaners with their processes.
- 1747.2.3 Identify methods of scavenging the cylinders on a two-stroke cycle engine.
- 1747.2.4 Identify advantages of a turbo charged engine.
- 1747.2.5 Test an engine for air flow restriction.
- 1747.2.6 Inspect a turbo charger for satisfactory operation.

Standard 3: Demonstrate knowledge of starting and charging systems. (1747.S.3)

Starting and Charging Systems Objectives

Students will:

- 1747.3.1 Match terms and definitions of a starting system and identify major types of systems.
- 1747.3.2 Name components of an electric starting system.
- 1747.3.3 List low temperature starting aids.
- 1747.3.4 Match terms associated with charging system and name it's components.
- 1747.3.5 Test output of alternators on and off of vehicle.

Standard 4: Demonstrate knowledge of engine retarders. (1747.S.4)

Engine Retarders Objectives

Students will:

- 1747.4.1 Match terms related to engine brakes and retarders with the correct definitions.
- 1747.4.2 Identify advantages of the Jacobs engine brake.

Standard 5: Demonstrate knowledge of fuel system components. (1747.S.5)

Fuel System Objectives

Students will:

- 1747.5.1 Match terms related to fuel injection systems with their correct definitions.
- 1747.5.2 Identify types and major functions of fuel injection systems.
- 1747.5.3 Match terms and definitions related to fuel system components and the parts of a fuel system with their functions.
- 1747.5.4 Identify fuel tank maintenance problems.
- 1747.5.5 Match types of fuel lines with their purposes.
- 1747.5.6 Identify the purpose of a fuel transfer pump.
- 1747.5.7 Identify types and characteristics of fuel filters and separators used for a fuel filtration system.

Standard 6: Demonstrate knowledge of governor. (1747.S.6)

Governor Objectives

Students will:

- 1747.6.1 Match terms related to governors with their correct definitions and the purposes of a governor.
- 1747.6.2 Identify basic types of governors using flyweights.

Diesel Truck Chassis Concepts

WVEIS Code 1749

This course will introduce students to the fundamentals of heavy truck chassis used in diesel equipment technology.

Standard 1: Demonstrate knowledge of transmissions, clutches and drive lines. (1749.S.1)

Transmissions, Clutches and Drive Lines Objectives

Students will:

- 1749.1.1 Remove and replace automatic and manual transmissions.
- 1749.1.2 Remove and replace single-plate and two-plate clutch (transmission removed).
- 1749.1.3 Replace flywheel drive lugs for two-plate clutch.
- 1749.1.4 Align engine flywheel housing.
- 1749.1.5 Inspect pressure plate for reuse, remove and replace clutch release bearing and replace pilot bearing.
- 1749.1.6 Rebuild 4 or 5 speed manual transmission for medium-duty truck.
- 1749.1.7 Remove and replace transmission for air shift mechanisms and rebuild air shift mechanism.
- 1749.1.8 Overhaul twin counter shaft and three counter shaft transmissions.
- 1749.1.9 Replace transmission input shaft separate from transmission overhaul.
- 1749.1.10 Replace speedometer drive gear separate from transmission overhaul.
- 1749.1.11 Remove and replace shift lever housing from transmission separate from transmission overhaul.
- 1749.1.12 Rebuild shift lever housing.
- 1749.1.13 Remove and reinstall driveline.
- 1749.1.14 Set and replace universal joints.
- 1749.1.15 Remove and replace yoke (driveline removed).
- 1749.1.16 Remove and replace driveline center bearings.
- 1749.1.17 Remove, rebuild and replace rear differential carrier assembly in tandem.
- 1749.1.18 Remove, rebuild and reinstall front differential carrier assembly in tandem.
- 1749.1.19 Remove, rebuild and reinstall interaxle differential.
- 1749.1.20 Replace pinion seal separate from carrier overhaul.
- 1749.1.21 Remove and reinstall two-speed shift unit.

Standard 2: Demonstrate knowledge of steering, suspensions, tires/wheels. (1749.S.2)

Steering, Suspensions, Tires/Wheels Objectives

Students will:

- 1749.2.1 Lubricate steering and suspension components.
- 1749.2.2 Check and correct power steering belt tension and correct power steering fluid level.
- 1749.2.3 Replace tie rod ends.
- 1749.2.4 Replace center link and idler cam.
- 1749.2.5 Diagnose steering and suspension problems.
- 1749.2.6 Set toe-in to manufacturer specifications.
- 1749.2.7 Remove and replace king pin and bushings.
- 1749.2.8 Service wheel bearings and seals.
- 1749.2.9 Repair or rebuild spring assembly and shackles, hangers, and pads.
- 1749.2.10 Remove and replace torque arm bushing.
- 1749.2.11 Inspect tires, identify tire, rim, type, and size and match new tire for replacement.
- 1749.2.12 Recognize causes and remedies of abnormal tire wear.
- 1749.2.13 Inspect and replace wheel assembly, measure run out, out of roundness, and inspect for

- flaws.
- 1749.2.14 Diagnose tire and wheel malfunction.

Standard 3: Demonstrate knowledge of the air brake system. (1749.S.3)

Air Brake Systems Objectives

Students will:

- 1749.3.1 Inspect brake lines for condition and leaks.
- 1749.3.2 Service drums, calipers, and rotors.
- 1749.3.3 Test and diagnose air brake system.
- 1749.3.4 Remove and replace various air system components.
- 1749.3.5 Service air brake system plumbing.
- 1749.3.6 Remove and replace service brake chamber diaphragm.
- 1749.3.7 Adjust brakes.
- 1749.3.8 Remove and replace brake shoes.
- 1749.3.9 Remove and replace spring brake chambers.
- 1749.3.10 Remove, replace, and adjust air governor.
- 1749.3.11 Repair, replace, or adjust air pressure relief valve.
- 1749.3.12 Rebuild air compressors and governors.

Fundamentals of Diesel Equipment Technology WVEIS Code 1751

This course will introduce students to the fundamentals of diesel equipment technology. Students will become familiar with the proper use of hand and power tools, precision measurement, and basic oxyacetylene welding and electric welding; identify, tear down, clean, inspect and rebuild various components of an engine.

Standard 1: Identify, explore, and evaluate career opportunities related to diesel equipment technology. (1751.S.1)

Diesel Equipment Technology Objectives

Students will:

- 1751.1.1 Describe a variety of careers related to diesel equipment technology, and the training necessary to be successful in those careers.
- 1751.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of diesel equipment technology.
- 1751.1.3 Identify sources of information about careers in diesel equipment technology.

Standard 2: Demonstrate knowledge of basic safety rules and equipment as it relates to diesel equipment technology. (1751.S.2)

Basic Safety Rules and Equipment Objectives

Students will:

- 1751.2.1 Recognize and follow general safety guidelines, including the selection and use of protective equipment and fire extinguishers.
- 1751.2.2 Describe safety precautions necessary when using hazardous materials.
- 1751.2.3 Describe the precautions to be taken when welding in confined areas.

Standard 3: Identify basic hand tools used in diesel equipment technology and perform various operations. (1751.S.3)

Basic Hand Tools Objectives

Students will:

- 1751.3.1 Choose the proper hand tools for given applications and describe the proper care and maintenance of each.
- 1751.3.2 Demonstrate adjustments necessary with each tool.
- 1751.3.3 Drill holes with a drill press.
- 1751.3.4 Read micrometer and vernier micrometer settings.
- 1751.3.5 Select tools used to restore external and internal threads.

Standard 4: Demonstrate knowledge of fasteners. (1751.S.4)

Fasteners Objective

Students will:

- 1751.4.1 Identify typical fasteners, including washers, devices for locking nuts or bolts, and common types of snap rings and use them in given applications.

Standard 5: Demonstrate knowledge of basic diesel test equipment. (1751.S.5)

Basic Diesel Test Equipment Objective

Students will:

1751.5.1 Identify and use various types of test equipment and service tools.

Standard 6: Demonstrate knowledge of the principles of two and four stroke cycle engine operation. (1751.S.6)

Cycle Engine Operation Objectives

Students will:

1751.6.1 Review the operation of a two stroke and four stroke engine.

1751.6.2 Identify basic parts of a diesel engine.

Standard 7: Demonstrate knowledge of diesel fuel, engine lubricating oils, and coolants. (1751.S.7)

Diesel Fuel, Engine Lubricating Oils, and Coolants Objectives

Students will:

1751.7.1 Define terms and grades associated with diesel fuels, lubricants and coolants meeting ASTM standards.

1751.7.2 List four functions of engine oil and engine oil additives.

1751.7.3 Identify oil contaminants.

1751.7.4 Identify types of cooling systems used on modern engines.

1751.7.5 Explain the function of the parts of a liquid cooling system.

1751.7.6 Identify requirements of a good antifreeze.

Basic Electronics

WVEIS Code 1761

This course will introduce students to the analysis of basic AC and DC circuits, electronic devices, and basic electronic circuits.

Standard 1: Analyze basic DC and AC circuits. (1761.S.1)

DC and AC Circuits Objectives

Students will:

- 1761.1.1 Explain the purpose of resistors and resistive circuits.
- 1761.1.2 Solve electronic problems using Ohm's Law and power formulas.
- 1761.1.3 Construct and analyze series, parallel, and combination resistive circuits.
- 1761.1.4 Demonstrate knowledge of voltage and current dividers.
- 1761.1.5 Demonstrate AC and DC test equipment usage.
- 1761.1.6 Utilize Kirchoff's Laws to solve multi-source circuits.
- 1761.1.7 Demonstrate knowledge of network theorems.
- 1761.1.8 Demonstrate knowledge of magnetism, magnetic units, and electro-magnetic induction.
- 1761.1.9 Construct and analyze AC and DC circuits.
- 1761.1.10 Solve for inductance and inductive reactance.
- 1761.1.11 Solve for capacitance and capacitive reactance.
- 1761.1.12 Construct timing circuits and solve for time constants.
- 1761.1.13 Solve for resonance and resonant circuit parameters.
- 1761.1.14 Construct various filter circuits.

Standard 2: Identify and use electronic devices. (1761.S.2)

Electronic Devices Objectives

Students will:

- 1761.2.1 Describe semiconductor materials.
- 1761.2.2 Explain the PN junction.
- 1761.2.3 Explain semiconductor diode construction and operation.
- 1761.2.4 Describe PNP and NPN transistor operation.
- 1761.2.5 Explain Field-Effect Transistor (FET) operation.
- 1761.2.6 Use thyristors for voltage control devices.
- 1761.2.7 Cross-reference semiconductor type numbers and case styles.
- 1761.2.8 Use special purpose diodes and analyze their operation.
- 1761.2.9 Explain visual character displays.
- 1761.2.10 Demonstrate testing of diodes, transistors, and thyristors.

Standard 3: Construct electronic circuits. (1761.S.3)

Electronic Circuits Objectives

Students will:

- 1761.3.1 Illustrate analog and digital signals.
- 1761.3.2 Calculate amplifier gains.
- 1761.3.3 List and explain characteristics of amplifier circuits.
- 1761.3.4 Construct amplifiers and observe their outputs.
- 1761.3.5 Construct oscillators and observe their outputs.
- 1761.3.6 Construct multivibrators and observe their outputs.
- 1761.3.7 Explain modulation of amplitude, frequency, and pulse-code.

- 1761.3.8 Construct diode and I.C. rectifiers and compare them to I.C. rectifiers.
- 1761.3.9 Troubleshoot power supplies.
- 1761.3.10 Describe circuit configuration for various amplifier systems.
- 1761.3.11 Explain class A, B and C operation of amplifier.
- 1761.3.12 Give analysis of the Common-Emitter (CE) amplifier configuration.
- 1761.3.13 Explain types of output distortion.
- 1761.3.14 Troubleshoot amplifier circuit inputs and outputs.
- 1761.3.15 Analyze inputs and outputs of OP-Amps.

Standard 4: Apply digital fundamentals to electronic circuits. (1761.S.4)

Electronic Circuits Objectives

Students will:

- 1761.4.1 Demonstrate knowledge of binary numbers and arithmetic.
- 1761.4.2 Demonstrate knowledge of octal numbers and arithmetic.
- 1761.4.3 Convert between numbering systems.
- 1761.4.4 Interpret logic diagrams.
- 1761.4.5 Draw symbols for basic logic gates.
- 1761.4.6 Construct basic logic gates from discrete components and I.C's and monitor their outputs.
- 1761.4.7 Construct and analyze basic logic circuits.

Fundamentals of Electricity

WVEIS Code 1763

This course will introduce students to the fundamental skills related to electricity. Students will become familiar with the use of meters and other equipment used in the field of electricity, and learn how to construct a variety of circuits.

Standard 1: Identify, explore/evaluate career opportunities related to electricity. (1763.S.1)

Electricity Objectives

Students will:

- 1763.1.1 Describe a variety of careers related to electricity, and the training necessary to be successful in those careers.
- 1763.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of electricity.
- 1763.1.3 Identify sources of information about careers in electricity.

Standard 2: Demonstrate knowledge of electrical safety. (1763.S.2)

Electrical Safety Objectives

Students will:

- 1763.2.1 Describe the effect of current on the human body.
- 1763.2.2 List general safety precautions when working with electricity.
- 1763.2.3 Identify various types of safety devices used with electricity.
- 1763.2.4 Describe typical electrical shock hazards in industry, and explain what to do for victims of electrical shock.
- 1763.2.5 List and describe the safe use of basic hand and power tools used in the field of electricity.

Standard 3: Interpret blueprints, schematics and technical orders. (1763.S.3)

Blueprints, Schematics and Technical Orders Objectives

Students will:

- 1763.3.1 Demonstrate knowledge of blueprint reading.
- 1763.3.2 Demonstrate knowledge of schematic reading.
- 1763.3.3 Explain the reasons for building plans and specifications.

Standard 4: Apply electrical math concepts. (1763.S.4)

Electrical Math Concepts Objectives

Students will:

- 1763.4.1 Demonstrate knowledge of Ohm's law and power formulas.
- 1763.4.2 Calculate branch circuit loads.

Standard 5: Demonstrate the proper use and care of electrical meters. (1763.S.5)

Electrical Meters Objective

Students will:

- 1763.5.1 Demonstrate the use and care of an ammeter, ohmmeter, and voltmeter.

Standard 6: Construct and analyze basic circuits.

Basic Circuits Objectives

Students will:

- 1763.6.1 Describe the electrical classification of conductors, insulators, and semi-conductors.
- 1763.6.2 Describe electrical current and differentiate between the different kinds of current.
- 1763.6.3 Define voltage, current, resistance, and power.
- 1763.6.4 List, and schematically represent the components that make up a basic electrical circuit.
- 1763.6.5 Connect dry cells into various series and parallel arrangements and measure and record voltage readings across each battery configuration.
- 1763.6.6 Conduct experiments that demonstrate the production of an electromotive force, obtaining voltage readings from experiments.
- 1763.6.7 Construct, solve and troubleshoot series, parallel and complex circuits.

Standard 7: Demonstrate proper techniques in making connections/wire splices. (1763.S.7)

Connections/Wire Splices Objectives

Students will:

- 1763.7.1 Properly remove insulation and make tap, pigtail and western union splices.
- 1763.7.2 Apply solderless terminals, wire nuts, and insulating tape to the ends of various sized wires.

Standard 8: Perform basic soldering techniques.

Basic Soldering Objectives

Students will:

- 1763.8.1 Demonstrate proper use and care for soldering tools and equipment.
- 1763.8.2 Demonstrate correct stripping, tinning, and soldering procedures.
- 1763.8.3 Identify characteristics of a good solder connection.

Industrial and Commercial Wiring

WVEIS Code 1765

This course will introduce students to the special installation and characteristics of industrial and commercial wiring according to the National Electrical Code.

Standard 1: Install conduit and raceways. (1765.S.1)

Conduit and Raceways Objectives

Students will:

- 1765.1.1 List various types of conduit and their uses.
- 1765.1.2 List NEC code requirements for installation and construction of various conduit and raceway systems.

Standard 2: Maintain lighting and receptacle outlets. (1765.S.2)

Lighting and Receptacle Outlets Objectives

Students will:

- 1765.2.1 Explain and install emergency lighting systems.
- 1765.2.2 Diagnose and repair various lighting, receptacle and outlet problems.

Standard 3: Demonstrate knowledge of industrial grounding methods. (1765.S.3)

Industrial Grounding Method Objective

Students will:

- 1765.3.1 Explain grounding of single-phase and three-phase systems.

Standard 4: Demonstrate knowledge and skills associated with transformers. (1765.S.4)

Transformers Objectives

Students will:

- 1765.4.1 List safety procedures used when working with transformers.
- 1765.4.2 Describe construction and operating characteristics of transformers.
- 1765.4.3 Illustrate various types of transformer connections and discuss the results of these connections.
- 1765.4.4 Connect dual-voltage transformers for high and low voltage operation.

National Electrical Code

WVEIS Code 1767

This course will introduce students to the National Electrical Code, and prepare them for the state license testing.

Standard 1: Demonstrate skills in the use of the National Electrical Code (NEC) Handbook. (1767.S.1)

National Electrical Code (NEC) Handbook Objectives

Students will:

- 1767.1.1 Explain history and purpose of the CODE (Article 90).
- 1767.1.2 Explain chapter layout of the NEC handbook.
- 1767.1.3 List installations that the NEC covers and those not covered.
- 1767.1.4 List sequence of organizational components of the NEC.
- 1767.1.5 List steps for finding information in the NEC handbook.
- 1767.1.6 Demonstrate knowledge of how to read and understand the NEC.
- 1767.1.7 Explain and interpret tables from the NEC handbook.

Standard 2: Apply calculations to assure that NEC standards are met. (1767.S.2)

NEC Standards Objectives

Students will:

- 1767.2.1 Calculate conductor size and ampacity, overcurrent protection, grounding, bonding, and grounded conductor size.
- 1767.2.2 Calculate service entrance for single-family and multi-family dwelling units.
- 1767.2.3 Calculate service entrance for a commercial building.
- 1767.2.4 Calculate conduit and box conductor fill.

Residential Wiring

WVEIS Code 1769

This course will introduce students to basic circuits, devices, and wiring techniques used in residential dwellings.

Standard 1: Interpret wiring data. (1769.S.1)

Wiring Data Objectives

Students will:

1769.1.1 Draw an electrical layout of a floor plan to meet minimum NEC specifications.

1769.1.2 Draw a cable layout of floor plan.

Standard 2: Install service entrance equipment and material. (1769.S.2)

Equipment and Material Objectives

Students will:

1769.2.1 List components of and calculate minimum size of service entrance needed.

1769.2.2 Indicate clearances for service drop per NEC regulations.

1769.2.3 Describe installations of underground (lateral) service entrance.

Standard 3: Install lighting and receptacle outlets. (1769.S.3)

Lighting and Receptacle Outlets Objectives

Students will:

1769.3.1 Replace existing fixtures, switches, and receptacles.

1769.3.2 Install and troubleshoot single-pole, three-way, and four-way switching circuits.

1769.3.3 Install split-wired receptacle circuits.

Standard 4: Install protective devices. (1769.S.4)

Protective Devices Objectives

Students will:

1769.4.1 Explain differences between overload, overcurrent, and short circuit.

1769.4.2 Install ground fault circuit breakers and GFCI receptacle outlets.

1769.4.3 Describe the operations of fuses and circuit breakers.

Standard 5: Install appliances and special circuits. (1769.S.5)

Appliances and Special Circuits Objectives

Students will:

1769.5.1 Discuss NEC requirements for appliances and special circuits.

1769.5.2 Install baseboard and wall mounted heating units, with controls.

1769.5.3 Install various fans.

1769.5.4 Install and troubleshoot water heating units.

Standard 6: Install low-voltage systems. (1769.S.6)

Low-Voltage Systems Objectives

Students will:

- 1769.6.1 Install and troubleshoot door bell and chime systems.
- 1769.6.2 Install low-voltage thermostats for heat control.
- 1769.6.3 Install and/or explain low-voltage landscape lighting systems.

Rotating Devices and Control Circuitry

WVEIS Code 1771

This course will introduce students to basic control circuits, pilot devices, motor controls, relays, motor braking circuits, alternators and generators and how to troubleshoot AC and DC motors.

Standard 1: Demonstrate safe work habits. (1771.S.1)

Safe Work Habits Objectives

Students will:

- 1771.1.1 List and explain personal and electrical safety rules applicable to rotating equipment.
- 1771.1.2 List and explain hand and tool safety rules applicable to rotating equipment.

Standard 2: Interpret blueprints, schematics, and block diagrams for control circuitry. (1771.S.2)

Control Circuitry Objectives

Students will:

- 1771.2.1 Draw a block diagram of a motor control system.
- 1771.2.2 Demonstrate knowledge of elementary wiring diagrams and ladder logic.
- 1771.2.3 Install motor control centers and systems, using wiring diagrams.
- 1771.2.4 List and identify motor and motor control symbols.

Standard 3: Demonstrate knowledge and skills applicable to pilot devices. (1771.S.3)

Pilot Devices Objectives

Students will:

- 1771.3.1 Explain purpose and uses of pilot devices.
- 1771.3.2 Explain and list various types of electronic and mechanical sensors and pilot devices.
- 1771.3.3 Explain counter circuits.
- 1771.3.4 Install and troubleshoot various pilot devices and their circuits.

Standard 4: Demonstrate knowledge and skills related to motor controls. (1771.S.4)

Motor Controls Objectives

Students will:

- 1771.4.1 Explain the difference between manual and automatic circuits.
- 1771.4.2 List the equipment and parts needed for automatic circuits.
- 1771.4.3 Identify basic motor control circuits.
- 1771.4.4 Connect basic AC and DC circuits for automatic and manual control.
- 1771.4.5 Explain and demonstrate basic troubleshooting of control circuits.
- 1771.4.6 Install jogging and plugging circuits.
- 1771.4.7 Install reversing circuits.
- 1771.4.8 Demonstrate the use of a phase rotation meter.

Standard 5: Apply knowledge and skills to relays. (1771.S.5)

Relays Objectives

Students will:

- 1771.5.1 Describe and explain relays and relay circuits.

- 1771.5.2 Identify and install overload relays in control circuits.
- 1771.5.3 Identify and install potential-type relays in control circuits.
- 1771.5.4 Explain the difference between relay and magnetic starters.
- 1771.5.5 Explain troubleshooting techniques of relay and magnetic starters.
- 1771.5.6 Check various relays for faults or defects.
- 1771.5.7 Explain, check, and adjust various types of time delay relays.

Standard 6: Differentiate between the different types of motor braking circuits. (1771.S.6)

Motor Braking Circuits Objectives

Students will:

- 1771.6.1 Explain the various types of braking circuits for AC and DC motors.
- 1771.6.2 Describe dynamic braking circuits for AC and DC motors.

Standard 7: Troubleshoot AC and DC motors. (1771.S.7)

AC and DC Motors Objectives

Students will:

- 1771.7.1 Describe the various types of single-phase and three-phase AC motors and DC motors.
- 1771.7.2 Install, check, and troubleshoot various types of single-phase and three-phase motors in a circuit.
- 1771.7.3 Install, check, and troubleshoot various types of DC motors in a circuit.

Standard 8: Demonstrate knowledge and skills related to alternators and generators.
(1771.S.8)

Alternators and Generators Objectives

Students will:

- 1771.8.1 List the major parts of an alternator and a generator and explain the function of each part.
- 1771.8.2 List and describe the different types of alternators and generators.
- 1771.8.3 Check alternators and generators for faults and defects.

Special Applications In Electronics

WVEIS Code 1773

This is a special course for more advanced students to introduce them to the basic theory and operation of programmable logic controllers, fiber optics, and lasers.

Standard 1: Demonstrate a working knowledge of programmable logic controllers (P.L.C.'s). (1773.S.1)

Programmable Logic Controllers Objectives

Students will:

- 1773.1.1 Define terms associated with PLC's.
- 1773.1.2 Illustrate special symbols associated with PLC's.
- 1773.1.3 Demonstrate programming basics.
- 1773.1.4 Program relay, timer, counter and sequencer instructions.
- 1773.1.5 Edit a program.
- 1773.1.6 Utilize the EEPROM memory module.

Standard 2: Demonstrate a working knowledge of fiber optics. (1773.S.2)

Fiber Optics Objectives

Students will:

- 1773.2.1 Define terms and special schematic symbols associated with fiber optics.
- 1773.2.2 Construct fiber optic circuitry.
- 1773.2.3 Use test equipment to analyze inputs and outputs of fiber optic circuits.
- 1773.2.4 Splice fibers and apply fiber optic connectors.

Standard 3: Demonstrate a working knowledge of lasers. (1773.S.3)

Lasers Objectives

Students will:

- 1773.3.1 Demonstrate safe work habits with lasers.
- 1773.3.2 Define terms and special schematic symbols associated with laser equipment and laser circuitry.
- 1773.3.3 Demonstrate knowledge of laser and light physics.
- 1773.3.4 Troubleshoot laser power supplies.
- 1773.3.5 Construct laser circuits.
- 1773.3.6 Perform laser experiments.
- 1773.3.7 Analyze findings from tests and measurements taken on laser circuits.
- 1773.3.8 Troubleshoot laser circuitry.

Analog Circuits

WVEIS Code 1781

This course will introduce students to the skills and technology involved in analog circuits and their use in the modern electronics field.

Standard 1: Construct basic analog circuits and use a variety of test equipment to analyze and troubleshoot them. (1781.S.1)

Analog Circuits Objectives

Students will:

- 1781.1.1 Describe the chemical bonding in semiconductor devices.
- 1781.1.2 Graphically illustrate characteristic curves for diodes and transistors used in analog circuitry.
- 1781.1.3 Match light characteristics and properties for various opto-electronic devices.
- 1781.1.4 Utilize solid state testing equipment to determine the usability of diodes and transistors.
- 1781.1.5 Use oscilloscopes to determine the proper operation and gain of various amplifiers.
- 1781.1.6 Interpret parts manuals for ordering components.
- 1781.1.7 Write reports on troubleshooting methods, providing steps taken to locate and replace faulty components and sub-systems.

Standard 2: Construct amplifier circuits and predict results. (1781.S.2)

Amplifier Objectives

Students will:

- 1781.2.1 Experiment with amplifier biasing methods used to obtain different classes of operations.
- 1781.2.2 Experiment with various coupling methods between stages of amplification.
- 1781.2.3 Determine gains of different types of amplifier circuits.

Standard 3: Troubleshoot systems and sub-systems to locate and correct faults. (1781.S.3)

Systems and Sub-systems Objectives

Students will:

- 1781.3.1 Define an electronic sub-system, an electronic system, and electronic input, process, and output.
- 1781.3.2 Apply critical thinking skills to sub-system level troubleshooting of electronic systems.
- 1781.3.3 Illustrate a block diagram of an electronic system.
- 1781.3.4 Use sub-system input and output measurement data to determine if a system has a fault.
- 1781.3.5 Write technical reports on the findings of sub-system measurements and evaluation.

Computer Electronics Theory

WVEIS Code 1782

This course will introduce students to the analysis of basic AC and DC circuits; electronic devices; and basic electronic circuits.

Standard 1: Basic DC and AC Circuits (1782.S.1)

The students will analyze basic DC and AC circuits.

Basic DC and AC Circuits Objectives

The students will:

- 1782.1.1 Explain the purpose of resistors and resistive circuits.
- 1782.1.2 Solve electronic problems using Ohm's Law and power formulas.
- 1782.1.3 Construct and analyze series, parallel and combination resistive circuits.
- 1782.1.4 Demonstrate knowledge of voltage and current dividers.
- 1782.1.5 Demonstrate AC and DC test equipment.
- 1782.1.6 Utilize Kirchoff's Laws to solve multisource circuits.
- 1782.1.7 Demonstrate knowledge of network theorems.
- 1782.1.8 Demonstrate knowledge of magnetism, magnetic units, and electro-magnetic induction.
- 1782.1.9 Construct and analyze AC and DC circuits.
- 1782.1.10 Solve for inductance and inductive reactance.
- 1782.1.11 Solve for capacitance and capacitive reactance.
- 1782.1.12 Construct timing circuits and solve for time constants.
- 1782.1.13 Solve for resonance and resonant circuit parameters.
- 1782.1.14 Construct various filter circuits.

Standard 2: Electronic Devices (1782.S.2)

The students will identify and use electronic devices.

Electronic Devices Objectives

The students will:

- 1782.2.1 Describe semiconductor materials.
- 1782.2.2 Explain the PN junction.
- 1782.2.3 Explain semiconductor diode construction and operation.
- 1782.2.4 Describe PNP and NPN transistor operation.
- 1782.2.5 Explain Field-Effect Transistor (FET) operation.
- 1782.2.6 Use thyristors for voltage control devices.
- 1782.2.7 Cross-reference semiconductor type numbers and case styles.
- 1782.2.8 Use special purpose diodes and analyze their operation.
- 1782.2.9 Explain visual character displays.
- 1782.2.10 Demonstrate testing of diodes, transistors and thyristors.

Basic AC Circuits

WVEIS Code 1783

This course will introduce students to the skills and technology involved in AC circuits and their use in the modern electronics field.

Standard 1: Evaluate components used with alternating current. (1783.S.1)

Alternating Current Objectives

Students will:

- 1783.1.1 Define capacitance, explain the purpose for capacitors in electronic circuits, and how a capacitor stores electrical energy.
- 1783.1.2 Explain the construction of a capacitor and how the value and voltage ratings relate to size and types.
- 1783.1.3 Measure the charge and discharge time of various capacitors.
- 1783.1.4 Define inductance and describe the application of inductive components to electronics.
- 1783.1.5 Use an L-C analyzer to check the value and condition of various capacitors and inductors.
- 1783.1.6 Draw the schematic symbols for capacitors, inductors, and transformers.
- 1783.1.7 Describe basic operation of a transformer.

Standard 2: Utilize basic test equipment to evaluate circuits. (1783.S.2)

Evaluate Circuits Objectives

Students will:

- 1783.2.1 Use an oscilloscope to observe function generator outputs.
- 1783.2.2 Measure peak to peak voltages with an oscilloscope.
- 1783.2.3 Use a meter to measure voltage and current.
- 1783.2.4 Use a frequency counter to measure frequency.
- 1783.2.5 Convert voltages between peak to peak and R.M.S. values.

Standard 3: Evaluate magnetic and electromagnetic properties. (1783.S.3)

Magnetic and Electromagnetic Objectives

Students will:

- 1783.3.1 Identify, select, handle, and properly store magnetic devices and ferromagnetic materials.
- 1783.3.2 Construct a simple relay and use it as a control device in a basic electrical circuit.
- 1783.3.3 Analyze transformer voltage readings for loaded and unloaded conditions.
- 1783.3.4 Solve mathematical problems related to the use of transformers and transformer turns ratios.
- 1783.3.5 Perform graphing and graphical analysis of various measured data.

Standard 4: Construct AC circuits and use a variety of test equipment to analyze them. (1783.S.4)

AC Circuits Objectives

Students will:

- 1783.4.1 Use logarithmic, exponential, and trigonometric functions related to AC circuit analysis.
- 1783.4.2 Use a magnet to identify various ferrous and non-ferrous materials.
- 1783.4.3 Identify, select, handle, and properly store magnetic devices and ferromagnetic materials.
- 1783.4.4 Use oscilloscopes, frequency counters, DMM's and function generators to observe and record voltage, phase, and frequency data for a variety of LR, RC, and RLC circuits.
- 1783.4.5 Use an L-C analyzer to check the value and condition of various capacitors and inductors.
- 1783.4.6 Test and determine usability of transformers, inductors, capacitors, and resistors (both fixed value and variable).
- 1783.4.7 Test and determine usability of relays, solenoids, and other magnetic devices.

1783.4.8 Use computer software to analyze AC circuits.

Computer Electronics Circuits

WVEIS Code 1784

This course will introduce students to the analysis of analog and digital circuits and devices.

Standard 1: Electronic Circuits (1784.S.1)

The students will construct electronic circuits.

Electronic Circuits Objectives

The students will:

- 1784.1.1 Illustrate analog and digital signals.
- 1784.1.2 Calculate amplifier gains.
- 1784.1.3 List and explain characteristics of amplifier circuits.
- 1784.1.4 Construct amplifiers and observe their outputs.
- 1784.1.5 Construct oscillators and observe their outputs.
- 1784.1.6 Construct multivibrators and observe their outputs.
- 1784.1.7 Explain modulation of amplitude, frequency and pulse-code.
- 1784.1.8 Construct diode and I.C. rectifiers and compare them to I.C. rectifiers.
- 1784.1.9 Troubleshoot power supplies.
- 1784.1.10 Describe circuit configuration for various amplifier systems.
- 1784.1.11 Explain class A, B, and C operation of amplifiers.
- 1784.1.12 Give analysis of the Common-Emitter amplifier configuration.
- 1784.1.13 Explain types of output distortion.
- 1784.1.14 Troubleshoot amplifier circuit inputs and outputs.
- 1784.1.15 Analyze inputs and outputs of Op-Amps.

Standard 2: Digital Circuits (1784.S.2)

The students will apply digital fundamentals to electronic circuits.

Digital Circuits Objectives

The students will:

- 1784.2.1 Use binary numbers and arithmetic.
- 1784.2.2 Use octal numbers and arithmetic.
- 1784.2.3 Convert between numbering systems.
- 1784.2.4 Interpret logic diagrams.
- 1784.2.5 Draw symbols for basic logic gates.
- 1784.2.6 Construct basic logic gates from discrete components and I.C.'s and monitor their outputs.
- 1784.2.7 Construct and analyze basic logic circuits.

Basic Solid State Devices and Circuits

WVEIS Code 1785

This course will introduce students to the skills and technology involved in basic solid state devices and circuits and their use in the modern electronics field.

Standard 1: Demonstrate a fundamental knowledge and practical understanding of analog devices and basic circuits. (1785.S.1)

Analog Devices and Basic Circuits Objectives

Students will:

- 1785.1.1 Identify different types of diodes and transistors.
- 1785.1.2 Use diodes to construct half-wave, full-wave, and bridge rectifier circuits.
- 1785.1.3 Identify anodes and cathodes of diodes and LEDs.
- 1785.1.4 Identify basic anodes and cathodes of transistors (PNP and NVN).
- 1785.1.5 Construct and analyze basic transistor amplifiers (CB, CC, and CE).
- 1785.1.6 Analyze the output waveforms of various filtered and non-filtered power supplies.
- 1785.1.7 Select, and properly handle, diodes and transistors for various applications in circuits.
- 1785.1.8 Use cross-reference guides to determine appropriate substitutes for solid-state components.
- 1785.1.9 Use test instruments to check the static condition of various solid-state components/devices.
- 1785.1.10 Use an oscilloscope to observe the operation of an amplifier.
- 1785.1.11 Use proper troubleshooting procedures to find faults in amplifiers.

Standard 2: Demonstrate a fundamental knowledge and practical understanding of digital devices and basic circuits. (1785.S.2)

Digital Devices and Basic Circuits Objectives

Students will:

- 1785.2.1 Analyze basic logic gates operation with truth table.
- 1785.2.2 Identify basic logic gates schematic symbols.
- 1785.2.3 Use logic probe to observe logic gate operation.
- 1785.2.4 Use oscilloscope to observe logic gate operation.
- 1785.2.5 Identify pin locations on various I.C. packages.

Network Essentials

WVEIS Code 1786

This course will introduce students to the layers of the OSI model, describe the features and functions of network components and provide the skills needed to install, configure and troubleshoot basic networking hardware peripherals and protocols.

Standard 1: Medial and Topologies (1786.S.1)

Students will identify and define media and topologies.

Medial and Topologies Objectives

Students will:

- 1786.1.1 Recognize logical or physical network topologies given a schematic diagram or description.
- 1786.1.2 Specify the main features of 802.2 (LLC), 802.3 (Ethernet), 802.5 (token ring), 802.11b (wireless) and FDDI networking technologies.
- 1786.1.3 Specify the characteristics of EIA/TIA Cabling Standards.
- 1786.1.4 Recognize and describe the use of various media connectors.
- 1786.1.5 Choose the appropriate media type and connectors to add a client to an existing network.
- 1786.1.6 Identify the purpose, features and functions of Hubs, Switches, Bridges, Routers, Gateways, CSU/DSU, Network Interface Cards/ISDN adapters/systems area network cards, Wireless access points and Modems.

Standard 2: Protocols and Standards (1786.S.2)

Students will identify and define protocols and standards.

Protocols and Standards Objectives

Students will:

- 1786.2.1 Given an example, identify a MAC address.
- 1786.2.2 Identify the seven layers of the OSI model and their functions.
- 1786.2.3 Differentiate between various network protocols in terms of routing, addressing schemes, interoperability and naming conventions.
- 1786.2.4 Identify the OSI layers at which Hubs, Switches, Bridges, Routers and Network Interface Cards operate.
- 1786.2.5 Define the purpose, function and/or use of protocols within TCP/IP.
- 1786.2.6 Define the function of TCP/UDP ports, and identify well-known ports.
- 1786.2.7 Identify the purpose of DHCP/bootp, DNS, NAT/ICS, WINS and SNMP.
- 1786.2.8 Identify IP addresses (Ipv4, Ipv6) and their default subnet masks.
- 1786.2.9 Identify the purpose of subnetting and default gateways.
- 1786.2.10 Identify the differences between public vs. private networks.
- 1786.2.11 Identify the basic characteristics of various WAN technologies.
- 1786.2.12 Define the function of remote access protocols and services.
- 1786.2.13 Identify security protocols and describe their purpose and function.

Standard 3: Network Implementation (1786.S.3)

Students will demonstrate network implementation.

Network Implementation Objectives

Students will:

- 1786.3.1 Identify the basic capabilities of various server operating systems.
- 1786.3.2 Identify the basic capabilities of client workstations.

- 1786.3.3 Identify the main characteristics of VLANs.
- 1786.3.4 Identify the main characteristics of network attached storage.
- 1786.3.5 Identify the purpose and characteristics of fault tolerance.
- 1786.3.6 Identify the purpose and characteristics of disaster recovery.
- 1786.3.7 Given a remote connectivity scenario, configure the connection.
- 1786.3.8 Identify the purpose, benefits and characteristics of using a firewall.
- 1786.3.9 Identify the purpose, benefits and characteristics of using a proxy.
- 1786.3.10 Given a scenario, predict the impact of a particular security implementation on network functionality.
- 1786.3.11 Given a network configuration, select the appropriate NIC and network configuration settings.

Standard 4: Network Support (1786.S.4)

Students will demonstrate proper network support.

Network Support Objectives

Students will:

- 1786.4.1 Given a troubleshooting scenario, select the appropriate TCP/IP utility.
- 1786.4.2 Given a troubleshooting scenario involving a small office/home office network failure, identify the cause of the failure.
- 1786.4.3 Given a troubleshooting scenario involving a remote connectivity problem, identify the cause of the problem.
- 1786.4.4 Given specific parameters, configure a client to connect to various servers.
- 1786.4.5 Given a wiring task, select the appropriate tool.
- 1786.4.6 Given a network scenario, interpret visual indicators to determine the nature of the problem.
- 1786.4.7 Given output from a diagnostic utility, identify the utility and interpret the output.
- 1786.4.8 Given a scenario, predict the impact of modifying, adding, or removing network services on network resources and users.
- 1786.4.9 Given a network problem scenario, select an appropriate course of action based on a general troubleshooting strategy.
- 1786.4.10 Given a troubleshooting scenario involving a network with a particular physical topology and including a network diagram, identify the network area effected and the cause of the problem.
- 1786.4.11 Given a network-troubleshooting scenario involving a client connectivity problem, identify the cause of the problem.
- 1786.4.12 Given a network-troubleshooting scenario involving a wiring/infrastructure problem, identify the cause of the problem.

DC Circuits and Electron Physics

WVEIS Code 1787

This course will introduce students to the skills and technology in DC circuits and electron physics.

Standard 1: Describe electron physics as it relates to voltage, current and resistance. (1787.S.1)

Electron Physics Objectives

Students will:

- 1787.1.1 Demonstrate the law of electrical/electrostatic charges (Coulombs Law)
- 1787.1.2 State the law of magnetism.
- 1787.1.3 Use a magnet to identify various ferrous and non-ferrous materials.

Standard 2: Analyze D.C. circuits mathematically. (1787.S.2)

D.C. Circuits Objectives

Students will:

- 1787.2.1 Use calculators to solve algebraic equations for series, parallel, and complex DC circuits.
- 1787.2.2 Interpret and convert units of measurement for DC circuits.
- 1787.2.3 Perform calculations for meter and circuit loading effect.
- 1787.2.4 Use Ohm's Law to analyze circuits.
- 1787.2.5 Use Kirchoff's Law, Therening's Law, and Norton's Law to analyze circuits.

Standard 3: Demonstrate knowledge of basic safety rules and equipment as it relates to electronics technology. (1787.S.3)

Safety Rules and Equipment Objectives

Students will:

- 1787.3.1 Follow all safety precautions when working with electricity.
- 1787.3.2 Explain and demonstrate the proper use and care of tools, machines, and equipment in the electronics laboratory.
- 1787.3.3 Identify, demonstrate proper use and care of, all basic personal safety devices and equipment.

Standard 4: Construct DC circuits and analyze them by making various static and dynamic measurements. (1787.S.4)

DC Circuits Objectives

Students will:

- 1787.4.1 Identify, select, and properly handle resistors, fuses and other protective devices, control devices, and EMF producing devices.
- 1787.4.2 Lay out electronic components with which to construct circuits and sub-systems.
- 1787.4.3 Use an EMF, conductors, various control devices, protective devices, and various types of loads to construct, observe, and record results of basic electrical circuits.
- 1787.4.4 Construct and analyze voltage and current divider networks.
- 1787.4.5 Locate and replace faulty components in series, parallel, and complex DC circuits.
- 1787.4.6 Locate and repair continuity problems in DC circuits.
- 1787.4.7 Use an ammeter to measure the current flowing in opened and closed circuits.
- 1787.4.8 Use power supplies and VOM's/ DMM's to obtain active DC circuit measurements.
- 1787.4.9 Use an oscilloscope to analyze DC circuitry.
- 1787.4.10 Use computer software to analyze DC circuits.

Network Operations

WVEIS Code 1788

This course will introduce students to network operating systems, security models, administrative responsibilities and network operating systems troubleshooting.

Standard 1: Network Operating Systems (1788.S.1)

The students will identify and install network operating systems.

Network Operating Systems Objectives

The students will:

- 1788.1.1 Identify various NOSs.
- 1788.1.2 Compare NOSs with other Operating Systems.
- 1788.1.3 Plan NOS installation based on hardware, software and network requirements.
- 1788.1.4 Install a NOS.
- 1788.1.5 Identify administrative, server and diagnostic tools.

Standard 2: NOSs Configuration and administration (1788.S.2)

The students will configure and administrate NOSs.

NOSs Objectives

The students will:

- 1788.2.1 Define security in terms of a NOS.
- 1788.2.2 Administrate user accounts, group accounts, file permissions and system policies.
- 1788.2.3 Update NOS with optional updates.

Standard 3: NOSs Troubleshooting (1788.S.3)

The students will troubleshoot NOSs.

NOSs Troubleshooting Objectives

The students will:

- 1788.3.1 Perform problem determination.
- 1788.3.2 Use diagnostic hardware and software tools and utilities to troubleshoot NOSs.
- 1788.3.3 Identify and correct misconfigurations.

Digital Circuits

WVEIS Code 1789

This course will introduce students to the skills and technology involved in digital circuits and their use in the modern electronics field.

Standard 1: Perform math skills related to digital circuitry. (1789.S.1)

Digital Circuitry Objectives

Students will:

- 1789.1.1 Apply boolean algebra to solve logic functions.
- 1789.1.2 Perform binary, octal, decimal, and hexadecimal conversions and calculations.
- 1789.1.3 Use Karnaugh maps to simplify logic functions.

Standard 2: Analyze digital circuits mathematically and theoretically. (1789.S.2)

Analyze Digital Circuits Objectives

Students will:

- 1789.2.1 Operate a transistor as a digital switch.
- 1789.2.2 Construct and analyze the basic logic gates.
- 1789.2.3 Assemble and analyze adder circuits.
- 1789.2.4 Assemble converter circuits and use a seven-segment display to observe their output and operation.
- 1789.2.5 Construct and analyze combinational logic circuits.
- 1789.2.6 Explore the digital applications of various families of integrated circuits (TTL, CMOS, etc.).
- 1789.2.7 Convert AND/OR logic circuits to NAND/NOR logic circuits.

Standard 3: Construct digital circuits and use test equipment to analyze and troubleshoot them. (1789.S.3)

Construct Digital Circuits Objectives

Students will:

- 1789.3.1 Use logic probes and pulsters to observe the behavior of various digital devices.
- 1789.3.2 Use oscilloscopes to analyze output waveforms of timing circuits.
- 1789.3.3 Locate and correct faults in basic logic circuits.

Electronics Specializations

WVEIS Code 1791

This course will introduce students to the skills and technology involved in the various specializations in the modern electronics field.

Standard 1: Troubleshoot AC and DC circuits. (1791.S.1)

AC and DC Circuits Objectives

Students will:

- 1791.1.1 Solve simultaneous linear equations for circuit analysis.
- 1791.1.2 Apply network analysis to solve for unknown variables in DC circuits with multiple voltage sources.
- 1791.1.3 Perform calculations for internal resistance of voltage sources and maximum power transfer.
- 1791.1.4 Construct and analyze analog meter circuitry.
- 1791.1.5 Interpret and determine accuracy of measurements in DC circuits.
- 1791.1.6 Construct and obtain resistance, voltage, and current readings in passive and active parallel DC circuits.
- 1791.1.7 Construct and obtain resistance, voltage, and current readings in passive and active complex DC circuits.
- 1791.1.8 Construct and analyze DC circuits that contain multiple voltage sources.
- 1791.1.9 Construct and obtain resistance, voltage, and current readings in passive and active series DC circuits.
- 1791.1.10 Solve for unknown values resulting from the use of inductors and capacitors in circuits.
- 1791.1.11 Restore faulty AC circuits to proper operating conditions.

Standard 2: Troubleshoot active devices and analog circuits. (1791.S.2)

Active Devices and Analog Circuits Objectives

Students will:

- 1791.2.1 Construct single stage amplifier circuits (common base, common collector, and common emitter).
- 1791.2.2 Analyze both static and dynamic operating characteristics of various single stage amplifiers.
- 1791.2.3 Construct and analyze multistage discrete component power amplifiers.
- 1791.2.4 Explain the applications for field effect transistors and test for usability.
- 1791.2.5 Identify and test thyristor devices.
- 1791.2.6 Construct and analyze thyristor circuitry.
- 1791.2.7 Construct and perform operational tests on oscillator circuits.
- 1791.2.8 Interpret manuals to determine maintenance procedures.
- 1791.2.9 Maintain technical logs.
- 1791.2.10 Construct and analyze voltage and current regulator circuits.
- 1791.2.11 Locate and correct faults in both regulated and non-regulated power supplies.
- 1791.2.12 Locate and correct faults in various types of amplifier circuits and systems.

Standard 3: Troubleshoot digital and microprocessor circuits. (1791.S.3)

Digital and Microprocessor Circuits Objectives

Students will:

- 1791.3.1 Locate and correct faults in oscillator and timer circuits.
- 1791.3.2 Interpret schematics and block diagrams to determine primary circuits functions.
- 1791.3.3 Assemble and analyze IC RAM, ROM, and EPROM circuits.

- 1791.3.4 Examine the operation of microprocessor devices.
- 1791.3.5 Construct JFET and MOSFET circuits and perform waveform analysis of inputs and outputs.
- 1791.3.6 Construct and analyze operational and linear IC amplifier circuits.
- 1791.3.7 Differentiate between, and identify pin arrangements of, various integrated circuits such as; operational amplifiers, linear IC amps, oscillators, timers, and voltage regulators.
- 1791.3.8 Construct and analyze active diode circuits, to include comparators.
- 1791.3.9 Construct and observe outputs of counter circuits driven by timers.
- 1791.3.10 Construct and analyze a stable, monostable, and bistable multivibrator circuits.
- 1791.3.11 Assemble and analyze encoders and decoders.
- 1791.3.12 Locate and correct faults in multivibrator circuits.
- 1791.3.13 Troubleshoot and repair advanced digital circuitry.
- 1791.3.14 Analyze digital systems to determine faulty subsystem assemblies.
- 1791.3.15 Locate and repair faulty interfacing of microprocessor systems.
- 1791.3.16 Analyze specification/data sheets for digital components.
- 1791.3.17 Assemble and analyze multiplexers and demultipliers.
- 1791.3.18 Construct and observe the operation of shift-registers.
- 1791.3.19 Load and execute basic programs in microprocessors.

Standard 4: Prepare reports on status of systems and sub-system. (1791.S.4)

Systems And Sub-System Objectives

Students will:

- 1791.4.1 Identify a problem related to an electronic system, and form a hypothesis.
- 1791.4.2 State the need to research the problem, list the procedures for carrying out the research, and conduct the research in accordance with the listed procedures.
- 1791.4.3 Present the finding to a group of peers, stating conclusions based upon the research findings.
- 1791.4.4 Prepare defect, failure, and equipment evaluation reports.

Standard 5: Evaluate systems and sub-systems. (1791.S.5)

Evaluate Systems and Sub-Systems Objectives

Students will:

- 1791.5.1 Identify input and output waveforms of various analog and digital sub-systems and systems.
- 1791.5.2 Illustrate input and output signals of various electronic power supplies and analog sub-systems.
- 1791.5.3 Use block diagrams of different kinds of systems and networks to describe the function of each block.
- 1791.5.4 Define and describe systems that operate in biomedical, communications, computer, and electromechanical networks.
- 1791.5.5 Obtain a signal output from a function generator and display this signal on an oscilloscope.
- 1791.5.6 Utilize electronic test instruments to observe and record input and output data of various electronic sub-systems, then write a technical report on the findings and determine if a system has a fault.
- 1791.5.7 Apply critical thinking skills to sub-system level troubleshooting of electronic power supplies and analog systems.
- 1791.5.8 Replace faulty sub-systems and test the overall systems for proper operation.
- 1791.5.9 Write reports on troubleshooting methods, providing steps taken to locate and replace faulty components and sub-systems.
- 1791.5.10 Construct sub-system assemblies to produce various electronics systems.
- 1791.5.11 Lay out electronic components with which to construct circuits and sub-systems.

Fundamentals of Electricity

WVEIS Code 1793

This course will introduce students to the fundamental skills related to electricity. Students will become familiar with the use of meters and other equipment used in the field of electricity, and learn how to construct a variety of circuits.

Standard 1: Identify, explore/evaluate career opportunities related to electricity. (1793.S.1)

Electricity Objectives

Students will:

- 1793.1.1 Describe a variety of careers related to electricity, and the training necessary to be successful in those careers.
- 1793.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of electricity.
- 1793.1.3 Identify sources of information about careers in electricity.

Standard 2: Demonstrate knowledge of electrical safety. (1793.S.2)

Electrical Safety Objectives

Students will:

- 1793.2.1 Describe the effect of current on the human body.
- 1793.2.2 List general safety precautions when working with electricity.
- 1793.2.3 Identify various types of safety devices used with electricity.
- 1793.2.4 Describe typical electrical shock hazards in industry, and explain what to do for victims of electrical shock.
- 1793.2.5 List and describe the safe use of basic hand and power tools used in the field of electricity.

Standard 3: Interpret blueprints, schematics and technical orders. (1793.S.3)

Blueprint Objectives

Students will:

- 1793.3.1 Demonstrate knowledge of blueprint reading.
- 1793.3.2 Demonstrate knowledge of schematic reading.
- 1793.3.3 Explain the reasons for building plans and specifications.

Standard 4: Apply electrical math concepts. (1793.S.4)

Electrical Math Concepts Objectives

Students will:

- 1793.4.1 Demonstrate knowledge of Ohm's law and power formulas.
- 1793.4.2 Calculate branch circuit loads.

Standard 5: Demonstrate the proper use and care of electrical meters. (1793.S.5)

Electrical Meters Objective

Students will:

- 1793.5.1 Demonstrate the use and care of an ammeter, ohmmeter, and voltmeter.

Standard 6: Construct and analyze basic circuits. (1793.S.6)

Basic Circuits Objectives

Students will:

- 1793.6.1 Describe the electrical classification of conductors, insulators, and semi-conductors.
- 1793.6.2 Describe electrical current and differentiate between the different kinds of current.
- 1793.6.3 Define voltage, current, resistance, and power.
- 1793.6.4 List, and schematically represent the components that make up a basic electrical circuit.
- 1793.6.5 Connect dry cells into various series and parallel arrangements and measure and record voltage readings across each battery configuration.
- 1793.6.6 Conduct experiments that demonstrate the production of an electromotive force, obtaining voltage readings from experiments.
- 1793.6.7 Construct, solve and troubleshoot series, parallel and complex circuits.

Standard 7: Demonstrate proper techniques in making connections/wire splices. (1793.S.7)

Connections/Wire Splices Objectives

Students will:

- 1793.7.1 Properly remove insulation and make tap, pigtail and western union splices.
- 1793.7.2 Apply solderless terminals, wire nuts, and insulating tape to the ends of various sized wires.

Standard 8: Perform basic soldering techniques. (1793.S.8)

Soldering Objectives

Students will:

- 1793.8.1 Demonstrate proper use and care for soldering tools and equipment.
- 1793.8.2 Demonstrate correct stripping, tinning, and soldering procedures.
- 1793.8.3 Identify characteristics of a good solder connection.

Wiring and Soldering

WVEIS Code 1795

This course will introduce students to the skills and technology involved in the wiring and soldering of modern components and circuit boards, etc.

Standard 1: Soldering techniques. (1795.S.1)

Soldering Techniques Objectives

Students will:

- 1795.1.1 Remove and replace components on printed circuit boards, repairing any damage to the boards.
- 1795.1.2 Identify and use heat sinks when soldering heat sensitive components to circuits boards.
- 1795.1.3 Prepare wires, terminals, components, and printed circuit boards for soldering.
- 1795.1.4 Solder wires and components to terminals and printed boards.
- 1795.1.5 Solder and desolder single sided boards, multilayered boards, and surface mounted devices.

Standard 2: Demonstrate proper procedures when handling, maintaining, and constructing printed circuit boards. (1795.S.2)

Circuit Boards Objectives

Students will:

- 1795.2.1 Use computer software to generate printed circuit board design.
- 1795.2.2 Lay out printed circuit boards for etching.
- 1795.2.3 Use different methods to produce printed circuit boards, including applying basic chemistry principles to produce printed circuits on copper-clad boards.
- 1795.2.4 Demonstrate proper safety procedures when working with P.C. boards.
- 1795.2.5 Use parts diagrams and schematics to properly place and solder components to printed circuit boards.
- 1795.2.6 Test completed circuit boards for proper circuit operation.

Basic Masonry and Landscaping

WVEIS Code 1801

This course will introduce students to basic skills in masonry and landscape maintenance; including safety, and tools, equipment and processes.

Standard 1: Demonstrate knowledge of basic masonry skills. (1801.S.1)

Basic Masonry Skills Objectives

Students will:

- 1801.1.1 Identify and describe common terms, tools and equipment used in the masonry field.
- 1801.1.2 Demonstrate proper safety skills associated with masonry work.
- 1801.1.3 Repair various types of masonry surfaces using proper materials; including filling expansion joints, repairing structural cracks, installing fasteners, and replacing bricks and blocks.
- 1801.1.4 Construct forms for masonry repair.
- 1801.1.5 Mix, float, edge and joint concrete and mortar.
- 1801.1.6 Waterproof masonry wall.

Standard 2: Demonstrate knowledge of basic landscape maintenance skills. (1801.S.2)

Landscape Maintenance Skills Objectives

Students will:

- 1801.2.1 Identify and describe common terms, tools, equipment, and materials associated with lands maintenance.
- 1801.2.2 Demonstrate proper safety skills associated with land maintenance.
- 1801.2.3 Demonstrate proper methods to repair and maintain lawns, including fill, grade, seed, mow, edge and trim turf.
- 1801.2.4 Select and apply herbicides, pesticides, and fertilizers for landscape planting.
- 1801.2.5 Plant trees, shrubs, and flowers, and maintain them by pruning trees and shrubs and maintaining flowerbeds.
- 1801.2.6 Properly use tools and materials for removal of snow and ice.
- 1801.2.7 Perform maintenance on landscape tools and equipment.

Basic Plumbing and Electricity

WVEIS Code 1803

This course will introduce students to basic skills in basic plumbing and electricity; including safety, and tools, equipment and processes.

Standard 1: Demonstrate knowledge of basic plumbing skills. (1803.S.1)

Basic Plumbing Skills Objectives

Students will:

- 1803.1.1 Identify terms, tools, materials and fixtures common to plumbing repair.
- 1803.1.2 Demonstrate proper safety skills associated with plumbing work.
- 1803.1.3 Measure, cut, join and apply fittings to galvanized, black iron, copper, and plastic pipe and tubing.
- 1803.1.4 Demonstrate the ability to open clogged lines, using chemicals, a plunger, and a snake or auger.
- 1803.1.5 Demonstrate ability to winterize water supply lines, traps and drains.

Standard 2: Demonstrate skills related to advanced plumbing repair. (1803.S.2)

Advanced Plumbing Repair Objectives

Students will:

- 1803.2.1 Perform tests to detect leaks on water pipes and repair leaking faucets and pipes.
- 1803.2.2 Clean gas furnace burner chamber and thermocouple, ventilate vapor from confined area and test for leaks.
- 1803.2.3 Properly maintain water heaters and furnaces, including: installation of pressure safety valve, adjustment of temperature, and lighting of pilot lights.

Standard 3: Demonstrate knowledge of basic electrical skills. (1803.S.3)

Basic Electrical Skills Objectives

Students will:

- 1803.3.1 Identify terms, tools, materials and fixtures common to electrical repair.
- 1803.3.2 Perform safety skills associated with electrical work.
- 1803.3.3 Replace defective electrical fixtures, such as: receptacles, switches, sockets, cords and plugs.
- 1803.3.4 Replace fluorescent and incandescent bulbs and fuses.
- 1803.3.5 Remove and replace faulty burners and oven heating elements in electric ranges.

Standard 4: Demonstrate skills related to advanced electrical maintenance. (1803.S.4)

Advanced Electrical Maintenance Objectives

Students will:

- 1803.4.1 Identify and explain the uses of basic electrical hardware items such as: switches, outlets, work boxes, and wiring.
- 1803.4.2 Test electrical circuits for power.
- 1803.4.3 Remove, replace, and adjust thermostats, and ballast and starters in fluorescent fixtures.

Fundamentals of Facilities Maintenance

WVEIS Code 1805

This course will introduce students to the basic skills in preventive and corrective facilities maintenance. Students will become familiar with general basic tools, materials and processes necessary for facility and landscape maintenance.

Standard 1: Identify, explore, and evaluate career opportunities related to facilities maintenance. (1805.S.1)

Facilities Maintenance Objectives

Students will:

- 1805.1.1 Describe a variety of careers related to facilities maintenance, and the training necessary to be successful in those careers.
- 1805.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of facilities maintenance.
- 1805.1.3 Identify sources of information about careers in facilities maintenance.

Standard 2: Demonstrate knowledge of basic safety as it relates to maintaining facilities and landscapes. (1805.S.2)

Basic Safety Objectives

Students will:

- 1805.2.1 Recognize and follow general shop safety guidelines.
- 1805.2.3 Select and wear appropriate protective equipment.
- 1805.2.3 Demonstrate proper lifting techniques.
- 1805.2.4 Identify basic types of ladders and scaffolds and safely erect both using proper placement and angle.
- 1805.2.5 Demonstrate proper use and handling of fundamental job related chemicals, including mixing, applying, storing and disposing of chemicals.
- 1805.2.6 Demonstrate the proper selection and use of fire extinguishers.

Standard 3: Demonstrate knowledge of basic blueprint reading. (1805.S.3)

Basic Blueprint Reading Objectives

Students will:

- 1805.3.1 Interpret scale drawings.
- 1805.3.2 Identify and define common architectural drawings symbols.
- 1805.3.3 Demonstrate knowledge of specifications and codes.

Standard 4: Demonstrate the ability to read and follow technical instructions. (1805.S.4)

Read and Follow Technical Instructions Objectives

Students will:

- 1805.4.1 Read and complete work orders.
- 1805.4.2 Read and follow technical instructions in manuals, texts, specifications and codes.

Standard 5: Demonstrate knowledge of basic carpentry skills. (1805.S.5)

Basic Carpentry Skills Objectives

Students will:

- 1805.5.1 Review proper use of a variety of common carpentry tools and equipment to measure, cut and fasten stock.
- 1805.5.2 Select appropriate carpentry materials for a specific job.
- 1805.5.3 Perform maintenance on carpentry tools.
- 1805.5.4 Construct simple wall, floor and roof frames.

Standard 6: Repair or refinish a variety of facility components. (1805.S.6)

Facility Components Objectives

Students will:

- 1805.6.1 Repair a variety of flooring, including repairing vinyl flooring and replacing ceramic floor tile.
- 1805.6.2 Remove and apply new finish to a variety of surfaces using multiple methods and materials.
- 1805.6.3 Properly prepare a wall and hang wallpaper.
- 1805.6.4 Repair window glass by removing glass, measuring and cutting new glass and installing and glazing new window.
- 1805.6.5 Remove and replace damaged window screen.
- 1805.6.6 Repair stair components by removing treads and risers, cutting a new stringer, and replacing treads and risers.
- 1805.6.7 Repair, replace hardware, and install doors.
- 1805.6.8 Properly cut angles and coped joints on molding and install trim, filling nail holes.

Standard 7: Demonstrate the ability to weatherize structures. (1805.S.7)

Weatherize Structures Objectives

Students will:

- 1805.7.1 Caulk windows and doors.
- 1805.7.2 Install weather stripping.

Standard 8: Maintain gutters and down spouts. (1805.S.8)

Gutters And Down Spouts Objectives

Students will:

- 1805.8.1 Join, level and apply caulk to gutters and down spouts.
- 1805.8.2 Clean gutters and down spouts and install leaf guards.

Forestry I

WVEIS Code 1811

This area of study is designed to provide students with basic knowledge and skills in forestry and related occupations. Major instructional concepts included in this area of study are: safety principles in forestry, tree identification, forest protection, basic forest measurement and silvicultural practices.

Standard 1: Practice safety principles in forestry. (1811.S.1)

Forestry Objectives

Students will:

- 1811.1.1 Wear appropriate safety gear.
- 1811.1.2 Maintain a safe working environment.
- 1811.1.3 Identify safety hazards of fire line construction and mop-up.

Standard 2: Identify economic trees in West Virginia. (1811.S.2)

Trees in West Virginia Objectives

Students will:

- 1811.2.1 Identify the following trees: Red Oak, White Ash, White Oak, Basswood, Chestnut Oak, Walnut, Black Oak, Hickory, Scarlet Oak, White Pine, Red Maple, Spruce, Sugar Maple, Hemlock, Black Cherry, Black Locust, Black Birch, Cucumber, Yellow Poplar, Virginia Pine
- 1811.2.2 Identify by leaves.
- 1811.2.3 Identify by bark.
- 1811.2.4 Identify by taste and smell.
- 1811.2.5 Identify by twigs.
- 1811.2.6 Identify by fruit.
- 1811.2.7 Explain tree morphology.

Standard 3: Demonstrate forest fire fighting procedures. (1801.S.3)

Forest Fire Fighting Procedures Objectives

Students will:

- 1811.3.1 Construct fire line using hand tools.
- 1811.3.2 Describe the proper use of fire rake, shovel, drip torch, Pulaski and backpack pump.
- 1811.3.3 Extinguish remaining fire spots after main fire is contained (mop-up).
- 1811.3.4 Determine direction for fire line construction.
- 1811.3.5 Repair and service equipment after fire is extinguished.
- 1811.3.6 Use backpack pump to fight fire directly.

Standard 4: Perform forest measurement techniques. (1801.S.4)

Forest Measurement Techniques Objectives

Students will:

- 1811.4.1 Set up instrument for surveying.
- 1811.4.2 Use compass to maintain direction.
- 1811.4.3 Make linear measurements using surveyor's chain with compass.
- 1811.4.4 Make linear measurements by pacing with compass.
- 1811.4.5 Calculate the number of acres in a timber tract.
- 1811.4.6 Use hand/staff compass to determine bearing or Azimuth.

1811.4.7 Identify units of measurement (mile, rod, chain and acre).

Standard 5: Utilize silviculture treatment for timber stand improvement. (1811.S.5)

Silviculture Treatment Objectives

Students will:

- 1811.5.1 Determine major forest type and primary uses.
- 1811.5.2 Determine proper spacing using D+6 rule.
- 1811.5.3 Use increment borer to determine age and growth rate.
- 1811.5.4 Select and utilize pruning and thinning methods for a timber stand.
- 1811.5.5 Fell and limb trees.

Standard 6: Demonstrate laboratory investigations and hands-on learning.

Laboratory Investigations Objectives

Students will:

- 1811.6.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 1811.6.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 1811.6.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 1811.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations and research.

Forestry II

WVEIS Code 1812

Major instructional concepts included in this area of study are: leadership development, chainsaw operation and safety, timber cruising skills and integration of wildlife habitat management in forestry.

Standard 1: Utilize chainsaw safety. (1812.S.1)

Chainsaw Safety Objectives

Students will:

- 1812.1.1 Identify and use safety clothing and equipment.
- 1812.1.2 Use proper starting techniques.
- 1812.1.3 Identify proper safety rules with 100% accuracy.
- 1812.1.4 Identify and correct hazardous operational conditions.

Standard 2: Perform chainsaw maintenance. (1812.S.2)

Chainsaw Maintenance Objectives

Students will:

- 1812.2.1 Properly sharpen chain.
- 1812.2.2 Determine and adjust chain for proper tension.
- 1812.2.3 Demonstrate proper cleaning and storage of chainsaw.
- 1812.2.4 Replace sprocket on chainsaw.
- 1812.2.5 Replace bar on chainsaw.
- 1812.2.6 Replace broken chain link.
- 1812.2.7 Clean and service carburetor and air cleaner.
- 1812.2.8 Replace chain clutch as needed.
- 1812.2.9 Adjust carburetor for maximum efficiency.
- 1812.2.10 Mix fuel and oil in proper proportions.

Standard 3: Determine Volume of Standing Timber. (1812.S.3)

Standing Timber Objectives

Students will:

- 1812.3.1 Define and calculate board foot and cord wood volumes.
- 1812.3.2 Measure standing trees at diameter breast height using tree stick and diameter tape.
- 1812.3.3 Determine number of logs per tree using tree stick or clinometers.
- 1812.3.4 Record volume number of individual trees using tally sheet method.
- 1812.3.5 Calculate volume of saw logs using Doyle, Scribner and International 1/4" rule.
- 1812.3.6 Calculate volume of pulpwood by cords.

Standard 4: Perform wildlife habitat management. (1812.S.4)

Wildlife Habitat Management Objectives

Students will:

- 1812.4.1 Monitor and improve water quality.
- 1812.4.2 Improve habitat for bird, fish and game.
- 1812.4.3 Understand the importance of the forest, field and edge.
- 1812.4.4 Identify potential den and mast trees.

Standard 5: Perform laboratory investigations. (1812.S.5)

Laboratory Investigations Objectives

Students will:

- 1812.5.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 1812.5.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 1812.5.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 1812.5.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 6: Apply technology the forestry industry. (1812.S.6)

Forestry Industry Objectives

Students will:

- 1812.6.1 Use computers and the World Wide Web (WWW) to solve problems related to work-based experience programs in forestry, locate, evaluate, and collect information from a variety of sources related to forestry, develop positive attitudes toward technology that supports lifelong learning, collaboration, personal pursuits, and productivity.
- 1812.6.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 1812.6.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to forestry.
- 1812.6.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of forestry.

Forestry III

WVEIS Code 1813

This area of study provides instructional concepts in the following areas: personal leadership development, advanced dendrology, safety training, operation and maintenance of forestry equipment and silvicultural applications.

Standard 1: Demonstrate personal leadership skills. (1813.S.1)

Personal Leadership Skills Objectives

Students will:

- 1813.1.1 Describe the parts of a good speech.
- 1813.1.2 Explain how to present a desirable speech.
- 1813.1.3 Correctly conduct research in topics concerning forestry.
- 1813.1.4 Deliver a speech on a forestry topic.

Standard 2: Perform advanced dendrology skills. (1813.S.2)

Dendrology Skills Objectives

Students will:

- 1813.2.1 Identify by flowers.
- 1813.2.2 Identify by growth characteristics.
- 1813.2.3 Identify by site conditions.
- 1813.2.4 Identify by distribution.

Standard 3: Perform forestry safety skills. (1813.S.3)

Forestry Safety Skills Objectives

Students will:

- 1813.3.1 Demonstrate safety with hand tools.
- 1813.3.2 Demonstrate safety with chainsaws.
- 1813.3.3 Demonstrate safety with tractors.
- 1813.3.4 Demonstrate safety on the fire line.

Standard 4: Operate and maintain forestry equipment. (1813.S.4)

Forestry Equipment Objectives

Students will:

- 1813.4.1 Demonstrate the proper use and maintenance of hand tools.
- 1813.4.2 Demonstrate the proper use and maintenance of chainsaws.
- 1813.4.3 Demonstrate the proper use and maintenance of tractors.
- 1813.4.4 Lubricate all grease fittings using proper grease at periodic intervals with appropriate equipment.

Standard 5: Apply silvicultural practices for timber stands. (1813.S.5)

Timber Stands Objectives

Students will:

- 1813.5.1 Demonstrate forest reproduction techniques.
- 1813.5.2 Demonstrate the technique of girdling in the process of removing undesirable trees.

1813.5.3 Define clear-cut.

Standard 6: Perform laboratory investigations. (1813.S.6)

Laboratory Investigations Objectives

Students will:

- 1813.6.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 1813.6.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 1813.6.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 1813.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 7: Apply technology to the forestry industry. (1813.S.7)

Forestry Industry Objectives

Students will:

- 1813.7.1 Use computers and the World Wide Web (WWW).
- 1813.7.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 1813.7.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to forestry.
- 1813.7.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of forestry.

Forestry IV

WVEIS Code 1814

Forestry IV provides instructional concepts in the following areas: parliamentary procedure, advanced leadership skills, safety in fire fighting, forest surveying and wood product utilization.

Standard 1: Demonstrate parliamentary procedure. (1814.S.1)

Parliamentary Procedure Objectives

Students will:

- 1814.1.1 Identify proper procedures for conducting a meeting.
- 1814.1.2 Write and present a committee report.
- 1814.1.3 Identify components of a program of activities.

Standard 2: Apply safety procedures of fire line construction. (1814.S.2)

Fire Line Construction Objectives

Students will:

- 1814.2.1 Explain fire line safety.
- 1814.2.2 Explain fire line construction.
- 1814.2.3 Explain forest fire mop-up.
- 1814.2.4 Explain the use of topographic maps in locating access roads and trails.
- 1814.2.5 Explain the use of topographic maps in fire location.
- 1814.2.6 Repair, service and store equipment.

Standard 3: Use forest surveying equipment. (1814.S.3)

Forest Surveying Equipment Objectives

Students will:

- 1814.3.1 Interpret surface features using aerial photography and topographic maps.
- 1814.3.2 Conduct a boundary survey using a hand compass and pacing.
- 1814.3.3 Visit a courthouse and conduct a title search.
- 1814.3.4 Plot bearings from deeds.
- 1814.3.5 Calculate percent slope using a clinometer.
- 1814.3.6 Orientate topographic map using hand compass.
- 1814.3.7 Utilize a GPS receiver to locate and mark points of reference.

Standard 4: Use best management practices in forest road construction. (1814.S.4)

Forest Road Construction Objectives

Students will:

- 1814.4.1 Lay out roads in compliance with West Virginia forest standards.
- 1814.4.2 Describe maintenance procedures for drainage systems (culverts, ditches, etc.) in controlling soil erosion.
- 1814.4.3 Explain the importance of installing culverts, water breaks and Awoods@ bridges.
- 1814.4.4 Design skid roads.
- 1814.4.5 Monitor water quality.
- 1814.4.6 Reseed skid trails and log landings.

Standard 5: Process, measure and market wood products. (1814.S.5)

Wood Products Objectives

Students will:

- 1814.5.1 Demonstrate competency in felling, bucking and skidding selected trees.
- 1814.5.2 Scale logs and lumber.
- 1814.5.3 Explore and explain various marketing opportunities for forest products.

Standard 6: Conduct laboratory investigations. (1814.S.6)

Laboratory Investigations Objectives

Students will:

- 1814.6.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 1814.6.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 1814.6.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 1814.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 7: Apply technology to real world forestry problems. (1814.S.7)

Forestry Problems Objectives

Students will:

- 1814.7.1 Use computers and the World Wide Web (WWW) to solve problems, locate, evaluate, and collect information from a variety of sources, develop positive attitudes toward technology, personal pursuits, and productivity.
- 1814.7.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 1814.7.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to forestry.
- 1814.7.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of forestry.

Forestry V

WVEIS Code 1815

This course provides instruction in the following areas: forestry equipment use, timber cruising systems and application of best management practices to forestry.

Standard 1: Identify and use forestry equipment. (1815.S.1)

Forestry Equipment Objective

Students will:

- 1815.1.1 Identify and use the following: tree scale stick, increment bore, drip torch, fire rake, clinometers, hand compass, soil tube, jacobs staff, staff compass, chaps, hard hat/face, shield, pulaski, tree marking gun, wedge prism, stereoscope, log rule, data recorder, plastic flagging, chainsaw, ear protection, dot grid, and a dibble or tree planter.

Standard 2: Conduct a timber cruise. (1815.S.2)

Timber Cruise Objectives

Students will:

- 1815.2.1 Mark boundaries and corners of tract.
- 1815.2.2 Use compass to direct cruising operation.
- 1815.2.3 Measure distance between plot center (by pacing).
- 1815.2.4 Record trees using tally sheet method.
- 1815.2.5 Use wedge prism (BAF 10 or BAF 20).
- 1815.2.6 Calculate board foot volumes using double log scale.

Standard 3: Apply best management practices in a forestry setting. (1815.S.3)

Forestry Setting Objectives

Students will:

- 1815.3.1 Lay out roads in compliance with West Virginia forest standards.
- 1815.3.2 Describe maintenance procedures for drainage systems (culverts, ditches, etc.) in controlling soil erosion.
- 1815.3.3 Understand the importance of installing culverts, water breaks and "woods" bridges.
- 1815.3.4 Design skid roads.
- 1815.3.5 Demonstrate competency in felling, bucking and skidding selected trees.
- 1815.3.6 Scale logs and lumber.
- 1815.3.7 Monitor water quality.
- 1815.3.8 Reseed skid trails and log landings.

Standard 4: Conduct safe laboratory investigations. (1815.S.4)

Laboratory Investigations Objectives

Students will:

- 1815.4.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 1815.4.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 1815.4.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 1815.4.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 5: Apply technology to forestry industry. (1815.S.5)

Forestry Industry Objectives

Students will:

- 1815.5.1 Use computers and the World Wide Web (WWW) to solve problems related to forestry, locate, evaluate, and collect information related to forestry, develop positive attitudes toward technology, support lifelong learning, collaboration, personal pursuits, and productivity.
- 1815.5.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 1815.5.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to forestry.
- 1815.5.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of forestry.

Standard 6: Demonstrate process/workplace skills used in forestry. (1815.S.6)

Process/Workplace Skills Objectives

Students will:

- 1815.6.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 1815.6.2 Explore careers available in forestry.
- 1815.6.3 Use a variety of sources to investigate the educational requirements of various careers in forestry.
- 1815.6.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 1815.6.5 Demonstrate correct language usage in all oral and written work.
- 1815.6.6 Perform effectively in both leadership and non-leadership roles.
- 1815.6.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 1815.6.8 Participate as a team member to complete a variety of assignments.

Outdoor Recreation

WVEIS Code 1816

This area of study is designed to provide students with knowledge and skills in outdoor recreation that will be useful in various occupations in the field. Major emphasis will be on careers, public relations and teamwork.

Standard 1: Research career development in outdoor recreation. (1816.S.1)

Outdoor Recreation Objectives

Students will:

- 1816.1.1 Identify regional career opportunities in outdoor recreation including, park ranger, recreation manager, instructor, conservation officer, first aid/safety expert, entertainment manager, business manager, outdoor guide, youth camp operator, campground owner, riding stable owner and lifeguard.
- 1816.1.2 Profile outdoor recreation specialists.
- 1816.1.3 Develop teamwork skills and activities.
- 1816.1.4 Develop public relation skills.

Standard 2: Participate in outdoor safety activities. (1816.S.2)

Outdoor Safety Activities Objectives

Students will:

- 1816.2.1 Obtain Red Cross first aid certificate.
- 1816.2.2 Obtain Red Cross adult CPR certificate.
- 1816.2.3 Identify potential outdoor safety hazards.
- 1816.2.4 Identify poisonous plants.
- 1816.2.5 Identify poisonous insects.
- 1816.2.6 Identify poisonous animals.
- 1816.2.7 Identify safety inspection procedures for outdoor recreation equipment.

Standard 3: Identify natural resource and recreation areas. (1816.S.3)

Natural Resource and Recreation Areas Objectives

Students will:

- 1816.3.1 Describe geological formations.
- 1816.3.2 Recognize services required for recreational areas.
- 1816.3.3 Recognize facilities required for recreational areas.
- 1816.3.4 Identify endangered species of plants and animals.
- 1816.3.5 Identify wetlands and riparian zones.
- 1816.3.6 Describe local, state and federal laws related to recreational enterprises.

Standard 4: Recognize business opportunities and promotions in outdoor recreation. (1816.S.4)

Business Opportunities and Promotions Objectives

Students will:

- 1816.4.1 Recognize income potential from various types of recreational enterprises.
- 1816.4.2 Identify business procedures required of recreational enterprises.
- 1816.4.3 Design advertising media to promote a recreational area effectively.

Standard 5: Safely conduct laboratory investigations. (1816.S.5)

Laboratory Investigations Objectives

Students will:

- 1816.5.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 1816.5.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 1816.5.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 1816.5.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 6: Apply technology to real world problems. (1816.S.6)

Real World Objectives

Students will:

- 1816.6.1 Use computers and the World Wide Web (WWW) to solve problems related programs in outdoor recreation, locate, evaluate, and collect information from a variety of sources related to outdoor recreation, develop positive attitudes toward technology, support lifelong learning, collaboration, personal pursuits, and productivity.
- 1816.6.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 1816.6.3 Use cameras and/or camcorders to record activities and progress of special projects in the area of outdoor recreation.

Standard 7: Demonstrate process/work place skills used in outdoor recreation. (1816.S.7)

Process/Work Place Skills Objectives

Students will:

- 1816.7.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 1816.7.2 Explore careers available in outdoor recreation.
- 1816.7.3 Use a variety of sources to investigate the educational requirements of various careers in biotechnology and related sciences.
- 1816.7.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 1816.7.5 Demonstrate correct language usage in all oral and written work.
- 1816.7.6 Perform effectively in both leadership and non-leadership roles.
- 1816.7.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 1816.7.8 Participate as a team member to complete a variety of assignments.

Wildlife Management

WVEIS Code 1817

This course provides instruction and training in leadership, history of fish and wildlife, wildlife management concepts, water and water quality, habitat management, life history and wildlife values as a natural resource.

Standard 1: Study the history of wildlife management. (1817.S.1)

History of Wildlife Management Objectives

Students will:

- 1817.1.1 Define and describe wildlife trends and their impact on management.
- 1817.1.2 Identify wildlife legalities and ethics.
- 1817.1.3 Define natural resources conservation.

Standard 2: Describe the concepts of wildlife management. (1817.S.2)

Concepts of Wildlife Management Objectives

Students will:

- 1817.2.1 Define succession stages related to wildlife management.
- 1817.2.2 Describe carrying capacity as related to wildlife.
- 1817.2.3 Define horizontal and vertical structuring.
- 1817.2.4 Explain ecological principles and their application to wildlife management.

Standard 3: Determine wildlife habitat management practices. (1817.S.3)

Wildlife Habitat Management Practices Objectives

Students will:

- 1817.3.1 Explain ecological principles applied to fish and wildlife.
- 1817.3.2 Design a wildlife management plan.
- 1817.3.3 Identify forest management practices for improving habitat.
- 1817.3.4 Identify agricultural management practices for improvement of habitat.
- 1817.3.5 Define and describe wetlands and their use.
- 1817.3.6 Identify government assistance available for habitat improvement.
- 1817.3.7 Construct and erect wildlife feeders/nest boxes.

Standard 4: Use technology to identify animal life histories. (1817.S.4)

Animal Life Histories Objectives

Students will:

- 1817.4.1 Identify life cycles of wildlife species.
- 1817.4.2 Describe interrelationship of wildlife species.
- 1817.4.3 Identify common relationships between humans and wildlife.
- 1817.4.4 Search the Internet to secure wildlife information.

Standard 5: Determine water and water quality relationships for conservation. (1817.S.5)

Water Quality Relationships Objectives

Students will:

- 1817.5.1 Identify sources of water and water pollutants.

- 1817.5.2 Explain the effects to water pollution on the ecosystem.
- 1817.5.3 Identify point and non-point source pollution and describe possible controls.
- 1817.5.4 Describe wetlands, their use, importance and preservation.
- 1817.5.5 Explain methods of protecting water sources.

Standard 6: Describe wildlife values as a resource to society. (1817.S.6)

Wildlife Values Objectives

Students will:

- 1817.6.1 Identify commercial value of fish and wildlife resources and economic benefit to people.
- 1817.6.2 Define recreational values of fish and wildlife.
- 1817.6.3 Describe social values of fish and wildlife.
- 1817.6.4 Identify esthetic values of fish and wildlife resources.
- 1817.6.5 Describe scientific and educational values of fish and wildlife.
- 1817.6.6 Evaluate negative impact of wild animals on humans.

Concrete Finishing

WVEIS Code 1821

This course will apply the concepts, applications, and techniques necessary for various phases of concrete construction.

Standard 1: Understand concrete construction and finishing concepts. (1821.S.1)

Concrete Finishing Objectives

Students will:

- 1821.1.1 Define terms associated with concrete construction.
- 1821.1.2 Identify the composition and characteristics of concrete.
- 1821.1.3 Identify the uses of concrete as a building material.
- 1821.1.4 Identify the effect of craftsmanship on finished concrete.
- 1821.1.5 Explain the concrete construction process.
- 1821.1.6 Identify site operation work requirements.
- 1821.1.7 Explain the career potentials in concrete construction and finishing.

Standard 2: Understand and apply safety used in concrete construction. (1821.S.2)

Concrete Construction Objectives

Students will:

- 1821.2.1 Describe and wear different types of safety gear for the work site.
- 1821.2.2 State the guidelines for dressing appropriately for concrete work.
- 1821.2.3 Describe how to safely handle concrete when forming, placing, curing, and finishing.
- 1821.2.4 Describe safety precautions to follow when working in extreme heat and cold.
- 1821.2.5 Describe safety precautions to follow when working with hazardous materials.
- 1821.2.6 Describe proper procedures for handling and maintaining concrete construction tools safely.

Standard 3: Analyze the properties of concrete. (1821.S.3)

Properties of Concrete Objectives

Students will:

- 1821.3.1 Describe the properties of concrete.
- 1821.3.2 Explain how the properties of concrete are used in construction.
- 1821.3.3 Determine how the ingredients of concrete influence mix, placement, finishing, durability, and performance.
- 1821.3.4 Describe quality-control tests on concrete ingredients, fresh concrete, and hardened concrete.
- 1821.3.5 Mix a test batch of concrete.
- 1821.3.6 Perform a slump test.

Standard 4: Identify tools and equipment used in concrete construction. (1821.S.4)

Tools and Equipment Objectives

Students will:

- 1821.4.1 Name the tools used in placing and finishing concrete.
- 1821.4.2 Name the power equipment used in placing and finishing concrete.
- 1821.4.3 Describe how each tool is used.
- 1821.4.4 Describe how the power equipment is used.
- 1821.4.5 Associate trade terms with the appropriate tools and equipment.

Standard 5: Prepare worksite for concrete placement. (1821.S.5)

Worksite Objectives

Students will:

- 1821.5.1 Describe basic site layout using levels and measuring tools.
- 1821.5.2 Properly locate, grade, and build forms for horizontal placement.
- 1821.5.3 Perform compaction activities on subgrades.
- 1821.5.4 Describe various joints and where to locate them.
- 1821.5.5 Describe various reinforcements and how to place them.
- 1821.5.6 Describe information needed when ordering concrete.

Standard 6: Placing concrete. (1821.S.6)

Placing Concrete Objectives

Students will:

- 1821.6.1 Describe how concrete is conveyed and placed.
- 1821.6.2 Draw up a pre-placement checklist.
- 1821.6.3 Demonstrate the use of equipment and tools for placing concrete.
- 1821.6.4 Demonstrate the process of depositing, spreading, consolidating, and striking off concrete in a form.
- 1821.6.5 Associate trade names with the appropriate processes and equipment.

Standard 7: Apply basic concrete finishing techniques. (1821.S.7)

Finishing Techniques Objectives

Students will:

- 1821.7.1 Describe the basic finishing process.
- 1821.7.2 Use the following finishing hand tool: float, edger, groover, and trowel.
- 1821.7.3 Mark and cut joints with a saw.
- 1821.7.4 Apply a broom finish.
- 1821.7.5 Apply a rubbing finish.
- 1821.7.6 Associate trade terms with the appropriate processes and equipment.

Standard 8: Curing and protecting concrete. (1821.S.8)

Curing and Protecting Objectives

Students will:

- 1821.8.1 Describe the process of curing concrete.
- 1821.8.2 Identify methods of curing concrete.
- 1821.8.3 Describe how each method is applied.
- 1821.8.4 Identify when each method is used.
- 1821.8.5 Associate trade terms with the appropriate processes and equipment.

Standard 9: Troubleshooting basic concrete construction problems. (1821.S.9)

Construction Problems Objectives

Students will:

- 1821.9.1 Describe a basic troubleshooting methodology that can be used to identify a variety of concrete construction problems and their causes.
- 1821.9.2 Identify problems with fresh concrete and describe ways to prevent them.
- 1821.9.3 Identify different concrete defects such as crazing, cracking, dusting, scaling, popouts, and

efflorescence, and describe ways to prevent them.

Finishing Carpentry

WVEIS Code 1823

This course will introduce students to safe, efficient and acceptable practices involved in estimating for and installing interior and exterior wall, ceiling and floor coverings.

Standard 1: Estimate and install insulation and vapor barriers in walls, ceilings and floors. (1823.S.1)

Finish Carpentry Objectives

Students will:

- 1823.1.1 Install insulation in walls, ceiling, and floors.
- 1823.1.2 Explain the necessity for vapor barriers and properly install them.

Standard 2: Cover interior walls. (1823. S.2)

Interior Walls Objectives

Students will:

- 1823.2.1 Estimate and hang dry wall on interior walls and ceiling.
- 1823.2.2 Properly finish dry wall (nail holes, seams, corners).
- 1823.2.3 Prime and paint interior walls.
- 1823.2.4 Properly install paneling and appropriate trim.

Standard 3: Finish interior of a construction project. (1823.S.3)

Finish Interior Objectives

Students will:

- 1823.3.1 Install interior doors, door locksets, and windows.
- 1823.3.2 Cut and install baseboards, and door and window casings.
- 1823.3.3 Install various wall covering materials.
- 1823.3.4 Cut and install various floor coverings.
- 1823.3.5 Install cabinets.

Standard 4: Finish exterior of a construction project. (1823.S.4)

Finish Exterior Objectives

Students will:

- 1823.4.1 Estimate and install fascia and soffit on eaves and rake.
- 1823.4.2 Install attic ventilation.
- 1823.4.3 Properly install exterior siding.
- 1823.4.4 Paint exterior surfaces.

Foundations and Framing

WVEIS Code 1825

This course will introduce students to safe, efficient and acceptable practices involved in estimating for and constructing building foundations and rough framing.

Standard 1: Estimate and construct foundation. (1825.S.1)

Foundation Objectives

Students will:

- 1825.1.1 Use transit to turn and square corners, read and mark elevations and excavation lines and to set grade stakes.
- 1825.1.2 Estimate and install batter boards.
- 1825.1.3 Estimate and install foundation footer forms and expansion joints in preparation for concrete pour.
- 1825.1.4 Build stair forms for concrete steps.
- 1825.1.5 Estimate concrete yardage, pour and finish concrete.

Standard 2: Estimate and construct floor framing. (1825.S.2)

Floor Framing Objectives

Students will:

- 1825.2.1 Estimate, lay out and install a built up wood girder, termite protection, and sill plate.
- 1825.2.2 Estimate, lay out and install a floor frame, including: band boards, floor joists, cross bridging, openings and sub-floor.

Standard 3: Estimate and construct wall framing. (1825.S.3)

Wall Framing Objectives

Students will:

- 1825.3.1 Layout, erect and align exterior walls.
- 1825.3.2 Layout, erect and align interior partitions.
- 1825.3.3 Construct rough opening headers.
- 1825.3.4 Install second top plates to walls and partitions.
- 1825.3.5 Install backing for fixtures, cabinets, and bulkhead.
- 1825.3.6 Install sheathing on exterior walls.
- 1825.3.7 Install windows and doors in exterior wall rough openings.
- 1825.3.8 Layout and install ceiling joists.
- 1825.3.9 Cut and assemble stringers, risers, and treads for a basic set of stairs.

Standard 4: Estimate and construct roof framing. (1825.S.4)

Roof Framing Objectives

Students will:

- 1825.4.1 Layout, cut and install king posts and ridge boards.
- 1825.4.2 Layout, cut and install roof rafters.
- 1825.4.3 Layout, cut and install rough fascia, gable end studs, and collar beams.
- 1825.4.4 Install roof sheathing, drip edge, asphalt or fiberglass shingles, and ridge vents.

Fundamentals of Building Construction

WVDE Code 1827

This course will introduce students to basic knowledge of building plans and materials and safe work habits used in general building construction occupations.

Standard 1: Identify, explore, and evaluate career opportunities related to building construction. (1827.S.1)

Career Opportunities Objectives

Students will:

- 1827.1.1 Describe a variety of careers related to building construction, and the training necessary to be successful in those careers.
- 1827.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of building construction.
- 1827.1.3 Identify sources of information about careers in building construction.

Standard 2: Identify and demonstrate proper personal safety practices. (1827.S.2)

Safety Practices Objectives

Students will:

- 1827.2.1 Review and follow general construction safety guidelines.
- 1827.2.2 Demonstrate proper lifting techniques.
- 1827.2.3 Identify and demonstrate proper use and care of all basic personal safety equipment including hearing and eye protection, hard hats and shoes.

Standard 3: Identify basic hand tools and demonstrate safe and appropriate use. (1827.S.3)

Hand Tools Objectives

Students will:

- 1827.3.1 Choose the proper hand tools for given applications, and describe the proper care and maintenance of each.
- 1827.3.2 Demonstrate adjustments possible with each tool.

Standard 4: Identify basic power tools (portable and stationary) and demonstrate safe and appropriate use. (1827.S.4)

Power Tools Objectives

Students will:

- 1827.4.1 Choose proper power tool for a given application.
- 1827.4.2 Recognize and identify appropriate blade or bit for given situation, and demonstrate the ability to change blades and bits on cutting tools.
- 1827.4.3 Demonstrate possible adjustments to power tools.
- 1827.4.4 Describe proper care and maintenance of power tools and machinery.

Standard 5: Demonstrate proper and safe use of ladders and scaffolds. (1827.S.5)

Ladders and Scaffolds Objective

Students will:

- 1827.5.1 Identify basic types of ladders and scaffolds and safely erect both using proper placement and

angle.

Standard 6: Demonstrate the ability to interpret blueprints. (1827.S.6)

Blueprints Objectives

Students will:

- 1827.6.1 Review the basic information found in foundation and floor plans, including dimensions, symbols and scale.
- 1827.6.2 Prepare a written cost estimate for a construction project.
- 1827.6.3 Identify information on window and door schedules.
- 1827.6.4 Interpret blueprints for plumbing and wiring specifications.
- 1827.6.5 Determine fixtures needed for a construction project.

Standard 7: Identify and properly use a variety of framing materials. (1827.S.7)

Framing Materials Objectives

Students will:

- 1827.7.1 Identify basic framing materials, including solid lumber, plywood, and various fasteners.
- 1827.7.2 Perform various forming, separating, and combining processes on construction materials.

Masonry and Plumbing

WVEIS Code 1829

This course will introduce students to safe, efficient and acceptable practices involved in estimating for and constructing masonry and plumbing systems.

Standard 1: Estimate, layout and prepare masonry materials for a foundation. (1829.S.1)

Foundation Objectives

Students will:

- 1829.1.1 Demonstrate safe work habits while working with masonry materials and equipment.
- 1829.1.2 Lay out and square a foundation using a transit and the 6-8-10 method.
- 1829.1.3 Discuss the size of footings for various widths of block, and pour a footer.
- 1829.1.4 Properly mix and spread mortar, build corners and foundation, install stretcher blocks and sill anchors.
- 1829.1.5 Properly install waterproofing and ventilation in a foundation.

Standard 2: Rough in a plumbing drain system. (1829.S.2)

Plumbing Drain System Objectives

Students will:

- 1829.2.1 Install drain lines according to code.
- 1829.2.2 Cut copper and plastic tubing for water supply.
- 1829.2.3 Apply appropriate fittings and fastening techniques to copper and plastic tubing.

Standard 3: Install finishing plumbing. (1829.S.3)

Finishing Plumbing Objectives

Students will:

- 1829.3.1 Properly install various plumbing fixtures (commode, lavatory, bath tub and/or shower).
- 1829.3.2 Install shut-off valves, faucets and screw-on fittings.
- 1829.3.3 Install hot water tank.

Basic Darkroom Procedures

WVEIS Code 1831

This course will introduce students to the basic fundamentals of darkroom procedures, photographing and developing line and halftone negatives, and process color printing.

Standard 1: Demonstrate proper darkroom procedures. (1831.S.1)

Darkroom Procedures Objectives

Students will:

- 1831.1.1 Identify different types of process cameras, and list the basic parts of the camera.
- 1831.1.2 Identify and prepare film developing trays.
- 1831.1.3 Identify various safe lights and select proper safelight for different films.
- 1831.1.4 Determine base and emulsion sides of film.
- 1831.1.5 Name three (3) methods of developing film.
- 1831.1.6 Select best F-stop, temperature and percentage for developing film.

Standard 2: Demonstrate safe work habits while working with graphic arts materials and equipment. (1831.S.2)

Safe Work Habits Objectives

Students will:

- 1831.2.1 Identify and practice safety rules used in the darkroom.
- 1831.2.2 Describe safe use and disposal of toxic and/or flammable substances and chemicals.

Standard 3: Demonstrate the ability to photograph and develop line negatives. (1831.S.3)

Line Negatives Objectives

Students will:

- 1831.3.1 Identify various types of film used in a process camera, and handle film properly.
- 1831.3.2 Describe camera operator's sensitivity guide.
- 1831.3.3 Prepare camera for basic exposure.
- 1831.3.4 Produce and evaluate line negatives.

Standard 4: Produce halftone negatives. (1831.S.4)

Halftone Negatives Objectives

Students will:

- 1831.4.1 Compute main and flash exposures.
- 1831.4.2 Describe the proper care of contact screens.
- 1831.4.3 Expose and develop a halftone negative.
- 1831.4.4 Identify three (3) areas of halftone negatives.
- 1831.4.5 List three (3) exposures for halftone negatives.
- 1831.4.6 Identify and evaluate halftone dots.
- 1831.4.7 Describe a duotone.

Standard 5: Identify the basic principles of process color printing. (1831.S.5)

Color Printing Objectives

Students will:

- 1831.5.1 Describe flat and process color printing.
- 1831.5.2 Describe the difference between additive and subtractive colors, and name the four process color inks.
- 1831.5.3 List two methods of process color separation.
- 1831.5.4 Identify proper filters for process color negatives.
- 1831.5.5 Describe screen angle for process color negatives.
- 1831.5.6 Select proper film for process color separations.
- 1831.5.7 Identify color separation negatives.

Electronic Imaging

WVEIS Code 1833

This course will introduce students to desktop publishing, including basic typesetting, image designs, proofreading, and computer scanning operations.

Standard 1: Perform basic typesetting procedures in desktop publishing images. (1833.S.1)

Typesetting Procedures Objectives

Students will:

- 1833.1.1 Identify and describe basic desktop publishing tools, equipment, and materials.
- 1833.1.2 Identify and properly use desktop publishing menus, toolboxes, and options.
- 1833.1.3 Design proper page layout and size, indicating guidelines, fold lines, and margins.
- 1833.1.4 Select font and point sizes.
- 1833.1.5 Perform copy fitting techniques.
- 1833.1.6 Setup printer for copy and make a print.

Standard 2: Identify appropriate proofreading knowledge and use. (1833.S.2)

Proofreading Objectives

Students will:

- 1833.2.1 Identify proofreading marks.
- 1833.2.2 Make corrections on galley proofs.
- 1833.2.3 Perform proper proofreading techniques by marking up copy for production of a printed piece.

Standard 3: Perform scanning operations. (1833.S.3)

Scanning Operations Objectives

Students will:

- 1833.3.1 Identify scanner hardware and software and describe its basic components, operations and limitations.
- 1833.3.2 Demonstrate appropriate scanner/program operations for line and continuous tone work.
- 1833.3.3 Place scanned graphics and /or photos into existing page layouts.

Standard 4: Operate digital cameras and software available for digital printing. (1833.S.4)

Digital Printing Objectives

Students will:

- 1833.4.1 Identify features of different types of digital cameras and printing equipment.
- 1833.4.2 Take pictures and transfer images to the computer using different types of digital cameras.
- 1833.4.3 Manipulate and organize images transferred from digital cameras.
- 1833.4.4 Utilize digital printing processes.

Fundamentals of Graphic Design and Production WVEIS Code 1835

This course will introduce students to the basic fundamentals of the graphic communications industry. Students will become familiar with safety in the graphic arts lab and basic techniques in drawing and illustration.

Standard 1: Demonstrate knowledge of career opportunities in graphic design and production. (1835.S.1)

Career Opportunities Objectives

Students will:

- 1835.1.1 Describe a variety of careers related to graphic design and production, and the training necessary to be successful in those careers.
- 1835.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of graphic design and production.
- 1835.1.3 Identify sources of information about careers in graphic design and production.

Standard 2: Identify a variety of basic graphic design equipment and materials. (1835.S.2)

Equipment and Materials Objectives

Students will:

- 1835.2.1 Identify and describe a variety of major printing processes.
- 1835.2.2 Name types of materials on which printing is done.
- 1835.2.3 Identify basic tools used in the graphic arts lab.

Standard 3: Demonstrate safe work habits in the graphic arts lab. (1835.S.3)

Safe Work Habits Objectives

Students will:

- 1835.3.1 Demonstrate job-related safety precautions and procedures regarding use of materials and equipment in the graphic arts lab.
- 1835.3.2 Describe proper precautions when handling toxic or flammable chemicals.

Standard 4: Identify legal restrictions regarding copy limitations. (1835.S.4)

Copy Limitations Objectives

Students will:

- 1835.4.1 Name three (3) elements of a copyright notice.
- 1835.4.2 Identify items that may and may not be copyrighted, and describe procedures to obtain permission to reproduce copyrighted materials.

Standard 5: Introduce design elements and principles to graphic applications. (1835.S.5)

Graphic Applications Objectives

Students will:

- 1835.5.1 Incorporate the design principles of balance, eye travel, contrast, repetition, focal point, and unity when developing illustrations.
- 1835.5.2 Differentiate between line, value, texture, depth, color, shape and rhythm.
- 1835.5.3 Using desktop publishing software, develop a three-panel brochure using appropriate layout,

type, and clip art.

Standard 6: Demonstrate the principles of job planning and layout when producing layouts to customer specifications. (1835.S.6)

Customer Specifications Objectives

Students will:

- 1835.6.1 Identify the elements for layouts, including: headline, subhead, copy-block, illustrations/photos, negative space, etc.
- 1835.6.2 Produce thumbnail sketches that reflect client expectations.
- 1835.6.3 Apply the inch/point/pica scales during layout through the mechanical preparation process.
- 1835.6.4 Identify and apply a variety of font styles, typefaces, and hand lettering.
- 1835.6.5 Incorporate hand and computer generated artwork and screen tints into layouts.
- 1835.6.6 Use a variety of layout tools, including: compasses, triangles, t-squares, templates, and French curves into layout and finished art preparation processes.
- 1835.6.7 Develop rough layouts.
- 1835.6.8 Choose paper stock, other medium, and ink colors for layouts.
- 1835.6.9 Develop a comprehensive layout, both hand and computer generated.

Graphic Communications

WVEIS Code 1837

This course will introduce students to diffusion transfer principles, electrostatic platemaking, offset troubleshooting, multicolor press operations, advanced darkroom and developing procedures and preparations, and job ticket orders.

Standard 1: Demonstrate knowledge of diffusion transfer principles. (1837.S.1)

Diffusion Transfer Principles Objectives

Students will:

- 1837.1.1 Identify basic diffusion transfer processing equipment and materials for making line prints.
- 1837.1.2 Make a diffusion transfer halftone print.

Standard 2: Identify and produce an electrostatic plate. (1837.S.2)

Electrostatic Plate Objectives

Students will:

- 1837.2.1 Identify electrostatic platemaking materials and equipment.
- 1837.2.2 Prepare, process and evaluate an electrostatic plate.

Standard 3: Perform basic offset troubleshooting and preventive maintenance. (1837.S.3)

Maintenance Objectives

Students will:

- 1837.3.1 List conditions associated with paper stock feeding problems, adjust double-sheet detector, pile height, and pull-out rollers, and adjust feeder system for various paper weights.
- 1837.3.2 Change blanket and dampening roller covers.
- 1837.3.3 Deglaze press ink rollers.
- 1837.3.4 Adjust plate to blanket pressure and blanket to impressive cylinder pressure.
- 1837.3.5 Adjust dampening roller and press ink form roller pressure.
- 1837.3.6 Check press for register.
- 1837.3.7 Perform monthly lubrication routine.
- 1837.3.8 Check feed roller pressure.

Standard 4: Perform basic press operation to produce multicolor printed material. (1837.S.4)

Basic Press Operation Objectives

Students will:

- 1837.4.1 Print a duotone and a four-color process job.
- 1837.4.2 Perform basic press wash-up procedures.
- 1837.4.3 Print a multicolor job two-sided.
- 1837.4.4 Identify printed order of process color inks.
- 1837.4.5 Identify ink-water problems.

Standard 5: Demonstrate advanced darkroom and film developing procedures. (1837.S.5)

Darkroom and Film Developing Procedures Objectives

Students will:

- 1837.5.1 Describe standard exposure tests for line photography.

- 1837.5.2 Conduct exposure tests for contact screens.
- 1837.5.3 Select proper filter for color separation negatives.
- 1837.5.4 Identify and calculate exposures for color separation negatives.
- 1837.5.5 Set exposure computer for halftone density range for highlight and shadow areas.
- 1837.5.6 Describe a bump exposure.

Standard 6: Calculate and prepare job ticket orders. (1837.S.6)

Job Ticket Orders Objectives

Students will:

- 1837.6.1 Describe the production work-flow of a job.
- 1837.6.2 Prepare a production information job ticket/jacket.
- 1837.6.3 Determine the most feasible method of production and calculate production costs.

Image Assembly and Platemaking

WVEIS Code 1839

This course will introduce students to the fundamentals of image assembly and platemaking, including: film masking, platemaking, principles of offset platemaking, and copy paste-up principles and procedures.

Standard 1: Perform copy paste-up principles and procedures. (1839.S.1)

Copy Paste-Up Objectives

Students will:

- 1839.1.1 Identify various types of camera copy.
- 1839.1.2 Identify and properly use a variety of paste-up tools, materials and equipment.
- 1839.1.3 Calculate reductions and enlargements.
- 1839.1.4 Indicate guidelines on a paste-up, and center copy.
- 1839.1.5 Crop photographs.
- 1839.1.6 Describe screen tints.
- 1839.1.7 Identify a combination paste-up.
- 1839.1.8 Prepare a complete layout for camera-ready copy.

Standard 2: Demonstrate knowledge of film masking and assembly by properly preparing a flat. (1839.S.2)

Preparing a Flat Objectives

Students will:

- 1839.2.1 Identify basic tools, materials and equipment used in film masking.
- 1839.2.2 Identify parts of a flat.
- 1839.2.3 Position and tape both line and halftone negatives to masking sheet, then cut windows in flat.
- 1839.2.4 Prepare an un-ruled masking sheet.
- 1839.2.5 Prepare and opaque negatives.
- 1839.2.6 Identify register marks.
- 1839.2.7 Prepare flats for a step-and-repeat exposure and a double-burn exposure.
- 1839.2.8 Select appropriate screen tint and percentage.

Standard 3: Perform the basic techniques and principles of offset platemaking. (1839.S.3)

Platemaking Objectives

Students will:

- 1839.3.1 Identify various types of plate ends.
- 1839.3.2 Identify the basic areas of an offset plate.
- 1839.3.3 List types of plate materials, and describe their proper care.
- 1839.3.4 Identify plate exposure equipment and determine the correct plate exposure for a given situation.
- 1839.3.5 Describe a ten-step exposure guide.
- 1839.3.6 Expose a step-and-repeat plate and a double-burn plate.
- 1839.3.7 Develop a plate using a two-step method.
- 1839.3.8 Develop a subtractive plate.
- 1839.3.9 Prepare gum-arabic solution, gum and store plates.
- 1839.3.10 Describe a pin register system.

Offset Press and Binding Process

WVEIS Code 1841

This course will introduce students to the fundamentals of operating an offset press, knowledge of papers, and cutting and binding operations.

Standard 1: Demonstrate knowledge of offset press fundamentals. (1841.S.1)

Offset Press Objectives

Students will:

- 1841.1.1 Explain the principle behind offset printing.
- 1841.1.2 Identify the basic systems of a sheet-fed press.
- 1841.1.3 Determine pH of fountain solution and properly mix fountain solution.
- 1841.1.4 List basic press operation and wash-up procedures.

Standard 2: Identify components of typical offset press system. (1841.S.2)

Components of Offset Press Objectives

Students will:

- 1841.2.1 Name the three main cylinders of an offset press.
- 1841.2.2 Identify components of the inking system, dampening system, feeder system, register board, and delivery system.
- 1841.2.3 Identify operator control features.

Standard 3: Operate an offset press. (1841.S.3)

Operate Offset Press Objectives

Students will:

- 1841.3.1 Read production information on job ticket.
- 1841.3.2 Describe and perform proper safety precautions during press operations.
- 1841.3.3 Prepare fountain concentrate and dampening system.
- 1841.3.4 Select color of ink and prepare the inking system.
- 1841.3.5 Install offset plate.
- 1841.3.6 Setup feeder system.
- 1841.3.7 Select proper paper size and weight.
- 1841.3.8 Prepare register board and paper delivery system.
- 1841.3.9 Print a single color job.
- 1841.3.10 Print a job on NCR stock.
- 1841.3.11 Print a multicolor job.
- 1841.3.12 Print a job work and tumble.
- 1841.3.13 Print a job work and turn.
- 1841.3.14 Setup and print a job on cover stock.
- 1841.3.15 Perform press wash-up procedures.
- 1841.3.16 Adjust night latch.
- 1841.3.17 Setup and print envelopes.

Standard 4: Identify and demonstrate knowledge of papers used in the printing industry. (1841.S.4)

Paper Objectives

Students will:

- 1841.4.1 Define common paper terms.
- 1841.4.2 Identify a watermark.
- 1841.4.3 Identify and describe the two sides of a sheet.
- 1841.4.4 Test for grain direction of paper stock.
- 1841.4.5 Identify various kinds of paper and match kinds of paper with their use.
- 1841.4.6 Select standard weights for various kinds of paper.

Standard 5: Calculate and perform paper-cutting operations. (1841.S.5)

Paper-cutting Operations Objectives

Students will:

- 1841.5.1 Read production information on job ticket.
- 1841.5.2 Calculate number of cuts from stock, identifying combination cuts.
- 1841.5.3 Describe and perform proper safety precautions during paper cutting operations.

Standard 6: Identify and perform bindery operations. (1841.S.6)

Bindery Operations Objectives

Students will:

- 1841.6.1 List operations performed in the bindery areas.
- 1841.6.2 Name two (2) types of stitches.
- 1841.6.3 Pad # 20 paper stock and carbonless paper stock.
- 1841.6.4 Drill stock for 3-ring binders.
- 1841.6.5 Perform spiral binding operations.
- 1841.6.6 Perform folding operations.
- 1841.6.7 Gather and collate a multi-page booklet.

Basic Illustration

WVEIS Code 1851

This course will introduce students to the basic fundamentals of safety, design elements, medium and art tool exploration, perspective, shading techniques, and various printing methods.

Standard 1: Demonstrate safe work habits in the commercial art studio. (1851.S.1)

Safe Work Habits Objectives

Students will:

- 1851.1.1 Properly and safely use a variety of cutting tools (cutting board, Xacto knife, scissors, etc.).
- 1851.1.2 Properly and safely use toxic and/or flammable substances (permanent markers, rubber cement, fixative, etc.).

Standard 2: Execute a variety of media applications. (1851.S.2)

Media Applications Objectives

Students will:

- 1851.2.1 Apply line, value, texture, depth, color, shape and rhythm to designs.
- 1851.2.2 Draw using pen and ink.
- 1851.2.3 Draw using marker.
- 1851.2.4 Draw using various graphite and colored pencils.
- 1851.2.5 Draw using charcoal/pastels.
- 1851.2.6 Illustrate using a variety of paints: watercolor, oil, tempera, etc.

Standard 3: Draw using various perspective methods. (1851.S.3)

Draw Objectives

Students will:

- 1851.3.1 Draw using one-point, two-point, and three-point perspective at various eye levels.
- 1851.3.2 Draw using elliptical perspective horizontally and vertically, at various eye levels.
- 1851.3.3 Draw cast shadows using perspective techniques.

Standard 4: Draw and paint using various techniques. (1851.S.4)

Draw and Paint Objectives

Students will:

- 1851.4.1 Draw using soft pencil pressure techniques.
- 1851.4.2 Draw using pointillism/ stippling techniques.
- 1851.4.3 Draw using wash techniques.
- 1851.4.4 Draw using crosshatching techniques.
- 1851.4.5 Draw using airbrush techniques.

Standard 5: Explore various printing methods. (1851.S.5)

Printing Objectives

Students will:

- 1851.5.1 Create various relief prints using different media (cardboard, woodcuts, embossing, etc.)
- 1851.5.2 Create a screen print.

Computer Graphics

WVEIS Code 1853

This course encompasses more advanced vector graphics software applications and faster graphic software applications.

Standard 1: Demonstrate proficiency with prepress concepts and graphic design production skills. (1853.S.1)

Production Skills Objectives

Students will:

- 1853.1.1 Incorporate photography into graphic design using 35 mm and /or digital photographic techniques.
- 1853.1.2 Scan and import images into graphic designs.
- 1853.1.3 Experiment with various input devices (keyboard, mouse, light pen, digitizing tablet).
- 1853.1.4 Develop awareness of Optical Character Recognition, external storage devices (Zip, Jazz drives, etc.), PDF format, and Pre-Flight software.
- 1853.1.5 Demonstrate understanding of the necessity for trapping.
- 1853.1.6 Produce and print out color separations for both spot and process color (CMVK) design projects.

Standard 2: Demonstrate your design proficiency through various advance design projects. (1853.S.2)

Design Projects Objectives

Students will:

- 1853.2.1 Layout a sign, design a billboard layout, design a logo and prepare it for reproduction
- 1853.2.2 Convert numerical data to effective visual representations: pie graphs, bar graphs, line graphs, etc.
- 1853.2.3 Develop a decorative design, such as borders, wallpaper design, wrapping paper design, etc.
- 1853.2.4 Layout/construct a package design and prepare for printing.
- 1853.2.5 Design/construct point-of-purchase display (easel); prepare for printing.
- 1853.2.6 Retouch photographs using imaging software (i.e., PhotoShop, PhotoPAINT, etc.).
- 1853.2.7 Use merge imaging software.

Standard 3: Solve a variety of complex graphic problems and prepare each design for reproduction. (1853.S.3)

Graphic Problems Objective

Students will:

- 1853.3.1 Design a multi-page printed piece that incorporates signatures and conforms to printing limitations.

Standard 4: Explore various intermediate processes used in design production. (1853.S.4)

Intermediate Processes Objectives

Students will:

- 1853.4.1 Operate a camera using various accessory equipment: lenses, tripods, cable release, strobe/flash, etc.
- 1853.4.2 Select film based on an understanding of how ASA relates to printed image, grain, light, etc.

- 1853.4.3 Apply depth of field, focus, competition, exposure, (spot and average metering), aperture/shutter speed relationship to photographic assignments.
- 1853.4.4 Operate enlarger incorporating dodging and burning techniques.
- 1853.4.5 Mix chemistries for black and white photographic development per product instructions.
- 1853.4.6 Paint, fix and dry prints per product instructions.
- 1853.4.7 Layout a design and print it using silk-screen techniques (hand-cut or photographic).
- 1853.4.8 Disassemble and assemble airbrush.
- 1853.4.9 Set compressor gauges to proper pressure.
- 1853.4.10 Prepare media for airbrush (ink, watercolor, oil-based paint, etc.)
- 1853.4.11 Experiment with various frisketing methods: prepared, liquid, etc.
- 1853.4.12 Render a drawing/painting or retouch a photograph with airbrush.

Standard 5: Develop a portfolio with which to seek employment (or college acceptance) in the field of commercial art. (1853.S.5)

Portfolio Objectives

Students will:

- 1853.5.1 Complete the development of the portfolio started in previous course.
- 1853.5.2 Write a resume and a letter of introduction to accompany the portfolio.
- 1853.5.3 Complete a job application that references the portfolio.
- 1853.5.4 Participate in a real or a mock job interview.

Standard 6: Operate digital cameras. (1853.S.6)

Digital Cameras Objectives

Students will:

- 1853.6.1 Identify features of different types of digital cameras.
- 1853.6.2 Take pictures and transfer images to the computer using different types of digital cameras.
- 1853.6.3 Manipulate and organize images transferred from digital cameras.

Standard 7: Create animations using available software. (1853.S.7)

Animations Objectives

Students will:

- 1853.7.1 Identify animation software.
- 1853.7.2 Place images to create animations.
- 1853.7.3 Create frames from images to animate.
- 1853.7.4 Create and enhance multimedia animations.

Desktop Publishing

WVEIS Code 1855

This course emphasizes page layout and desktop publishing skills using programs such as Adobe PageMaker, Quark Express, or Corel Ventura.

Standard 1: Demonstrate proficiency with prepress concepts and graphic design production skills. (1855.S.1)

Productions Skills Objectives

Students will:

- 1855.1.1 Format text (apply style, point size, leading, alignment, tabs, indents etc.).
- 1855.1.2 Scan and import illustrative and photographic images.
- 1855.1.3 Output layouts and color separations using inkjet and laser printers.
- 1855.1.4 Understand the advantages of Postscript Level III output.

Standard 2: Design a variety of page layout projects. (1855.S.2)

Page Layout Objectives

Students will:

- 1855.2.1 Design a newspaper ad and prepare it for reproduction.
- 1855.2.2 Design a magazine ad and prepare it for printing.
- 1855.2.3 Design a multi-panel brochure.
- 1855.2.4 Design a multi-page printed piece that incorporates signatures and conforms to printing limitations.
- 1855.2.5 Design a masthead and prepare a 4-page newsletter for reproduction.
- 1855.2.6 Import text originating from a word processing program.

Standard 3: Complete the development of a portfolio for the purpose of seeking employment (or college acceptance) in the field of commercial art/graphic design. (1855.S.3)

Portfolio Objectives

Students will:

- 1855.3.1 Complete development of a portfolio.
- 1855.3.2 Write a resume and a letter of introduction to accompany the portfolio.
- 1855.3.3 Complete a job application that references the portfolio.
- 1855.3.4 Participate in a real or a mock job interview.

Fundamentals of Graphic Design and Production WVEIS Code 1857

This course will introduce students to the basic fundamentals of the graphic communications industry. Students will become familiar with safety in the graphic arts lab and basic techniques in drawing and illustration.

Standard 1: Demonstrate knowledge of career opportunities in graphic design and production. (1857.S.1)

Career Opportunities Objectives

Students will:

- 1857.1.1 Describe a variety of careers related to graphic design and production, and the training necessary to be successful in those careers.
- 1857.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of graphic design and production.
- 1857.1.3 Identify sources of information about careers in graphic design and production.

Standard 2: Identify a variety of basic graphic design equipment and materials. (1857.S.2)

Equipment and Materials Objectives

Students will:

- 1857.2.1 Identify and describe a variety of major printing processes.
- 1857.2.2 Name types of materials on which printing is done.
- 1857.2.3 Identify basic tools used in the graphic arts lab.

Standard 3: Demonstrate safe work habits in the graphic arts lab. (1857.S.3)

Safe Work Habits Objectives

Students will:

- 1857.3.1 Demonstrate job-related safety precautions and procedures regarding use of materials and equipment in the graphic arts lab.
- 1857.3.2 Describe proper precautions when handling toxic or flammable chemicals.

Standard 4: Identify legal restrictions regarding copy limitations. (1857.S.4)

Copy Limitations Objectives

Students will:

- 1857.4.1 Name three (3) elements of a copyright notice.
- 1857.4.2 Identify items that may and may not be copyrighted, and describe procedures to obtain permission to reproduce copyrighted materials.

Standard 5: Introduce design elements and principles to graphic applications. (1857.S.5)

Graphic Applications Objectives

Students will:

- 1857.5.1 Incorporate the design principles of balance, eye travel, contrast, repetition, focal point, and unity when developing illustrations.
- 1857.5.2 Differentiate between line, value, texture, depth, color, shape and rhythm.
- 1857.5.3 Using desktop publishing software, develop a three panel brochure using appropriate layout,

type, and clip art.

Standard 6: Demonstrate the principles of job planning and layout when producing layouts to customer specifications. (1857.S.6)

Customer Specifications Objectives

Students will:

- 1857.6.1 Identify the elements for layouts, including: headline, subhead, copy-block, illustrations/photos, negative space, etc.
- 1857.6.2 Produce thumbnail sketches that reflect client expectations.
- 1857.6.3 Apply the inch/point/pica scales during layout through the mechanical preparation process.
- 1857.6.4 Identify and apply a variety of font styles, typefaces, and hand lettering.
- 1857.6.5 Incorporate hand and computer generated artwork and screen tints into layouts.
- 1857.6.6 Use a variety of layout tools, including: compasses, triangles, t-squares, templates, and French curves into layout and finished art preparation processes.
- 1857.6.7 Develop rough layouts.
- 1857.6.8 Choose paper stock, other medium, and ink colors for layouts.
- 1857.6.9 Develop a comprehensive layout, both hand and computer generated.

Graphic Design

WVEIS 1859

This course will introduce students to basic advertising concepts, and hand and computer generated layout procedures and paste-up/mechanical production.

Standard 1: Establish demographics for various target markets and develop market research skills. (1859.S.1)

Establish demographics for various target markets and develop market research skills objectives.

The student will:

- 1859.1.1 Make graphic design decisions regarding type, style, color and illustrative choices based on data such as age, sex, education level and occupation.
- 1859.1.2 Study client, product/service that is being promoted, potential customer and purpose of document being designed.

Standard 2: Execute correct hand generated paste-up/mechanical preparation skills. (1859.S.2)

Execute correct hand generated paste-up/mechanical preparation skills objectives.

The student will:

- 1859.2.1 Secure all elements for Paste-up/mechanical/camera-ready art/keyline.
- 1859.2.2 Scale art using grids, transfers, projections, and proportion wheels. Cut amberlith/rubylith for overlay color separation.
- 1859.2.3 Execute finished art for spot color printing.
- 1859.2.4 Specify type/mark up all copy.
- 1859.2.5 Set type via desktop publishing software program that conforms to industry standards (Pagemaker, Quark Express, etc.).
- 1859.2.6 Crop, size (scale), and key photographs.
- 1859.2.7 Assemble mechanical/camera-ready art for 1, 2, and 3 color spot color designs.
- 1859.2.8 Indicate appropriate printer/camera instructions on mechanical: trim marks, fold lines, register marks, inks and percentages, bleeds, die cuts, foil stamping, spot varnish, embossing, etc.

Standard 3: Use vector graphics software to properly execute a variety of computer generated design projects. (1859.S.3)

Use vector graphics software to properly execute a variety of computer generated design projects objectives.

The student will:

- 1859.3.1 Incorporate logo design into letterheads, envelopes, business cards, etc., for the purposes of corporate identity.
- 1859.3.2 Design a greeting card and prepare for printing.
- 1859.3.3 Draw cartoons/caricatures.
- 1859.3.4 Produce a story board for a TV ad, motion picture, video, etc.

Illustration

WVEIS Code 1861

This course will introduce students to the fundamentals of color theory and figure drawing.

Standard 1: Apply color theory to illustrations. (1861.S.1)

Illustrations Objectives

Students will:

- 1861.1.1 Identify the components of the color wheel, i.e., primary, secondary, and tertiary, etc.
- 1861.1.2 Determine color combinations: complimentary, analogous, split-complimentary, triads, tetrads, etc. and use them in designs.
- 1861.1.3 Define the dimensions of color: hue, value, intensity, opacity, saturation.

Standard 2: Apply rules of proportion to figure drawing. (1861.S.2)

Figure Drawing Objectives

Students will:

- 1861.2.1 Produce renderings of both standard and fashion figures.
- 1861.2.2 Produce renderings of heads, faces, hands, and feet.
- 1861.2.3 Produce renderings of various textiles, including folds and textures.

Standard 3: Develop reference materials. (1861.S.3)

Reference Materials Objectives

Students will:

- 1861.3.1 Begin to develop a portfolio of your best samples of graphic design and illustrative pieces.
- 1861.3.2 Correctly mount and mat pieces for display in a portfolio.
- 1861.3.3 Develop and maintain a picture morgue for illustrative reference.

Electrical Maintenance

WVEIS Code 1871

This course will introduce students to the maintenance of electrical systems and motors in industrial maintenance occupations. Students will become familiar with tools and components of electrical motors and will perform a variety of operations using them.

Standard 1: Read and interpret electrical schematics and diagrams. (1871.S.1)

Electrical Schematics and Diagrams Objective

Students will:

1871.1.1 Explain the difference between power and control circuits.

Standard 2: Replace electric motors and protective devices. (1871.S.2)

Electric Motors and Protective Devices Objectives

Students will:

1871.2.1 Explain relevant sections of the National Electric Code.

1871.2.2 Calculate circuit amperage.

1871.2.3 Explain the difference between starting and running amperage.

1871.2.4 Explain and demonstrate how a magnetic contactor works.

Standard 3: Change rotation of electric motors. (1871.S.3)

Electric Motors Objectives

Students will:

1871.3.1 Identify parts of a three-phase motor.

1871.3.2 Describe current flow in a three-phase motor.

1871.3.3 Rewire a three-phase motor to change motor rotation.

1871.3.4 Describe current flow in a DC motor.

1871.3.5 Rewire a DC motor to change motor rotation.

Standard 4: Perform maintenance on electric motors. (1871.S.4)

Maintenance Objectives

Students will:

1871.4.1 Explain lock out tag out rules.

1871.4.2 Explain types of motor controllers.

1871.4.3 Explain how to clean and lubricate motors.

Standard 5: Use electrical test equipment to troubleshoot motor control circuits. (1871.S.5)

Electrical Test Equipment Objectives

Students will:

1871.5.1 Obtain various readings with a VOM.

1871.5.2 Test and replace semiconductors.

1871.5.3 Test DC power supplies.

1871.5.4 Use transistors, diodes, and resistors in electrical circuits.

1871.5.5 Install and test silicon controlled rectifiers.

Fundamentals of Industrial Equipment MaintenanceWVEIS Code 1873

This course will introduce students to entry level skills in industrial maintenance occupations. Students will become familiar with hand tools and power machines used in industrial mechanics and will perform a variety of operations using them.

Standard 1: Identify, explore, and evaluate career opportunities related to industrial mechanics.(1873.S.1)

Career Opportunities Objectives

Students will:

- 1873.1.1 Describe a variety of careers related to industrial mechanics, and the training necessary to be successful in those careers.
- 1873.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of industrial mechanics.
- 1873.1.3 Identify sources of information about careers in industrial mechanics.

Standard 2: Demonstrate knowledge of basic safety rules and equipment as it relates to industrial mechanics. (1873.S.2)

Safety Rules Objectives

Students will:

- 1873.2.1 Recognize and follow general shop safety guidelines.
- 1873.2.2 Identify, select and demonstrate proper use and care of all basic personal safety equipment.
- 1873.2.3 Demonstrate the proper selection and use of fire extinguishers.
- 1873.2.4 Describe OSHA regulations necessary when using hazardous materials.
- 1873.2.5 Describe proper waste disposal of industrial lubricants.

Standard 3: Select and apply industrial lubricants. (1873.S.3)

Industrial Lubricants Objectives

Students will:

- 1873.3.1 Differentiate between oil, grease, and synthetic lubricants and describe various applications for each type.
- 1873.3.2 Explain how lubricants get contaminated.
- 1873.3.3 List possible handling and storage problems of lubricants.

Standard 4: Straighten a shaft using a press. (1873.S.4)

Shaft Objectives

Students will:

- 1873.4.1 Demonstrate the setup of an arbor press, shaft and dial indicator, take readings (data), explain run out, spring back, high point and flat spotting.
- 1873.4.2 Explain the effects of using heat on a shaft if used for straightening purposes.
- 1873.4.3 Differentiate between a normal shaft and a hardened shaft.
- 1873.4.4 Explain the magna fluxing and sonar devices for testing and inspecting for hairline cracks in shafts.

Standard 5: Adjust gibs for full operation. (1873.S.5)

Gibs Objectives

Students will:

- 1873.5.1 Describe the function of a gib and give examples of its application.
- 1873.5.2 Describe "excessive wear" and "galled" in relationship to gibs.
- 1873.5.3 Explain the setup and reading of a dial indicator and micrometer for checking a gib.

Standard 6: Fabricate and install safety guards. (1873.S.6)

Safety Guards Objectives

Students will:

- 1873.6.1 Identify materials to be used, and illustrate safety guards to be fabricated and installed.
- 1873.6.2 Explain how a conveyor system functions and what guards are required.

Standard 7: Assemble and align a drive mechanism for a conveyor system. (1873.S.7)

Conveyor System Objectives

Students will:

- 1873.7.1 Identify different types of conveyor systems, where and why they are used.
- 1873.7.2 Explain alignment alternatives and various shimming techniques.
- 1873.7.3 Locate and explain manufacturer's specifications of alignment data, capacity limitations, and assembly procedures.

Standard 8: Identify basic tools used in industrial mechanics and perform various processes.(1873.S.8)

Basic Tools Objectives

Students will:

- 1873.8.1 Choose the proper tools for given applications, and describe the proper care and maintenance of each.
- 1873.8.2 Demonstrate adjustments necessary for each tool.
- 1873.8.3 Drill and tap internal threads and cut external threads of various size and pitch, using the proper thread cutting lubricants.
- 1873.8.4 Demonstrate the proper use of a band saw and power hack saw, and calculate the desired teeth per inch and cutting speed for various materials.
- 1873.8.5 Differentiate between tempering and annealing for ferrous and non-ferrous metals.
- 1873.8.6 Remove damaged screws or bolts, using various sizes and styles of screw extractors.
- 1873.8.7 Grind surfaces using portable electric grinder, using the proper abrasive.
- 1873.8.8 Demonstrate the use and maintenance of hand, pedestal and machine grinders by sharpening and deburring tools.
- 1873.8.9 Differentiate between drilling, boring, counter boring, spot facing, reaming and honing using a drill press, and demonstrate each procedure, using the proper lubricant.
- 1873.8.10 Mount work in universal lathe chuck, face work piece and center drill work piece.
- 1873.8.11 Bore and counter bore a hole and cut internal and external threads using lathe.
- 1873.8.12 Cut a horizontal surface and an external taper on lathe using compound rest.

Standard 9: Inspect and troubleshoot moving parts on machines. (1873.S.9)

Machines Objectives

Students will:

- 1873.9.1 Differentiate between damaged and normal set up using manufacturer's specifications.
- 1873.9.2 Identify parts of gear box, open gear drive and explain gear alignments and meshing requirements.

Hydraulics and Pneumatic Systems

WVEIS Code 1875

This course will introduce students to the application of hydraulic and pneumatic systems used in industrial maintenance occupations. Students will become familiar with tools and components of hydraulics and pneumatics and will perform a variety of operations using them.

Standard 1: Read and interpret hydraulic and pneumatic diagrams. (1875.S.1)

Hydraulic and Pneumatic Diagrams Objectives

Students will:

- 1875.1.1 Identify and describe the function of component parts of hydraulic and pneumatic systems.
- 1875.1.2 Interpret symbols for hydraulics and pneumatics using CAD.
- 1875.1.3 Identify and describe mechanical servo valves and cartridge valves.

Standard 2: Refill or clean filters and refill system in hydraulic and pneumatic systems. (1875.S.2)

Clean Filters and Refill System Objectives

Students will:

- 1875.2.1 Describe techniques for draining systems.
- 1875.2.2 Identify various filters, screen, strainers, and types of hydraulic and compressor oils.

Standard 3: Replace and align hydraulic motors and pumps. (1875.S.3)

Hydraulic Motors and Pumps Objectives

Students will:

- 1875.3.1 Describe hydraulic pumps, the basic parts and the function of each part.
- 1875.3.2 Explain how a hydraulic unit functions.
- 1875.3.3 Identify alignment and couplings.
- 1875.3.4 Align piston rod of hydraulic pump and adjust pressure.

Standard 4: Install hydraulic and pneumatic lines and measure pressure. (1875.S.4)

Install Hydraulic and Pneumatic Lines Objectives

Students will:

- 1875.4.1 Identify piping, fittings, gaskets, and seals.
- 1875.4.2 Inspect and replace pressure relief valve.

Standard 5: Install guards and covers. (1875.S.5)

Guards and Covers Objective

Students will:

- 1875.5.1 Explain and use manufacturer's specifications for clearance and attachment techniques.

Engine Machining

WVEIS Code 1901

This course will introduce students to the basic fundamentals related to high performance engine machining. Students will become familiar with the machining operations necessary to change a conventional stock engine into an oversized performance engine through technology.

**Standard 1: Identify, explore, and evaluate different types of high performance engines.
(1901.S.1)**

High Performance Engines Objectives

Students will:

- 1901.1.1 Inspect complete engine components for wear – block, heads, connecting rods, crankshaft, camshaft, lifters, etc.
- 1901.1.2 Determine hardness of valve.
- 1901.1.3 Determine the new face angle that valve should be machined to.
- 1901.1.4 Determine oversize that cylinder is to be machined to.
- 1901.1.5 Determine the finish to which cylinder should be honed.
- 1901.1.6 Recondition and resize rods.
- 1901.1.7 Bore out valve guides, install new guides, ream to appropriate size for valve.
- 1901.1.8 Surface cylinder head to appropriate finish per application.
- 1901.1.9 Inspect crankshaft for cracks, pits, abrasions and then polish or grind depending on condition of crankshaft.
- 1901.1.10 Determine which camshaft is to be used per application: determine camshaft bearing size and appropriate method to install cam bearings into motor block.
- 1901.1.11 Check passages and restrictions in oiling systems of motor.

Fundamentals of Machine Tool Technology

WVEIS Code 1903

This course will introduce students to the basic fundamentals related to machine tool technology. Students will become familiar with safety, blueprint reading, layout and measuring skills, and various hand and power tools used in the machine shop.

Standard 1: Identify, explore, and evaluate career opportunities related to metals technology. (1903.S.1)

Metals Technology Objectives

Students will:

- 1903.1.1 Describe a variety of careers related to metals technology, and the training necessary to be successful in those careers.
- 1903.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of metals technology.
- 1903.1.3 Identify sources of information about careers in metals technology.

Standard 2: Demonstrate knowledge of basic safety rules and equipment as it relates to machine tool technology. (1903.S.2)

Safety Rules Objectives

Students will:

- 1903.2.1 Recognize and follow general shop safety guidelines.
- 1903.2.2 Explain and demonstrate the proper use and care of tools, machines, and equipment in the metals laboratory.
- 1903.2.3 Demonstrate the proper selection and use of fire extinguishers.
- 1903.2.4 Identify, demonstrate proper use and care of, and wear all basic personal safety equipment.
- 1903.2.5 Describe safety precautions necessary when using hazardous materials.

Standard 3: Demonstrate measuring skills and techniques used in machine tool technology. (1903.S.3)

Machine Tool Technology Objectives

Students will:

- 1903.3.1 Identify and properly use a variety of measuring equipment, including: a six inch rule, a 4R graduate rule, and a vernier caliper.
- 1903.3.2 Demonstrate use of inside and outside micrometer.

Standard 4: Interpret blueprints. (1903.S.4)

Blueprints Objectives

Students will:

- 1903.4.1 Draw sketches for jobs with notes and symbols.
- 1903.4.2 Interpret technical orders, standards and specifications for work applications.
- 1903.4.3 Form materials to blueprint specifications.

Standard 5: Identify basic hand tools used in machine tool technology and perform bench work processes. (1903.S.5)

Basic Hand Tools Objectives

Students will:

- 1903.5.1 Choose the proper hand tools for given applications, describe the proper care and maintenance of each, and demonstrate adjustments possible with each tool.
- 1903.5.2 Identify and maintain work holding devices, taps, dies and hand held tools.
- 1903.5.3 Cut internal and external threads using tap and die.
- 1903.5.4 Remove a broken bolt and tap.

Standard 6: Perform filing and grinding tasks. (1903.S.6)

Filing and Grinding Tasks Objectives

Students will:

- 1903.6.1 Demonstrate safe use of a pedestal grinder and use it to grind a center punch point, a chisel point edge, and a twist drill.
- 1903.6.2 Inspect, dress and true a grinding wheel, and adjust wheel guard and tool rest on grinder.
- 1903.6.3 Using hand tools, cut and file a square workpiece to precision specifications.

Standard 7: Demonstrate basic band saw operations and use. (1903.S.7)

Basic Band Saw Operations Objectives

Students will:

- 1903.7.1 Clean, lubricate, and inspect a bandsaw for safe operation.
- 1903.7.2 Layout and cut off material using both a vertical and horizontal bandsaw.
- 1903.7.3 Select, install, cut and weld bandsaw blades.

Standard 8: Demonstrate basic drill press operations and use. (1903.S.8)

Basic Drill Press Operations Objectives

Students will:

- 1903.8.1 Clean, lubricate, and inspect a drill press for safe operation.
- 1903.8.2 Select, mount, and secure holding device for drill press.
- 1903.8.3 Perform tapping, countersinking, counter boring, and spot facing operations on drill press.

Standard 9: Demonstrate basic metal lathe operations and use. (1903.S.9)

Basic Metal Lathe Operations Objectives

Students will:

- 1903.9.1 Clean, lubricate, and inspect a metal lathe for safe operation.
- 1903.9.2 Mount work in universal lathe chuck, face workpiece, center drill workpiece.
- 1903.9.3 Center tool bit in lathe using tail stock.
- 1903.9.4 Perform setup using dial indicator.
- 1903.9.5 Use a pedestal grinder to shape and sharpen left and right hand cutting tools, grind a radius and cutting edge on a lathe tool kit.
- 1903.9.6 Perform a variety of lathe operations, including turn round stock to specific size, knurl a workpiece, and freehand form a workpiece.

Standard 10: Demonstrate basic milling machine operations and use. (1903.S.10)

Basic Milling Machine Operations Objectives

Students will:

1903.10.1 Clean, lubricate and inspect a milling machine for safe operation.

1903.10.2 Align vice, locate center of workpiece, and seat workpiece in vice on mill.

1903.10.3 Square stock to size, using a milling machine.

Machine Processes

WVEIS Code 1905

This course will provide students with an introduction to metallurgy and advanced power tool skills related to machine tool technology.

Standard 1: Describe the structure and classifications of machining metals. (1905.S.1)

Machining Metals Objectives

Students will:

- 1905.1.1 Describe the open hearth, Bessemer converter, electric furnace, and basic oxygen process of making steel.
- 1905.1.2 Classify low, medium, and high carbon steel, and tool and die steels according to the SAE and AISI systems.
- 1905.1.3 Identify the carbon content of alloy metals using the spark test method.
- 1905.1.4 Classify aluminum according to the Aluminum Association four digit numbering code.

Standard 2: Perform advanced grinding techniques. (1905.S.2)

Grinding Techniques Objectives

Students will:

- 1905.2.1 Grind a slot in workpiece.
- 1905.2.2 Dress angle on grinding wheel.

Standard 3: Demonstrate advanced lathe operations. (1905.S.3)

Lathe Operations Objectives

Students will:

- 1905.3.1 Cut internal taper surface using taper attachment.
- 1905.3.2 Cut taper using tailstock off set.
- 1905.3.3 Chase internal right hand and left hand threads.
- 1905.3.4 Chase external and internal acme threads.
- 1905.3.5 Chase external pipe threads.
- 1905.3.6 Turn an eccentric on lathe.
- 1905.3.7 Machine a workpiece using face plate.

Standard 4: Demonstrate advanced milling operations. (1905.S.4)

Milling Operations Objectives

Students will:

- 1905.4.1 Machine woodruff keyway in workpiece.
- 1905.4.2 Bore and counterbore hole in workpiece.
- 1905.4.3 Drill holes to specified angles using angular indexing.
- 1905.4.4 Cut a sprocket using simple indexing.
- 1905.4.5 Machine a spline using index head.
- 1905.4.6 Machine a spur gear.

Standard 5: Demonstrate CNC machining operations. (1905.S.5)

CNC Matching Operations Objectives

Students will:

- 1905.5.1 Identify the various parts of CNC equipment and describe how it operates.
- 1905.5.2 Demonstrate setup procedure for and properly operate CNC equipment.
- 1905.5.3 Calculate CNC programming geometry problems.
- 1905.5.4 Analyze part symmetry for CNC machining.
- 1905.5.5 Write CNC programs using G and M codes.
- 1905.5.6 Write incremental and absolute CNC programs.
- 1905.5.7 Solve angles for CNC program.

Machining Processes and Applications

WVEIS Code 1907

This course will provide students with intermediate hand and power tool skills related to machine tool technology.

Standard 1: Demonstrate intermediate measuring skills. (1907.S.1)

Measuring Skills Objectives

Students will:

- 1907.1.1 Perform measuring skills using vernier calipers.
- 1907.1.2 Scribe circles, radian, and parallel lines on a workpiece.

Standard 2: Demonstrate intermediate vertical band saw operations. (1907.S.2)

Vertical Band Saw Objectives

Students will:

- 1907.2.1 Layout and saw an angle using vertical bandsaw.
- 1907.2.2 Perform contour cutting on vertical bandsaw.

Standard 3: Demonstrate intermediate grinding operations. (1907.S.3)

Grinding Operations Objectives

Students will:

- 1907.3.1 Mount and balance a grinding wheel on pedestal grinder.
- 1907.3.2 Grind flat, vertical, and angular surfaces.
- 1907.3.3 Grind a workpiece square and parallel to precision specifications.

Standard 4: Demonstrate intermediate metal lathe operations. (1907.S.4)

Metal Lathe Objectives

Students will:

- 1907.4.1 Counterbore hole in a workpiece.
- 1907.4.2 Part off workpiece.
- 1907.4.3 Machine an external taper using a taper attachment.
- 1907.4.4 Turn a long shaft between centers.
- 1907.4.5 Indicate shaft in lathe using a steady rest.
- 1907.4.6 Align tailstock using a dial indicator.
- 1907.4.7 Machine internal and external o-ring grooves.

Standard 5: Demonstrate intermediate milling operations. (1907.S.5)

Milling Operations Objectives

Students will:

- 1907.5.1 End mill key seats in workplace.
- 1907.5.2 Drill equally spaced holes on a bolt circle.
- 1907.5.3 Machine slots in workpiece.
- 1907.5.4 Machine equally spaced slots using direct indexing.
- 1907.5.5 Machine a hexagon workpiece using simple indexing.
- 1907.5.6 Align milling machine head, center drill workpiece, drill hole, and ream hole in workpiece on

- mill.
- 1907.5.7 Set-up workpiece using clamps.
- 1907.5.8 Flycut workpiece on vertical mill.

Metal Trades Processes and Application

WVEIS Code 1909

This course will introduce students to the basic fundamentals related to machine tool and welding technology. Students will develop advanced skills using various hand and power tools.

Standard 1: Demonstrate measuring skills and techniques. (1909.S.1)

Measuring Skills and Techniques Objective

Students will:

1909.1.1 Use a dial indicator properly.

Standard 2: Perform metal pressing operations. (1909.S.2)

Metal Pressing Operations Objectives

Students will:

1909.2.1 Bend and straighten parts using hydraulic iron worker.

1909.2.2 Set-up and brake workpiece using hydraulic press.

1909.2.3 Perform metal shear operations.

Standard 3: Perform power saw operations. (1909.S.3)

Power Saw Operations Objectives

Students will:

1909.3.1 Select speeds, feeds, and adjust power saw.

1909.3.2 Perform contour cuts using vertical band saw.

Standard 4: Perform metal lathe operations and procedures. (1909.S.4)

Metal Lathe Operations and Procedures Objectives

Students will:

1909.4.1 Perform drilling, tapping, reaming, counterboring and countersinking operations on a lathe.

1909.4.2 File and polish using lathe.

1909.4.3 Cut internal and external V threads.

1909.4.4 Cut internal and external tapers.

Standard 5: Perform milling machine operations and procedures. (1909.S.5)

Milling Machine Operations and Procedures Objectives

Students will:

1909.5.1 Perform side cutter operations.

1909.5.2 Demonstrate simplified indexing operation on milling machine.

1909.5.3 Cut key slots using milling machine.

1909.5.4 Perform slitting saw operation on milling machine.

1909.5.5 Perform slot milling operation.

1909.5.6 Set-up and align milling machine and holding devices.

Standard 6: Demonstrate CNC machining operations. (1909.S.6)

CNC Machining Operations Objectives

Students will:

- 1909.6.1 Identify the various parts of CNC equipment and describe how it operates.
- 1909.6.2 Demonstrate setup procedure for and properly operate CNC equipment.
- 1909.6.3 Calculate CNC programming geometry problems.
- 1909.6.4 Analyze part symmetry for CNC machining.
- 1909.6.5 Write CNC programs using G and M codes.
- 1909.6.6 Write incremental and absolute CNC programs.
- 1909.6.7 Solve angles for CNC program.

Standard 7: Demonstrate advanced Gas Metal Arc welding techniques. (1909.S.7)

Gas Metal Arc Objectives

Students will:

- 1909.7.1 Select, prepare, adjust, and operate Gas Metal Arc welding equipment.
- 1909.7.2 Prepare, position, and tack weld parts for Gas Metal Arc welding.
- 1909.7.3 Perform flat and vertical Gas Metal Arc welding positions.

Standard 8: Demonstrate advanced Gas Tungsten Arc welding techniques. (1909.S.8)

Gas Tungsten Arc Objectives

Students will:

- 1909.8.1 Operate Gas Tungsten Arc welding equipment to weld aluminum in flat position.
- 1909.8.2 Operate Gas Tungsten Arc welding equipment to weld steel in flat position.

Standard 9: Demonstrate basic Shielded Metal Arc welding. (1909.S.9)

Shielded Metal Arc Objectives

Students will:

- 1909.9.1 Set up and adjust Shielded Metal Arc welding equipment.
- 1909.9.2 Arc weld carbon steel in flat position.
- 1909.9.3 Perform Shielded Metal Arc weld of carbon steel in vertical and overhead position.

Block and Rock Laying

WVEIS Code 1911

This course will introduce students to the basic fundamentals of block and rock laying. Students will become familiar with basic tools, equipment and techniques used in block and rock laying.

Standard 1: Install a block foundation. (1911.S.1)

Block Foundation Objectives

Students will:

- 1911.1.1 Describe how to locate the corners of a foundation wall on the footing from batter boards.
- 1911.1.2 Estimate materials needed for a foundation project.
- 1911.1.3 Lay out, bond, build and waterproof a foundation project.
- 1911.1.4 Describe and install wire reinforcement and lintels in a block wall.

Standard 2: Lay concrete block to the line. (1911.S.2)

Concrete Block Objectives

Students will:

- 1911.2.1 Define terms associated with laying block.
- 1911.2.2 Identify methods of putting up a line.
- 1911.2.3 Lay out a block wall, and lay block to the line using an established level.
- 1911.2.4 Discuss the importance of having uniform bed joints and head joints.

Standard 3: Lay block leads. (1911.S.3)

Block Leads Objectives

Students will:

- 1911.3.1 Write a paragraph describing the importance and purpose of laying block leads to the correct height, level and plumb.
- 1911.3.2 Estimate materials and build an outside and inside corner lead seven courses high.
- 1911.3.3 Build a block partition wall with control joints.

Standard 4: Lay stone. (1911.S.4)

Stone Objectives

Students will:

- 1911.4.1 Define terms associated with cut stone.
- 1911.4.2 Describe various types of stone, and the procedure for laying out stone.
- 1911.4.3 Select types of anchors used in setting stone.
- 1911.4.4 Identify methods of handling stone.
- 1911.4.5 List factors to consider when setting stone.
- 1911.4.6 Lay a stone wall.

Bricklaying

WVEIS Code 1913

This course will introduce students to the basic fundamentals of bricklaying. Students will become familiar with basic tools, equipment and techniques used in bricklaying.

Standard 1: Tool brick and mortar joints. (1913.S.1)

Tool Brick and Mortar Joints Objectives

Students will:

- 1913.1.1 Identify the different types of jointers and their specific uses.
- 1913.1.2 Strike, brush, and polish the following joints: rake joints, squeeze joints, trowel struck joints and V-joints.
- 1913.1.3 Grind and repair a brick wall.

Standard 2: Lay brick to the line. (1913.S.2)

Brick Objectives

Students will:

- 1913.2.1 Define terms associated with laying brick to the line.
- 1913.2.2 Identify and demonstrate methods of putting up a line and setting a trig brick.
- 1913.2.3 Dry bond a wall.
- 1913.2.4 Lay brick to the line using established leads and corner poles, and discuss the importance of each.
- 1913.2.5 Discuss the importance of having a plumb bond.
- 1913.2.6 Discuss the purpose of wall ties and describe how to install them.

Standard 3: Construct brick corners. (1913.S.3)

Brick Corners Objectives

Students will:

- 1913.3.1 Define terms associated with laying racked-back leads, inside corners, outside return corners and toothed-out leads.
- 1913.3.2 Write a short paragraph describing the purposes of leads.
- 1913.3.3 Lay a racked back, pyramid, inside and outside return corner, toothed lead.

Standard 4: Lay different brick positions. (1913.S.4)

Brick Positions Objectives

Students will:

- 1913.4.1 Discuss the different meanings of bonding, and identify various types of bonds.
- 1913.4.2 Define terms associated with wall layout.
- 1913.4.3 Correctly identify and describe the six different brick positions.
- 1913.4.4 Lay a double wall that contains stretches, headers, soldiers, shiners, row locks and sailors.

Standard 5: Install brick paving. (1913.S.5)

Brick Paving Objectives

Students will:

- 1913.5.1 List the various types of bricks and pattern bonds in paving and flooring.
- 1913.5.2 Describe how brick paving and floors are laid with and without mortar.
- 1913.5.3 Lay various brick patterns within a 2' x 4' frame.

Standard 6: Build chimneys and fireplaces. (1913.S.6)

Chimneys and Fireplaces Objectives

Students will:

- 1913.6.1 Define terms associated with chimneys and fireplaces.
- 1913.6.2 Identify various types of fireplaces, and identify the basic parts of a fireplace.
- 1913.6.3 Discuss the factors to consider in constructing fireplaces and chimneys.
- 1913.6.4 Write a paragraph describing the procedure for buttering a firebrick.
- 1913.6.5 Describe the characteristics of a firebox, and properly construct one.
- 1913.6.6 Construct a fireplace.
- 1913.6.7 Form a corbel.

Standard 7: Construct a flight of steps. (1913.S.7)

Steps Objectives

Students will:

- 1913.7.1 Define terms related to the parts of a porch and steps.
- 1913.7.2 Describe the relationship between riser and tread and why it is important in building steps.
- 1913.7.3 Describe how brick steps are laid out and constructed, and lay out and build a set of brick steps.

Standard 8: Lay out and construct an arch. (1913.S.8)

Arch Objectives

Students will:

- 1913.8.1 Define terms associated with arch construction, and describe the major types of arches used today.
- 1913.8.2 Describe the theory and function of an arch.
- 1913.8.3 Describe how wood arch forms are constructed in arches.
- 1913.8.4 Lay out and construct a semi-circular arch.

Concrete Finishing

WVEIS Code 1915

This course will apply the concepts, applications, and techniques necessary for various phases of concrete construction.

Standard 1: Understand concrete construction and finishing concepts. (1915.S.1)

Concrete Construction Objectives

Students will:

- 1915.1.1 Define terms associated with concrete construction.
- 1915.1.2 Identify the composition and characteristics of concrete.
- 1915.1.3 Identify the uses of concrete as a building material.
- 1915.1.4 Identify the effect of craftsmanship on finished concrete.
- 1915.1.5 Explain the concrete construction process.
- 1915.1.6 Identify site operation work requirements.
- 1915.1.7 Explain the career potentials in concrete construction and finishing.

Standard 2: Understand and apply safety used in concrete construction. (1915.S.2)

Safety Objectives

Students will:

- 1915.2.1 Describe and wear different types of safety gear for the work site.
- 1915.2.2 State the guidelines for dressing appropriately for concrete work.
- 1915.2.3 Describe how to safely handle concrete when forming, placing, curing, and finishing.
- 1915.2.4 Describe safety precautions to follow when working in extreme heat and cold.
- 1915.2.5 Describe safety precautions to follow when working with hazardous materials.
- 1915.2.6 Describe proper procedures for handling and maintaining concrete construction tools safely.

Standard 3: Analyze the properties of concrete. (1915.S.3)

Properties of Concrete Objectives

Students will:

- 1915.3.1 Describe the properties of concrete.
- 1915.3.2 Explain how the properties of concrete are used in construction.
- 1915.3.3 Determine how the ingredients of concrete influence mix, placement, finishing, durability, and performance.
- 1915.3.4 Describe quality-control tests on concrete ingredients, fresh concrete, and hardened concrete.
- 1915.3.5 Mix a test batch of concrete.
- 1915.3.6 Perform a slump test.

Standard 4: Identify tools and equipment used in concrete construction. (1915.S.4)

Tools and Equipment Objectives

Students will:

- 1915.4.1 Name the tools used in placing and finishing concrete.
- 1915.4.2 Name the power equipment used in placing and finishing concrete.
- 1915.4.3 Describe how each tool is use.
- 1915.4.4 Describe how the power equipment is used.
- 1915.4.5 Associate trade terms with the appropriate tools and equipment.

Standard 5: Prepare worksite for concrete placement. (1915.S.5)

Concrete Placement Objectives

Students will:

- 1915.5.1 Describe basic site layout using levels and measuring tools.
- 1915.5.2 Properly locate, grade, and build forms for horizontal placement.
- 1915.5.3 Perform compaction activities on subgrades.
- 1915.5.4 Describe various joints and where to locate them.
- 1915.5.5 Describe various reinforcements and how to place them.
- 1915.5.6 Describe information needed when ordering concrete.

Standard 6: Place concrete. (1915.S.6)

Place Concrete Objectives

Students will:

- 1915.6.1 Describe how concrete is conveyed and placed.
- 1915.6.2 Draw up a pre-placement checklist.
- 1915.6.3 Demonstrate the use of equipment and tools for placing concrete.
- 1915.6.4 Demonstrate the process of depositing, spreading, consolidating, and striking off concrete in a form.
- 1915.6.5 Associate trade names with the appropriate processes and equipment.

Standard 7: Apply basic concrete finishing techniques. (1915.S.7)

Finishing Techniques Objectives

Students will:

- 1915.7.1 Describe the basic finishing process.
- 1915.7.2 Use the following finishing hand tools: float, edger, groover, and trowel.
- 1915.7.3 Mark and cut joints with a saw.
- 1915.7.4 Apply a broom finish.
- 1915.7.5 Apply a rubbing finish.
- 1915.7.6 Associate trade terms with the appropriate processes and equipment.

Standard 8: Curing and protecting concrete. (1915.S.8)

Curing and Protecting Concrete Objectives

Students will:

- 1915.8.1 Describe the process of curing concrete.
- 1915.8.2 Identify methods of curing concrete.
- 1915.8.3 Describe how each method is applied.
- 1915.8.4 Identify when each method is used.
- 1915.8.5 Associate trade terms with the appropriate processes and equipment.

Standard 9: Troubleshooting basic concrete construction problems. (1915.S.9)

Construction Problems Objectives

Students will:

- 1915.9.1 Describe a basic troubleshooting methodology that can be used to identify a variety of concrete construction problems and their causes.
- 1915.9.2 Identify problems with fresh concrete and describe ways to prevent them.
- 1915.9.3 Identify different concrete defects such as crazing, cracking, dusting, scaling, popouts, and

efflorescence, and describe ways to prevent them.

Foundations and Footings

WVDE Code 1917

This course will introduce students to the basic fundamentals of laying foundations and footings. Students will become familiar with basic tools, equipment and techniques used to lay foundations and footings.

Standard 1: Layout a foundation. (1917.S.1)

Foundation Objectives

Students will:

- 1917.1.1 Discuss the importance of accuracy in foundation layout.
- 1917.1.2 Describe how to square a foundation by finding the diagonal.
- 1917.1.3 Describe the important features of a foundation.
- 1917.1.4 Name the parts of a builders level and transit, and set up and adjust both properly.
- 1917.1.5 Lay out and square a foundation using a transit and the 6-8-10 method.
- 1917.1.6 Discuss the importance of the location, installation and use of batter boards.

Standard 2: Layout a footer. (1917.S.2)

Footer Objectives

Students will:

- 1917.2.1 Discuss the size of footings for various widths of block.
- 1917.2.2 Describe the two types of footings used for a foundation.
- 1917.2.3 Describe the use of steel reinforcement in concrete, and how a footing is placed and cured.
- 1917.2.4 Describe how to estimate materials for a footing.
- 1917.2.5 Estimate and prepare a material list for a footer.

Standard 3: Demonstrate knowledge of blueprint reading. (1917.S.3)

Blueprint Reading Objectives

Students will:

- 1917.3.1 Identify various types of working drawings, and describe the divisions found in a set of building plans.
- 1917.3.2 Measure accurately using an architects scale.
- 1917.3.3 Interpret a set of brick masonry specifications, listing major items found on the specifications and the items that may be shown in detail.
- 1917.3.4 Properly read a structural plan, a plan view, and a finish schedule.

Fundamentals of Masonry

WVDE Code 1919

This course will introduce students to the basic fundamentals in the masonry industry. Students will become familiar with basic tools, equipment and techniques used in masonry.

Standard 1: Identify, explore, and evaluate career opportunities related to masonry. (1919.S.1)

Career Opportunities Objectives

Students will:

- 1919.1.1 Describe a variety of careers related to masonry, and the training necessary to be successful in those careers.
- 1919.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of masonry.
- 1919.1.3 Identify sources of information about careers in masonry.

Standard 2: Demonstrate knowledge of basic blueprint reading. (1919.S.2)

Blueprint Reading Objectives

Students will:

- 1919.2.1 Interpret scale drawings.
- 1919.2.2 Define terms, abbreviations and symbols associated with basic blueprint reading.
- 1919.2.3 Demonstrate knowledge of specifications and codes.

Standard 3: Demonstrate safe work habits while working with masonry materials and equipment.(1919.S.3)

Safe Work Habits Objectives

Students will:

- 1919.3.1 Identify and practice safety rules used in the masonry lab.
- 1919.3.2 Complete a safety checklist.
- 1919.3.3 Identify safety practices related to the use of various hand and power masonry tools.

Standard 4: Identify and properly use various hand tools related to the masonry field. (1919.S.4)

Hand Tools Objectives

Students will:

- 1919.4.1 Identify and describe various masonry tools, and demonstrate how to use them properly.
- 1919.4.2 Explain the basic rules concerning the care of masonry hand tools.

Standard 5: Demonstrate proper and safe use of ladders and scaffolds. (1919.S.5)

Ladders and Scaffolds Objective

Students will:

- 1919.5.1 Identify basic types of ladders and scaffolds and safely erect both using proper placement and angle.

Standard 6: Describe various masonry units and the manufacturing processes used to produce them. (1919.S.6)

Masonry Units Objectives

Students will:

- 1919.6.1 Describe the development of brick and how they are used today.
- 1919.6.2 Describe the methods of block manufacturing from early times to present.
- 1919.6.3 Match the description of various brick and block units to correct size of the units.
- 1919.6.4 List the different proportions and characteristics of brick.

Standard 7: Identify the different mortar types and their characteristics. (1919.S.7)

Mortar Objectives

Students will:

- 1919.7.1 Identify the various types of mortar used in masonry work.
- 1919.7.2 Describe admixtures and their purpose in masonry work.
- 1919.7.3 Describe the causes and prevention of efflorescence.

Standard 8: Interpret and read the various rules in masonry work. (1919.S.8)

Masonry Objectives

Students will:

- 1919.8.1 Describe the purpose of brick spacing and its purpose in spacing mortar joints.
- 1919.8.2 Describe the purpose of a modular rule and how it is used in relation to modular construction.

Standard 9: Properly mix and spread mortar. (1919.S.9)

Mortar Objectives

Students will:

- 1919.9.1 Define terms associated with spreading mortar.
- 1919.9.2 Proportion mortar ingredients for specific mixes, and mix to the proper consistency using a mortar hoe and a power mortar mixer.
- 1919.9.3 Identify different methods of picking up mortar from a board and pan.
- 1919.9.4 Distinguish between the correct and incorrect ways of holding a trowel and properly spread mortar.
- 1919.9.5 Label head and bed joints when given an illustration.
- 1919.9.6 Demonstrate the ability to spread mortar on a 2x4.

Fundamentals of Materials Distribution

WVEIS Code 1921

This course will introduce students to the careers, skills and knowledge necessary to obtain employment in occupations related to preparing, accepting, checking and storing goods received for business and industry.

Standard 1: Identify, explore, and evaluate career opportunities related to materials handling and inventory control. (1921.S.1)

Career Opportunities Objectives

Students will:

- 1921.1.1 Describe a variety of careers related to materials handling and inventory control, and the training necessary to be successful in those careers.
- 1921.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of materials handling and inventory control.
- 1921.1.3 Identify sources of information about careers in materials handling and inventory control.

Standard 2: Demonstrate knowledge of basic safety rules and equipment as it relates to materials handling and inventory control. (1921.S.2)

Safety Rules Objectives

Students will:

- 1921.2.1 Recognize and follow general shop safety guidelines.
- 1921.2.2 Identify, select and demonstrate proper use and care of all basic personal safety equipment.
- 1921.2.3 Demonstrate proper lifting techniques and describe injuries that may occur if these procedures are not followed.
- 1921.2.4 Demonstrate the proper selection and use of fire extinguishers.
- 1921.2.5 Describe safety precautions used when handling hazardous materials.
- 1921.2.6 Demonstrate first aid procedures for immediate care in a variety of injuries.

Standard 3: Prepare merchandise for shipment. (1921.S.3)

Shipment Objectives

Students will:

- 1921.3.1 Address packages, cartons, and containers, and deliver merchandise to proper station for shipment.
- 1921.3.2 Determine method of shipment, UPS charges, and truck charges.
- 1921.3.3 Build skids, pallets, and boxes.
- 1921.3.4 Obtain goods from stockroom or warehouse; inspect merchandise to ensure entire order can be accounted for.
- 1921.3.5 Prepare invoices and appropriate shipping forms.
- 1921.3.6 Prepare damaged goods claims and package damaged goods for reshipment.

Standard 4: Accept and check materials received. (1921.S.4)

Accept and Check Materials Objectives

Students will:

- 1921.4.1 Describe the procedure for assisting carrier in off-loading supplies.
- 1921.4.2 Check invoice against purchase order and number of cartons against bill of lading.

- 1921.4.3 Prepare overage, shortage and discrepancy (OS&D) report and record carrier name and carrier number on receiving report.
- 1921.4.4 Spot check cartons for damage.

Standard 5: Properly store goods received. (1921.S.5)

Store Goods Received Objectives

Students will:

- 1921.5.1 Arrange goods according to identification codes.
- 1921.5.2 Check descriptions of goods against invoices.
- 1921.5.3 Maintain and update master warehouse location plans.
- 1921.5.4 Move goods to proper stocking area (normal control, first-in/first-out).
- 1921.5.5 Open containers with proper tools.
- 1921.5.6 Provide secure storage for property that is classified, sensitive, radioactive, hazardous or flammable.
- 1921.5.7 Store goods in proper location (bins, racks, etc.).

Materials Distribution Equipment

WVEIS Code 1923

This course will introduce students to various skills and knowledge necessary in moving goods for business and industry with manual and power equipment.

**Standard 1: Demonstrate safe and efficient use of manual materials handling equipment.
(1923.S.1)**

Equipment Objectives

Students will:

- 1923.1.1 List and explain the uses of various kinds of material handling equipment.
- 1923.1.2 Properly operate a dolly, desk mover, file cabinet mover, and a barrel truck.
- 1923.1.3 Properly operate a four-wheeled platform truck.
- 1923.1.4 Properly operate a 5000 lb. manual pallet jack.
- 1923.1.5 Properly operate a manually operated banding machine and demonstrate the use of plastic wrap.

**Standard 2: Demonstrate safe and efficient use of powered materials handling equipment.
(1923.S.2)**

Handling Equipment Objectives

Students will:

- 1923.2.1 Identify and explain the parts and controls of powered industrial trucks and manlift cages.
- 1923.2.2 Define and properly use forklift terms.
- 1923.2.3 Properly operate a stand up & reach fork truck (electric).
- 1923.2.4 Properly operate both an LPG/gas and an electric a sit down fork truck.
- 1923.2.5 Properly operate an electric order selector fork truck.
- 1923.2.6 Properly operate an electric pallet jack.
- 1923.2.7 List proper battery charging procedures and storage.
- 1923.2.8 List proper refueling procedures for LPG/gas powered fork trucks.
- 1923.2.9 Identify and describe the parts and controls of materials handling robots.
- 1923.2.10 Demonstrate basic robotic programming.

Materials Management

WVEIS Code 1925

This course will introduce students to the preparation of printed data for materials handling, using a variety of inventorying equipment.

Standard 1: Perform computer operations related to maintaining an inventory. (1925.S.1)

Computer Operations Objectives

Students will:

- 1925.1.1 Demonstrate computer functions and start up procedures.
- 1925.1.2 Prepare receiving reports and purchase requisitions.
- 1925.1.3 Demonstrate data entry.
- 1925.1.4 Prepare printouts on inventory by number or descriptions and packing lists.
- 1925.1.5 Prepare printed packing lists, purchase orders, and invoices.
- 1925.1.6 Demonstrate inventory adjustments.
- 1925.1.7 Prepare vendor list, sales register, and customer lists.
- 1925.1.8 Edit accounts.
- 1925.1.9 Print price lists.
- 1925.1.10 Define computerized inventory terms.

Standard 2: Perform bar code inventory operations related to performance inventory procedures. (1925.S.2)

Bar Code Objectives

Students will:

- 1925.2.1 Demonstrate UPC bar code reader operations.
- 1925.2.2 List operational procedures to upload and download inventory.
- 1925.2.3 Demonstrate proper care and storage of bar code equipment.
- 1925.2.4 List proper procedures to print bar code labels.

Supervisory Skills In Warehousing

WVEIS Code 1927

This course will instruct students in proper performance and execution of managerial duties in a warehouse.

Standard 1: Perform managerial duties within the warehouse. (1927.S.1)

Managerial Duties Objectives

Students will:

- 1927.1.1 Interpret policies, directives, or procedures for personnel.
- 1927.1.2 Plan layout of facilities and storage of goods.
- 1927.1.3 Prepare requisitions for in-house supplies or equipment.
- 1927.1.4 Supervise the accomplishment of work priorities.
- 1927.1.5 Supervise inventory of goods in the facility.
- 1927.1.6 Supervise receiving operations.
- 1927.1.7 Supervise shipping operations.
- 1927.1.8 Supervise storage of goods in the facility.

Standard 2: Perform personnel training duties within the warehouse. (1927.S.2)

Personnel Training Objectives

Students will:

- 1927.2.1 Prepare training and evaluation procedures for personnel.
- 1927.2.2 Role play an interview with a potential employee.
- 1927.2.3 Prepare employee selection criteria.
- 1927.2.4 Prepare and update employee portfolio.

Standard 3: Perform the administrative functions required in warehousing. (1927.S.3)

Administrative Functions Objectives

Students will:

- 1927.3.1 Adjust inventory records and complete inventory reports.
- 1927.3.2 Audit stock balance and consumption reports.
- 1927.3.3 Conduct on-going and periodic physical inventory.
- 1927.3.4 Make entries on the stock locator system cards to show changes in location of goods, and properly file cards.
- 1927.3.5 Prepare requisition and shipment documents.
- 1927.3.6 Post transaction data to stock control record cards.

Oracle I – Data Modeling

WVEIS Code 1932

This is half-credit course on conceptual data modeling and physical data modeling. This course will provide the foundation for future software engineers or database administrators.

Standard 1: Introduction to the Internet Academy (1932.S.1)

Students will describe the roles of the database in our society, as well as the career opportunities in this field.

Internet Academy Objectives

Students will:

- 1932.1.1 Cite examples of jobs, salary, and opportunities he/she will have as a result of participating in the Academy.
- 1932.1.2 Describe the role a database plays in a business and determine its' evolution.
- 1932.1.3 Demonstrate the difference between "Data" and "Information".
- 1932.1.4 Describe how a database is used for e-businesses and cite examples.
- 1932.1.5 Identify specific areas of business that use database software and explain how it is integral to their success.

Standard 2: Introduction to Entities, Attributes and Relationships (1932.S.2)

Students will explain conceptual data modeling and physical data modeling.

Entities, Attributes and Relationships Objectives

Students will:

- 1932.2.1 Explain why conceptual modeling is important.
- 1932.2.2 Describe what an entity is and give examples.
- 1932.2.3 Describe what an attribute is and give examples.
- 1932.2.4 Describe what a relationship is and give examples.
- 1932.2.5 Draw a simple diagram.
- 1932.2.6 Read a simple diagram.
- 1932.2.7 Understand the importance of clear communication when discussing business informational requirements.

Standard 3: Entities and Attributes in Detail (1932.S.3)

Students will identify and properly use entities and attributes, and track these in various sources of information.

Entities and Attributes in Detail Objectives

Students will:

- 1932.3.1 Track entities from various sources.
- 1932.3.2 Track attributes from various sources.
- 1932.3.3 Decide when you should model a piece of information as an entity or an attribute.
- 1932.3.4 Model subtypes and supertypes.

Standard 4: Relationships in Detail (1932.S.4)

Students will establish a relationship between two entities, and discuss the differences and similarities between relationships and attributes.

Relationships in Detail Objectives

Students will:

- 1932.4.1 Create a well-defined relationship between entities.

- 1932.4.2 Identify which relationship types are common and which are not.
- 1932.4.3 Give real-life example of uncommon relationship types.
- 1932.4.4 Choose between using an attribute or a relationship to model particular information.
- 1932.4.5 Resolve a m:m relationship into an intersection entity and two relationships.
- 1932.4.6 Resolve other relationships and know when to do so.
- 1932.4.7 Understand the basic rules of Normalization.

Standard 5: Model Hierarchical/Recursive Relationship (1932.S.5)

Students will follow standard methods for developing common relationships, including the creation and use of diagramming conventions and symbols.

Model Hierarchical/Recursive Relationship Objectives

Students will:

- 1932.5.1 Model advanced data constructs including recursive relationships, including the creation and use of diagramming conventions and symbols.
- 1932.5.2 Develop an ER model using subtypes, supertypes and an exclusive arc.

Standard 6: Unique Identifiers (1932.S.6)

Students will explain why unique identifiers are relevant and how to model them correctly.

Unique Identifiers Objectives

Students will:

- 1932.6.1 Describe the problem of identification in the real world.
- 1932.6.2 Add unique identifiers to your model and know how they are represented.
- 1932.6.3 Recognize correct and incorrect unique identifiers.

Standard 7: Constraints (1932.S.7)

Students will describe the difference and the similarities between domains arcs and subtypes.

Constraints Objectives

Students will:

- 1932.7.1 Describe when an arc is needed in your model.
- 1932.7.2 Describe the similarities between arcs and subtypes.
- 1932.7.3 Describe various types of business constraints that cannot be represented in an ER diagram.

Standard 8: Modeling Change (1932.S.8)

Students will understand the possibilities and difficulties that arise when time is incorporated into an entity model.

Modeling Change Objectives

Students will:

- 1932.8.1 Make a well considered decision about using entity DATE or attribute date.
- 1932.8.2 Model life cycle attributes to all entities that need them.
- 1932.8.3 List all constraints that arise from using a time dimension.
- 1932.8.4 Cope with journaling.

Standard 9: Advanced Modeling Topics (1932.S.9)

Students will recognize patterns in conceptual data models.

Advanced Modeling Topics Objectives

Students will:

- 1932.9.1 Recognize common patterns in conceptual data models.

- 1932.9.2 Know the general behavior, such as the common constraints, of these patterns.
- 1932.9.3 Use particular drawing conventions.
- 1932.9.4 Create a more generic model for selected sections of a conceptual data model.

Standard 10: Mapping the Entity Relationship Model (1932.S.10)

Students will transform an Entity Relationship model into a physical database design.

Mapping the Entity Relationship Model Objectives

Students will:

- 1932.10.1 Explain the need of a physical database design.
- 1932.10.2 Know the concepts of the relational model.
- 1932.10.3 Agree on the necessity of naming rules.
- 1932.10.4 Perform basic mapping.
- 1932.10.5 Decide how to transform complex concepts.

Standard 11: Subtypes and Normalization (1932.S.11)

Students will increase the integrity of a database design by normalizing table data to the third normal form.

Subtypes and Normalization Objectives

Students will:

- 1932.11.1 Describe the rules for mapping subtypes.
- 1932.11.2 Define normalization and explain its benefits.
- 1932.11.3 Place tables in Third Normal Form.

Standard 12: Denormalized Data (1932.S.12)

Students will improve the performance of a database by denormalization.

Denormalized Data Objectives

Students will:

- 1932.12.1 Define denormalization and explain its benefits.
- 1932.12.2 Differentiate and describe the different circumstances where denormalization is appropriate.

Standard 13: Final Presentation (1932.S.13)

Students will create an ERM, use Structured Query Language to demonstrate the database project solution and present a convincing argument as to why their solution is best.

Final Presentation Objectives

Students will:

- 1932.13.1 Demonstrate ability to work collaboratively within a group.
- 1932.13.2 Determine which one of the case studies to use for their final project.
- 1932.13.3 Resolve many-to-many relationships, identify unique id's and employ modeling techniques.
- 1932.13.4 Use ERM to create table instance charts.
- 1932.13.5 Build tables from the table instance charts and ERM.
- 1932.13.6 Populate those tables with meaningful sample data.
- 1932.13.7 Be able to demonstrate by querying the tables created.
- 1932.13.8 Evaluate and generate criteria for a formal, business presentation.
- 1932.13.9 Construct a persuasive group presentation using the guidelines set forth in class.
- 1932.13.10 Deliver a formal business presentation for the class that discusses an Entity-Relationship Model and Initial Database Design.
- 1932.13.11 Demonstrate the functionality of the database and how SQL is used to query data.

Oracle II – SQL Programming

WVEIS Code 1934

This half-credit course will introduce SQL programming.

Standard 1: Introduction to SQL (1934.S.1)

Students will describe the relational database management system and the object relational database management system.

Introduction to SQL Objectives

Students will:

- 1934.1.1 List the features of Oracle 9i.
- 1934.1.2 Discuss the theoretical and physical aspects of a relational database.
- 1934.1.3 Describe the Oracle implementation of the RDBMS and ORDBMS.
- 1934.1.4 List the capabilities of SQL SELECT statements.

Standard 2: Writing a Basic SQL Statement and Restricting and Sorting Data (1934.S.2)

Students will execute a basic SELECT statement and differentiate between SQL statements and iSQL *Plus/Oracle Platform commands.

Basic SQL Statement and Restricting and Sorting Data Objectives

Students will:

- 1934.2.1 Execute a basic SELECT statement.
- 1934.2.2 Differentiate between SQL statements and iSQL *Plus/Oracle Platform commands.
- 1934.2.3 Limit the rows retrieved by a query.
- 1934.2.4 Sort the rows retrieved by a query.

Standard 3: Single Row Functions (1934.S.3)

Students will utilize both single row functions and those that convert data types.

Single Row Functions Objectives

Students will:

- 1934.3.1 Describe various types of functions available in SQL.
- 1934.3.2 Use character, number, and date functions in SELECT statements.
- 1934.3.3 Describe the use of conversion functions.
- 1934.3.4 Perform calculations on data.
- 1934.3.5 Modify individual data items.
- 1934.3.6 Format data and numbers for display purposes.
- 1934.3.7 Convert column data types.

Standard 4: Displaying Data From Multiple Tables (1934.S.4)

Students will write SQL SELECT statements to obtain data from more than one table.

Displaying Data From Multiple Tables Objectives

Students will:

- 1934.4.1 Write SELECT statements to access data from more than one table using equality and nonequality joins.
- 1934.4.2 View data that generally does not meet a join condition by using outer joins.
- 1934.4.3 Join a table to itself by using a self join.
- 1934.4.4 Retrieve records with the USING and ON clauses.

Standard 5: Aggregating Data Using Group Functions (1934.S.5)

Students will use group functions and write and execute GROUP BY and HAVING clauses.

Group Functions Objectives

Students will:

- 1934.5.1 Identify the available group functions.
- 1934.5.2 Describe the use of group functions.
- 1934.5.3 Group data using the GROUP BY clause.
- 1934.5.4 Include or exclude grouped rows by using the HAVING clause.

Standard 6: Subqueries and Producing Readable Output (1934.S.6)

Students will use single-row subqueries, multiple-row subqueries and substitution variables.

Subqueries and Producing Readable Output Objectives

Students will:

- 1934.6.1 Describe the types of problem that subqueries can solve.
- 1934.6.2 Define subqueries.
- 1934.6.3 List the types of subqueries.
- 1934.6.4 Write single-row and multiple-row subqueries.
- 1934.6.5 Produce queries that require a substitution variable.
- 1934.6.6 Produce more readable output.
- 1934.6.7 Create and execute script files.

Standard 7: Manipulating Data (1934.S.7)

Students will use SQL and data manipulation language (DML) to produce customized output.

Manipulating Data Objectives

Students will:

- 1934.7.1 Describe each DML statement.
- 1934.7.2 Demonstrate how to insert rows into a table.
- 1934.7.3 Update and merge rows in a table.
- 1934.7.4 Delete rows from a table.
- 1934.7.5 Control transactions.

Standard 8: Creating and Managing Tables and Including Constraints (1934.S.8)

Students will create and manage database objects, and will alter tables and properly use constraints within tables.

Creating and Managing Tables and Including Constraints Objectives

Students will:

- 1934.8.1 Describe the main database objects.
- 1934.8.2 Create tables and alter table definitions.
- 1934.8.3 Describe the data types that can be used when specifying column definition.
- 1934.8.4 Drop, rename and truncate tables.
- 1934.8.5 Describe, create and maintain constraints.

Standard 9: Creating Views and Other Database Objects (1934.S.9)

Students will learn to create and use assorted views, query the data dictionary and perform Top-N analysis.

Creating Views and Other Database Objects Objectives

Students will:

- 1934.9.1 Describe a view.
- 1934.9.2 Create, alter the definition and drop a view.
- 1934.9.3 Retrieve data through a view.
- 1934.9.4 Insert, update and delete data through a view.
- 1934.9.5 Create and use an inline view.
- 1934.9.6 Perform "Top-N" analysis.
- 1934.9.7 Create, maintain and use sequences, indexes, private and public synonyms.

Standard 10: Controlling User Access and SQL Workshop (1934.S.10)

Students will create and maintain commonly used database objects and grant different levels of access privileges.

Controlling User Access and SQL Workshop Objectives

Students will:

- 1934.10.1 Create users.
- 1934.10.2 Create roles to ease setup and maintenance of the security model.
- 1934.10.3 Use the GRANT and REVOKE statements to grant and revoke object privileges.
- 1934.10.4 Create and access database links.
- 1934.10.5 Create tables and sequences.
- 1934.10.6 Modify data in the tables.
- 1934.10.7 Modify table definitions.
- 1934.10.8 Create views.
- 1934.10.9 Write scripts containing SQL and Oracle Platform commands.
- 1934.10.10 Generate a simple report.

Standard 11: Using Set Operators (1934.S.11)

Students will describe SET operators and use a SET operator to combine multiple queries into a single query.

Using Set Operators Objectives

Students will:

- 1934.11.1 Describe SET operators.
- 1934.11.2 Use a SET operator to combine multiple queries into a single query.
- 1934.11.3 Control the order of rows returned.

Standard 12: Oracle 9i Datetime Functions (1934.S.12)

Students will manipulate the datetime datatypes using datetime functions.

Oracle 9i Datetime Functions Objectives

Students will:

- 1934.12.1 Use all of the datetime functions when manipulating datetime datatypes.

Standard 13: Enhancements to the GROUP BY Clause (1934.S.13)

Students will obtain summary information by using group functions on tables.

GROUP BY Clause Objectives

Students will:

- 1934.13.1 Use the ROLLUP operation to produce subtotal values.
- 1934.13.2 Use the CUBE operation to produce cross-tabulation values.
- 1934.13.3 Use the GROUPING function to identify the row values created by ROLLUP or CUBE.
- 1934.13.4 Use GROUPING SETS to produce a single result set.

Standard 14: Advances Subqueries (1934.S.14)

Students will learn how to write multiple-column subqueries and subqueries in the FROM clause of a SELECT statement.

Advances Subqueries Objectives

Students will:

- 1934.14.1 Write a multiple-column subquery.
- 1934.14.2 Describe and explain the behavior of subqueries when null values are retrieved.
- 1934.14.3 Write a subquery in a FROM clause.
- 1934.14.4 Use scalar subqueries in SQL.
- 1934.14.5 Describe the types of problems that can be solved with correlated subqueries.
- 1934.14.6 Write correlated subqueries.
- 1934.14.7 Update and delete rows using correlated subqueries.
- 1934.14.8 Use the EXISTS and NOT EXISTS operators.
- 1934.14.9 Use the WITH clause.

Standard 15: Hierarchical Retrieval and Oracle 9i Extensions to DML and DDL Statements (1934.S.15)

Students will use hierarchical queries to create tree-structured reports.

Hierarchical Retrieval Objectives and Oracle 9i Extensions to DML and DDL Statements Objectives

Students will:

- 1934.15.1 Interpret the concept of a hierarchical query.
- 1934.15.2 Create a tree-structured report.
- 1934.15.3 Format hierarchical data.
- 1934.15.4 Exclude branches from the tree structure.
- 1934.15.5 Describe the features of multitable inserts.
- 1934.15.6 Use multitable inserts.
- 1934.15.7 Create and use external tables.
- 1934.15.8 Name the index at the time of creating a primary key constraint.

Oracle III – Introduction to Java

WVEIS Code 1936

This half-credit course in Java teaches the fundamentals of the language.

Standard 1: Java Fundamentals (1936.S.1)

Students will describe the essential elements of the Java Language.

Java Fundamentals Objectives

Students will:

- 1936.1.1 Describe Java's place in computer language history.
- 1936.1.2 Explain how Java relates to the Internet.
- 1936.1.3 Recite the fundamentals of object-oriented programming.
- 1936.1.4 Describe the general form of a Java program.
- 1936.1.5 Use variables and apply IF and FOR statements.
- 1936.1.6 Create a block of codes.
- 1936.1.7 Recognize the Java keywords.

Standard 2: Introducing Data Types and Operators (1936.S.2)

Students will describe Java's foundational (simple) types and the set of operators that apply to them.

Introducing Data Types and Operators Objectives

Students will:

- 1936.2.1 Use Java's simple types.
- 1936.2.2 Specify literals for the simple types and for strings.
- 1936.2.3 Initialize variables.
- 1936.2.4 Describe the scope rules of a method.
- 1936.2.5 Understand type conversion in expressions.
- 1936.2.6 Apply casting.
- 1936.2.7 Use the arithmetic operators.
- 1936.2.8 Use the relational and logical operators.
- 1936.2.9 Use the assignment operator.

Standard 3: Program Control Statements (1936.S.3)

Students will implement Java's control statements that govern a program's flow of execution.

Program Control Statements Objectives

Students will:

- 1936.3.1 Input characters from the keyboard.
- 1936.3.2 Use the full forms of IF and FOR statements.
- 1936.3.3 Apply the switch.
- 1936.3.4 Use the WHILE loop.
- 1936.3.5 Use the DO-WHILE loop.
- 1936.3.6 Employ BREAK effectively.
- 1936.3.7 Apply CONTINUE and IDENTIFY when appropriate to use.

Standard 4: Classes, Objects and Methods (1936.S.4)

Students will discuss the fundamental concepts of classes and objects.

Classes, Objects and Methods Objectives

Students will:

- 1936.4.1 Describe the general form of a class.
- 1936.4.2 Create an object of a class.

- 1936.4.3 Understand object references.
- 1936.4.4 Create methods.
- 1936.4.5 Return a value from a method.
- 1936.4.6 Use parameters in a method.
- 1936.4.7 Add a constructor to a class.
- 1936.4.8 Apply the new operator.
- 1936.4.9 Understand garbage collection and finalizers.
- 1936.4.10 Apply the reference.
- 1936.4.11 Demonstrate how to overload a constructor.

Standard 5: Data Types and Operators in Detail (1936.S.5)

Students will examine arrays and string data types and operators.

Data Types and Operators Objectives

Students will:

- 1936.5.1 Use single-dimensional arrays.
- 1936.5.2 Apply multidimensional arrays.
- 1936.5.3 Initialize arrays.
- 1936.5.4 Use the alternative array declaration syntax.
- 1936.5.5 Utilize command-line arguments.
- 1936.5.6 Declare four string objects.

Standard 6: A Closer Look at Methods and Classes (1936.S.6)

Students will examine several features that relate to methods and classes, and begin to write code that reflects the way that it is written in the real world.

Methods and Classes Objectives

Students will:

- 1936.6.1 Use the public and private access specifiers.
- 1936.6.2 Pass objects to methods.
- 1936.6.3 Return objects from methods.
- 1936.6.4 Overload methods.
- 1936.6.5 Overload constructors.
- 1936.6.6 Create recursive methods.
- 1936.6.7 Create static methods and variables.
- 1936.6.8 Use static blocks.
- 1936.6.9 Describe nested and inner classes.

10-12 delete

Standard 7: Inheritance (1936.S.7)

Students will explore the way that Java implements inheritance, one of the fundamental principles of object-oriented programming.

Inheritance Objectives

Students will:

- 1936.7.1 Use the extends keyword to inherit a class.
- 1936.7.2 Describe the difference between a superclass and a subclass.
- 1936.7.3 Explain how inheritance affects member access.
- 1936.7.4 Use super to call a superclass constructor.
- 1936.7.5 Use super to access superclass members.
- 1936.7.6 Create a multilevel class hierarchy.
- 1936.7.7 State when constructors are called in a class hierarchy.
- 1936.7.8 Apply superclass reference to subclass objects.

- 1936.7.9 Override methods.
- 1936.7.10 Use dynamic method dispatch to support polymorphism.
- 1936.7.11 Create abstract methods and classes.
- 1936.7.12 Demonstrate the use of final.
- 1936.7.13 Explain the purpose and importance of the object class.

Oracle IV – Java Programming

WVEIS Code 1938

This half-credit course will continue teaching the fundamentals of the Java programming language.

Standard 1: Packages and Interfaces (1938.S.1)

Students will organize a program using packages and interfaces.

Packages and Interfaces Objectives

Students will:

- 1938.1.1 Create a package
- 1938.1.2 Describe how packages affect member access.
- 1938.1.3 Use protected members.
- 1938.1.4 Import packages.
- 1938.1.5 Create an interface.
- 1938.1.6 Implement an interface.
- 1938.1.7 Use interface variables.
- 1938.1.8 Extend an interface.

Standard 2: Exception Handling (1938.S.2)

Students will handle errors effectively using Java exception.

Exception Handling Objectives

Students will:

- 1938.2.1 Describe the purpose of exception handling.
- 1938.2.2 Explain how TRY and CATCH work together to handle an exception.
- 1938.2.3 Create an exception handler.
- 1938.2.4 Understand the consequences of an unhandled exception.
- 1938.2.5 Use multiple catch statements.
- 1938.2.6 Nest try blocks.
- 1938.2.7 Throw an exception.
- 1938.2.8 Rethrow an exception.
- 1938.2.9 Use the methods of throwable.
- 1938.2.10 Use finally.
- 1938.2.11 Use throws.
- 1938.2.12 Create their own exception classes.

Standard 3: Using Input/Output (1938.S.3)

Students will explain the overall organization of Java's I/O system, and discuss several fundamental techniques that use it.

Using Input/Output Objectives

Students will:

- 1938.3.1 Describe a stream.
- 1938.3.2 List the main byte and character stream classes.
- 1938.3.3 Use the predefined streams.
- 1938.3.4 Read from the keyboard.
- 1938.3.5 Write to the monitor.
- 1938.3.6 Use the byte streams for file I/O.
- 1938.3.7 Read and write binary data.
- 1938.3.8 Access files in random order.
- 1938.3.9 Use the character-based streams for console I/O.

- 1938.3.10 Use the character-based streams for file I/O.
- 1938.3.11 Convert strings to numeric values using Java's type wrappers.

Standard 4: Multithreading (1938.S.4)

Students will cover the major aspects of multithreading, including creating a thread, using synchronization and thread communication, and setting thread priorities.

Multithreading Objectives

Students will:

- 1938.4.1 Describe the fundamentals of multithreading.
- 1938.4.2 Explain the purpose of the Thread class and the Runnable interface.
- 1938.4.3 Create a thread.
- 1938.4.4 Create multiple threads.
- 1938.4.5 Determine when a thread ends.
- 1938.4.6 Change a thread's priority.
- 1938.4.7 Describe the purpose of synchronization.
- 1938.4.8 Create synchronized methods.
- 1938.4.9 Use synchronized statements.
- 1938.4.10 Perform thread communication.
- 1938.4.11 Suspend, resume and stop threads.

Standard 5: Applets, Events and Miscellaneous Topics (1938.S.5)

Students will utilize several Applet Class methods to write their own applet.

Applets, Events and Miscellaneous Topics Objectives

Students will:

- 1938.5.1 Explain applet fundamentals.
- 1938.5.2 Describe the architecture of an applet.
- 1938.5.3 Request that the applet window be repainted.
- 1938.5.4 Use the status window.
- 1938.5.5 Pass parameters to an applet.
- 1938.5.6 Utilize several Applet Class methods.
- 1938.5.7 Describe the operation of the delegation event model.
- 1938.5.8 Explain event sources and event listeners.
- 1938.5.9 State the main event classes.
- 1938.5.10 Handle mouse events.
- 1938.5.11 Describe transient, volatile, instance of, native, and strict fp.

Standard 6: Introduction to Integrated Design Environment (1938.S.6)

Students will effectively use the IDE, or "tools" to write programs.

Integrated Design Environment Objectives

Students will:

- 1938.6.1 Compare various types of IDE's for their strength/weaknesses.
- 1938.6.2 Chose one and download/install the application.
- 1938.6.3 Analyze performance and ease-of-use through creating new workspaces, projects and applications.
 - Build and execute Java applications.
 - Modify Java application source code.
 - Recompile sample applications from previous sections.
- 1938.6.4 Demonstrate familiarity with Oracle's JDeveloper design environment.

Standard 7: Case Study Final Projects (1938.S.7)

Students will design and create their own Java application.

Case Study Final Projects Objectives

Students will:

- 1938.7.1 Read the narrative and understand the general description of the case study.
- 1938.7.2 Develop a plan for implementation.
- 1938.7.3 Write a program outline.
- 1938.7.4 Write the skeleton for the class.
- 1938.7.5 Choose the objects and/or variables that are needed to display the question and the menu of opinions.
- 1938.7.6 Declare and initialize these objects and/or variables.
- 1938.7.7 Display the question and the menu.
- 1938.7.8 Construct an application that reads the menu selection from the keyboard, displays the text of the item selected and enables the user to quit the program.
- 1938.7.9 Compile and run the program.
- 1938.7.10 Assign the functionality in the current program to one or more methods of the class.
- 1938.7.11 Rewrite the program to declare an instance of the class and then call appropriate methods of the instance to recreate the functionality that exists in the current program.
- 1938.7.12 Modify the program so that students' votes are tallied.
- 1938.7.13 Display the totals for each menu item when the program terminates.
- 1938.7.14 Modify the program so that there is one question and four menu items, each containing an opinion.
- 1938.7.15 Enable the question and opinion to be overwritten on the command line.

Standard 8: Final Presentation Project (1938.S.8)

Students will demonstrate proficiency of the concepts learned by participating in a final group presentation.

Final Presentation Project Objectives

Students will:

- 1938.8.1 Demonstrate ability to work collaboratively within a group.
- 1938.8.2 Prepare to take the APCS (if applicable).
- 1938.8.3 Determine roles for each person in the group.
- 1938.8.4 Create a script that will include each person in the group and follow the "Mock Interview" scenario.
- 1938.8.5 Prepare the final presentation project according to the guidelines provided.
- 1938.8.6 Present the mock interview presentation.
- 1938.8.7 Provide feedback to peer groups.

Standard 9: AP Computer Science and Academy Java Final Exam (1938.S.9)

Students will prepare to take the APCS or the AJFE exams.

AP Computer Science and Academy Java Objectives

Students will:

- 1938.9.1 Prepare to take the APCS or the Academy Java Final Exam (or both).
- 1938.9.2 Identify (if any) possible dates for taking the APCS and the Academy Java Final Exam.
- 1938.9.3 Develop a schedule for preparation and list of activities.
- 1938.9.4 Complete the Open Questions listed in the Appendix.
- 1938.9.5 Successfully prepare to take the Java Final Exam, covering chapters 1-12 of the Academy Special Edition Java Programming book.
- 1938.9.6 Demonstrate proficiency in 12 basic Java topic areas.
- 1938.9.7 Take the Academy Java Final Exam.

Floriculture

WVEIS Code 1941

Floriculture introduces students to careers in the floral industry and provides basic instruction in the techniques of floral design and merchandising.

Standard 1: Demonstrate leadership and communication skills. (1941.S.1)

Leadership and Communication Skills Objectives

Students will:

- 1941.1.1 Utilize record-keeping skills in work-based experience programs (SAE).
- 1941.1.2 Identify appropriate career opportunities in the floriculture industry.
- 1941.1.3 Draft and prepare a resume, fill out a job application, demonstrate employability skills.
- 1941.1.4 Develop personal relation and communication skills.
- 1941.1.5 Describe employment and floriculture industry ethics.

Standard 2: Utilize principles of design to critique floral designs. (1941.S.2)

Floral Designs Objectives

Students will:

- 1941.2.1 Utilize floriculture principles, elements and theory of design.
- 1941.2.2 Identify basic designs and arrangements associated with floriculture principles of design.
- 1941.2.3 Explain the concepts and use of color.

Standard 3: Identify and maintain cut flowers and greens. (1941.S.3)

Cut Flowers and Greens Objectives

Students will:

- 1941.3.1 Identify and classify flowers and foliage.
- 1941.3.2 List the techniques to maintain optimum flower and foliage quality.

Standard 4: Manipulate floral materials and supplies. (1941.S.4)

Floral Materials and Supplies Objectives

Students will:

- 1941.4.1 Identify the basic mechanics and supplies used in floral design.
- 1941.4.2 Identify materials to wire flowers for corsages, arrangements and wreaths.
- 1941.4.3 Demonstrate construction of bows.

Standard 5: Design product in selected specialty areas. (1941.S.5)

Specialty Areas Objectives

Students will:

- 1941.5.1 Design boutonnieres and corsages.
- 1941.5.2 Identify concepts in floral design of holiday arrangements.
- 1941.5.3 Identify designs for weddings and receptions.
- 1941.5.4 Recognize practice in sympathy floral designs.
- 1941.5.5 Dry and preserve flowers and foliage to make a dried flower presentation.
- 1941.5.6 Explain appropriate indoor planting schemes, construction and maintenance.

Standard 6: Develop floral operations and management strategies. (1941.S.6)

Floral Operations and Management Strategies Objectives

Students will:

- 1941.6.1 Develop skills in retail sales using various selling techniques.
- 1941.6.2 Develop a visual merchandising plan to project the right image.
- 1941.6.3 Identify the components and the importance of a floral delivery system.
- 1941.6.4 Identify professional trade organizations organized to assist the retail florist.

Greenhouse Technology

WVEIS Code 1943

This area of study is designed to provide both college bound students and work bound students with the basic skills and knowledge needed in the greenhouse management industry. Major instructional concepts include: plant environments, classification, plant processes, growing media, plant nutrients, propagation, growth, pests and management procedures, nursery and landscape techniques, structures operation and maintenance and advanced greenhouse practice and technologies.

Standard 1: Demonstrate leadership development (1943.S.1)

Leadership Development Objectives

Students will:

- 1943.1.1 Utilize record-keeping skills in work-based experience programs.
- 1943.1.2 Develop and exhibit communication skills.
- 1943.1.3 Draft and complete a resume, complete a job application, and demonstrate job seeking/keeping skills.
- 1943.1.4 Demonstrate personal and social skills.
- 1943.1.5 Research career opportunities in the greenhouse management industry.

Standard 2: Identify greenhouse designs, operation and maintenance. (1943.S.2)

Greenhouse Objectives

Students will:

- 1943.2.1 Identify different greenhouse parts and compare types of structures and coverings.
- 1943.2.2 Demonstrate safety and proper manipulation of greenhouse equipment.
- 1943.2.3 Diagram operational systems in the greenhouse operation.
- 1943.2.4 Analyze suitable greenhouse locations and recommend interior layout.

Standard 3: Develop plant classification and identification skills. (1943.S.3)

Plant Classification and Identification Skills Objectives

Students will:

- 1943.3.1 Describe the natural classification system for the plant kingdom.
- 1943.3.2 Identify and research plants that are important to the greenhouse industry.

Standard 4: Develop skill in environmental control and plant growth. (1943.S.4)

Environmental Control And Plant Growth Objectives

Students will:

- 1943.4.1 Describe the plant processes involved with plant growth and development.
- 1943.4.2 List plant growth regulators and document their effects on plants.
- 1943.4.3 Explain how essential elements become available for plant use.
- 1943.4.4 Identify and document the effects of environmental factors on plant growth.

Standard 5: Identify greenhouse media and containers. (1943.S.5)

Greenhouse Media and Containers Objectives

Students will:

- 1943.5.1 Research the components of media and amendments.
- 1943.5.2 Demonstrate the effect of various greenhouse media and proper media preparation on plant

- growth.
- 1943.5.3 Compare and contrast basic types and sizes of containers used in greenhouse management.

Standard 6: Identify plant processes and propagation. (1943.S.6)

Plant Processes and Propagation Objectives

Students will:

- 1943.6.1 Perform methods of propagating plants.
- 1943.6.2 Manipulate total environment from juvenile to mature plant.
- 1943.6.3 Describe plant growth and propagation processes including photosynthesis, respiration, transpiration and pollination.

Standard 7: Identify and control disease, insects, and weeds. (1943.S.7)

Control Disease, Insects and Weeds Objectives

Students will:

- 1943.7.1 Identify and exhibit guidelines for pesticide use.
- 1943.7.2 Practice integrated pest management procedures.
- 1943.7.3 Describe and evaluate control methods, chemical formulations and equipment used to control pests in the greenhouse.

Standard 8: Develop skills in greenhouse business management. (1943.S.8)

Greenhouse Business Objectives

Students will:

- 1943.8.1 Explore and discuss the various types of records kept in a greenhouse business.
- 1943.8.2 Use computers to solve problems related to greenhouse management.
- 1943.8.3 Describe the methods and determine the values and limitations of effective advertising.
- 1943.8.4 Develop a plan for profitable sales techniques.
- 1943.8.5 Record receipts and expenditures.

Standard 9: Safely conduct laboratory investigation. (1943.S.9)

Conduct Laboratory Investigation Objectives

Students will:

- 1943.9.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 1943.9.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 1943.9.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 1943.9.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 10: Apply technology to real world problems in greenhouses. (1943.S.10)

Technology in Greenhouses Objectives

Students will:

- 1943.10.1 Use computers and the World Wide Web (WWW) to solve problems related to work-based experience programs in greenhouses, locate, evaluate, and collect information from a variety of sources related to greenhouse technology, develop positive attitude, support lifelong learning, collaboration, personal pursuits, and productivity.
- 1943.10.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and

- telecommunications.
- 1943.10.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to greenhouse technology.
 - 1943.10.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of greenhouse technology.

Standard 11: Demonstrate process/workplace skills. (1943.S.11)

Process/Workplace Skills Objectives

Students will:

- 1943.11.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 1943.11.2 Explore careers available in greenhouse technology.
- 1943.11.3 Use a variety of sources to investigate the educational requirements of various careers in greenhouse technology.
- 1943.11.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 1943.11.5 Demonstrate correct language usage in all oral and written work.
- 1943.11.6 Perform effectively in both leadership and non-leadership roles.
- 1943.11.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 1943.11.8 Participate as a team member to complete a variety of assignments.

Horticulture

WVEIS Code 1945

Horticulture includes art, science and technology. This field of study explains concepts of plant growth and how plants are used in our environment for aesthetics, ecosystems and as plant products for human consumption. Students will gain skills for entry-level employment or entrance into an advanced training/degree program.

Standard 1: Demonstrate leadership development. (1945.S.1)

Leadership Development Objectives

Students will:

- 1945.1.1 Participate in a student organization and its components.
- 1945.1.2 Utilize record-keeping skills in work-based experience programs.
- 1945.1.3 Develop and exhibit communication skills.
- 1945.1.4 Draft and complete a resume, complete a job application, and demonstrate job seek/keep skills.
- 1945.1.5 Demonstrate personal and social skills.
- 1945.1.6 Research career opportunities in the greenhouse management industry.

Standard 2: Perform plant classification and identification. (1945.S.2)

Plant Classification And Identification Objectives

Students will:

- 1945.2.1 Describe the natural classification system for the plant kingdom.
- 1945.2.2 Identify plant species and explore their benefit to people.
- 1945.2.3 Identify and research plants that are important to the greenhouse industry.
- 1945.2.4 Describe the plant processes involved with plant growth and development.
- 1945.2.5 List plant growth regulators and document their effects on plants.
- 1945.2.6 Explain how essential elements become available for plant use.
- 1945.2.7 Identify and document the effects of environmental factors on plant growth.
- 1945.2.8 Compare and contrast types of plant-growing media.
- 1945.2.9 Determine appropriate amendments for optimum plant growth.
- 1945.2.10 Explain and utilize soil and water conservation practices.

Standard 3: Identify levels of plant processes and propagation. (1945.S.3)

Plant Processes And Propagation Objectives

Students will:

- 1945.3.1 Perform methods of propagating plants.
- 1945.3.2 Manipulate total environment from juvenile to mature plant.
- 1945.3.3 Identify plant growth and propagation processes including photosynthesis, respiration, transpiration and pollination.

Standard 4: Perform pest management. (1945.S.4)

Pest Management Objectives

Students will:

- 1945.4.1 Explain and apply the concepts of integrated pest management.
- 1945.4.2 Identify safety guidelines for tools, equipment and pesticide use.
- 1945.4.3 Identify pests and evaluate control methods according to label interpretation.
- 1945.4.4 Recognize, calibrate and operate pesticide application equipment
- 1945.4.5 Research and discuss the environmental and health concerns relating to pesticide usage.

1945.4.6 Interpret federal and state pesticide laws.

Standard 5: Identify the various specialty areas in horticulture. (1945.S.5)

Horticulture Objectives

Students will:

- 1945.5.1 Explore professions in floriculture and understand the scope of job opportunities.
- 1945.5.2 Demonstrate various techniques and procedures commonly used in the floriculture industry.
- 1945.5.3 Explore professions in greenhouse management and understand the scope of job opportunities.
- 1945.5.4 Demonstrate various techniques and procedures commonly used in the greenhouse management industry.
- 1945.5.5 Explore professions in nursery production and understand job requirements.
- 1945.5.6 Demonstrate techniques and procedures used in the nursery production industry.
- 1945.5.7 Research careers in the landscape and turf industry.
- 1945.5.8 Perform basic landscape design, plantings and maintenance tasks.
- 1945.5.9 Utilize Internet World Wide Web to explore specialty areas in horticulture.

Standard 6: Safely conduct laboratory investigation. (1945.S.6)

Laboratory Investigation Objectives

Students will:

- 1945.6.1 Engage in active inquiries, investigations, and hands-on activities a minimum of 50 percent of the time.
- 1945.6.2 Conduct explorations in a variety of environments (e.g., laboratories, libraries, parks, and other outdoor locations).
- 1945.6.3 Properly and safely manipulate equipment, materials, chemicals, organisms, and models.
- 1945.6.4 Use computers and other electronic technologies (e.g., computer, CBL, probe interfaces, laser discs) to collect, analyze, and/or report data, interact with simulations, and research.

Standard 7: Apply technology to real world problems in horticulture. (1945.S.7)

Technology Objectives

Students will:

- 1945.7.1 Use computers and the World Wide Web (WWW) to solve problems related to experience programs in horticulture, locate, evaluate, and collect information from a variety of sources related to horticulture, develop a positive attitude toward technology, support lifelong learning, collaboration, personal pursuits, and productivity.
- 1945.7.2 Demonstrate skills in word processing and the use of databases, spreadsheets, graphics and telecommunications.
- 1945.7.3 Use TV/satellite, VCR and Laser discs/DVD to retrieve information to complete classroom assignments related to horticulture.
- 1945.7.4 Use cameras and/or camcorders to record activities and progress of special projects in the area of horticulture.

Standard 8: Demonstrate process/workplace skills. (1945.S.8)

Process/Workplace Skills Objectives

Students will:

- 1945.8.1 Use computers and other electronic technologies to access, gather, store, retrieve, organize, analyze, and report data.
- 1945.8.2 Explore careers available in horticulture.

- 1945.8.3 Use a variety of sources to investigate the educational requirements of various careers in horticulture.
- 1945.8.4 Analyze problems, state causes and effects, and plan, organize, and implement a solution to the problem or a concept to improve the situation or process.
- 1945.8.5 Demonstrate correct language usage in all oral and written work.
- 1945.8.6 Perform effectively in both leadership and non-leadership roles.
- 1945.8.7 Evaluate information for reliability, completeness, and applicability to various assignments.
- 1945.8.8 Participate as a team member to complete a variety of assignments.

Landscape Design and Installation

WVEIS Code 1947

This course will prepare students to design appropriate landscapes for home, business and other facilities. After the design plan is formulated, Students will: implement the plan.

Standard 1: Demonstrate leadership and interpersonal skills. (1947.S.1)

Leadership and Interpersonal Skills Objectives

Students will:

- 1947.1.1 Write, deliver and evaluate a speech and/or presentation.
- 1947.1.2 Explore careers in the landscape industry.
- 1947.1.3 Determine appropriate job seeking and keeping skills.
- 1947.1.4 Describe ethical conduct.
- 1947.1.5 Use record-keeping skills in work-based experience programs.

Standard 2: Recognize basic landscape design. (1947.S.2)

Landscape Design Objectives

Students will:

- 1947.2.1 Determine environmental requirements for landscape plant materials.
- 1947.2.2 Recognize the appropriate plants for landscape use.
- 1947.2.3 Interpret landscape symbols for a landscape plan.
- 1947.2.4 Operate computer assisted design programs.
- 1947.2.5 Demonstrate drafting skills needed in a landscape plan.

Standard 3: Use safety in operation of horticulture tools and equipment. (1947.S.3)

Horticulture Tools and Equipment Objectives

Students will:

- 1947.3.1 Identify and properly use horticulture tools and equipment.
- 1947.3.2 Follow appropriate safety procedures and policies.
- 1947.3.3 Interpret and follow safety information from equipment manuals.
- 1947.3.4 Maintain and adjust safety devices.
- 1947.3.5 Service tools and equipment as to manufactures specifications.
- 1947.3.6 Operate equipment under job site conditions.

Standard 4: Implement principles of landscape design. (1947.S.4)

Principles of Landscape Design Objectives

Students will:

- 1947.4.1 Prepare an area to be landscaped.
- 1947.4.2 Construct walkways and landscape structures.
- 1947.4.3 Install balled and burlapped, containerized and bare root plantings.
- 1947.4.4 Install herbaceous landscape plants.
- 1947.4.5 Place edging materials.
- 1947.4.6 Mulch a landscape site.
- 1947.4.7 Install turf areas.
- 1947.4.8 Place planting to provide appropriate lighting.

Landscape Maintenance

WVEIS Code 1949

Landscape maintenance is designed to expose students to proper techniques for maintaining a well-designed landscape. Students will: understand the importance of landscape maintenance from the added aesthetic and financial value of the property.

Standard 1: Demonstrate leadership and interpersonal skills. (1949.S.1)

Leadership and Interpersonal Skills Objectives

Students will:

- 1949.1.1 Identify communication skills.
- 1949.1.2 Identify interview and employment readiness skills.
- 1949.1.3 Draft a resume.

Standard 2: Demonstrate safe use and operation of horticulture tools and equipment. (1949.S.2)

Horticulture Tools and Equipment Objectives

Students will:

- 1949.2.1 Identify and properly use horticulture tools and equipment.
- 1949.2.2 Follow appropriate safety procedures and policies.
- 1949.2.3 Interpret and follow safety information from equipment manuals.
- 1949.2.4 Maintain and adjust safety devices.
- 1949.2.5 Service tools and equipment as to manufacturer's specifications (including winterizing).
- 1949.2.6 Operate equipment under job site conditions.
- 1949.2.7 Identify and demonstrate the safe use of potentially hazardous materials (fuels, lubricants, etc.)

Standard 3: Practice safe use of pest management techniques. (1949.S.3)

Pest Management Objectives

Students will:

- 1949.3.1 Identify, calibrate, and properly use equipment.
- 1949.3.2 Identify and use personal safety equipment and protective clothing.
- 1949.3.3 Identify pests and the appropriate control techniques.
- 1949.3.4 Introduce Integrated Pest Management (IPM) techniques.
- 1949.3.5 Interpret pesticide labels and proper use as instructed.
- 1949.3.6 Identify and maintain an insect, disease, and weed control program.

Standard 4: Practice proper landscape maintenance techniques. (1949.S.4)

Landscape Objectives

Students will:

- 1949.4.1 Determine and follow appropriate lawn care practices.
- 1949.4.2 Aerate and dethatch turf areas.
- 1949.4.3 Determine and implement irrigation needs for turf and landscaped areas.
- 1949.4.4 Identify appropriate soil testing procedures.
- 1949.4.5 Over-seed, lime, and fertilize as deemed necessary.
- 1949.4.6 Determine and implement proper pruning timelines and practices.
- 1949.4.7 Maintain landscape edging materials.
- 1949.4.8 Mulch landscape planting.
- 1949.4.9 Maintain landscape structures.
- 1949.4.10 Describe appropriate winter protection.

ProStart I A

WVEIS Code 1953

ProStart is a foodservice curriculum developed by the Educational Foundation of the National Restaurant Association with input from thousands of foodservice professionals across the nation. The courses integrate academic and hands-on learning to provide an overview of the industry and competencies necessary for success in the foodservice industry. Completers of the ProStart program are eligible for a national certificate from the National Restaurant Association Educational Foundation. Students must pass rigorous tests at the completion of ProStart IA/IB and ProStart IIA/IIB, and complete 400 hour off-campus, paid internship. This course focuses on the basics of preparing and service of safe food, preventing accidents, using foodservice equipment and preparing certain types of food. It also addresses the business topics of human relations, customer service, controlling costs and certain math concepts.

Standard 1: Career Preparation (1953.S.1)

Students will prepare for a successful career in foodservice management.

Career Preparation Objectives

Students will:

- 1953.1.1 Explain how the food service industry provides an unique workplace environment.
- 1953.1.2 Describe the importance of customer service to success in foodservice and explain the elements of excellent service.
- 1953.1.3 Identify effective ways to communicate with customers and coworkers.
- 1953.1.4 Describe a variety of customers that have special needs.
- 1953.1.5 List employee workplace guidelines.
- 1953.1.6 Discuss the qualities of successful foodservice employees.
- 1953.1.7 Identify career opportunities within the foodservice industry.
- 1953.1.8 Describe the steps in looking for a job.
- 1953.1.9 Complete the necessary documents for a job interview including the resume, portfolio, cover letter and application.
- 1953.1.10 Participate in a job interview and write a follow-up thank you letter.

Standard 2: Prepare and Serve Safe Food (1953.S.2)

Students will learn how to prepare and serve safe food.

Prepare and Serve Safe Food Objectives

Students will:

- 1953.2.1 Demonstrate proper sanitary procedures for use in foodservice.
- 1953.2.2 Show how contamination and cross-contamination is most likely to occur.
- 1953.2.3 List the major causes of foodborne illnesses, and describe potentially hazardous foods.
- 1953.2.4 Describe the micro-organisms that cause foodborne illnesses and the conditions in which they thrive.
- 1953.2.5 Demonstrate safe and proper procedures for receiving, storing, preparing, holding, and serving food.
- 1953.2.6 Describe the seven HACCP steps.
- 1953.2.7 Discuss the role of the sanitarian and how managers prepare for health inspections.

Standard 3: Workplace Habits (1953.S.3)

Students will learn how to practice safe workplace habits.

Workplace Habits Objectives

Students will:

- 1953.3.1 Demonstrate proper safety procedures commonly used in foodservice operations including the use of fire extinguishers.
- 1953.3.2 Describe the role of OSHA regulations and explain the Hazard Communication Standard requirement for employers.
- 1953.3.3 Demonstrate proper procedures for reducing accidents involving fire, slips, trips, falls, lifting and carrying, cuts and equipment.
- 1953.3.4 Discuss liability issues relating to customers and employees.
- 1953.3.5 Discuss workman's compensation guidelines.
- 1953.3.6 Explain basic first aid concepts and procedures.
- 1953.3.7 Describe a Material Safety Data Sheet.

Standard 4: Foodservice Equipment Safety (1953.S.4)

Students will learn how to operate foodservice equipment safely and effectively.

Foodservice Equipment Safety Objectives

Students will:

- 1953.4.1 Demonstrate the safe use of foodservice equipment and utensils.
- 1953.4.2 Demonstrate how to sharpen and use different types of knives.
- 1953.4.3 Demonstrate how to cut and mix foods using standard kitchen equipment.
- 1953.4.4 Demonstrate proper maintenance, cleaning and sanitizing of foodservice equipment.
- 1953.4.5 List and describe the measuring utensils, hand tools, knives, pots and pans commonly used in a foodservice operation.
- 1953.4.6 List the equipment commonly used in the receiving, storage, food preparation, baking, holding and service, bar, dishwashing and waste disposal areas.

Standard 5: Math Functions Used In Foodservice Operations (1953.S.5)

Students will demonstrate business math functions used in foodservice operations.

Math Functions Used in Foodservice Operations

Students will:

- 1953.5.1 Demonstrate the four basic math functions as they relate to foodservice operations.
- 1953.5.2 List examples of the way fractions, decimals and percentages are used in foodservice operations.
- 1953.5.3 Discuss yield conversion factors.
- 1953.5.4 Identify the four basic units of measure in the metric system.
- 1953.5.5 Calculate standard recipe cost and cost per serving.
- 1953.5.6 Describe and give examples of controllable costs, fixed costs and variable costs as related to food, beverage and labor in foodservice operations.
- 1953.5.7 Explain the basic guidelines used for establishing controls in purchasing, receiving and storage of food and supplies.
- 1953.5.8 Explain the importance of food production standardization.
- 1953.5.9 List the three standard procedures needed to control production volume.

Standard 6: Basics of Food Preparation (1953.S.6)

Students will demonstrate the basics of food preparation.

Basics of Food Preparation Objectives

Students will:

- 1953.6.1 Describe the various liquid and dry cooking methods and the foods to which they are best

- suited.
- 1953.6.2 Describe standardized recipe components and functions and convert them to smaller and larger quantities.
 - 1953.6.3 Demonstrate types of knife cuts used in foodservice.
 - 1953.6.4 Identify the tools commonly used in foodservice for wet and dry measure and demonstrate understanding of equivalence of standard American and metric measures.
 - 1953.6.5 Define common cooking and foodservice preparation terms.

Standard 7: Nutrition in Foodservice Operation (1953.S.7)

Students will discuss the role of nutrition in foodservice operations.

Nutrition in Foodservice Operation Objectives

Students will:

- 1953.7.1 List and define the six groups of nutrients.
- 1953.7.2 Explain the role of Recommended Dietary Allowances and Food Guide Pyramid in planning healthful meals.
- 1953.7.3 Discuss the Dietary Guidelines for Americans.
- 1953.7.4 Explain the importance of reading nutritional labels.
- 1953.7.5 Discuss special diet concerns of customers.
- 1953.7.6 Demonstrate healthy cooking methods and identify recipes that preserve nutrients.
- 1953.7.7 Plan and prepare appealing and nutritionally balanced meals.

ProStart I B

WVEIS Code 1954

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Standard 1: Control Foodservice Costs (1954.S.1)

Students will learn how to control foodservice costs.

Control Foodservice Costs Objectives

Students will:

- 1954.1.1 Explain the four step cost control process.
- 1954.1.2 Calculate projected revenue, average cover and determine the revenue level of a foodservice operation.
- 1954.1.3 Discuss the relationship between cost and sales to determine food cost percentage.
- 1954.1.4 Perform math computations to define cost/volume/profit relationships.
- 1954.1.5 Define and explain the importance of an operative budget.
- 1954.1.6 Demonstrate operational procedures for preventing waste of food, beverages and supplies.
- 1954.1.7 Illustrate the cost percentage formula and apply it to operational procedures.
- 1954.1.8 Explain the three goals of sales control.
- 1954.1.9 Calculate total sales including tax and tip.
- 1954.1.10 Calculate average sales per customer.
- 1954.1.11 Balance cash register receipts.
- 1954.1.12 Explain the importance of an opening and closing inventory.
- 1954.1.13 Illustrate five ways to determine closing inventory and calculate its dollar value.
- 1954.1.14 Determine daily and monthly food cost percentages.
- 1954.1.15 Determine menu pricing using the four standard methods.

Standard 2: Sandwiches and Breakfast Foods (1954.S.2)

Students will prepare sandwiches and breakfast foods.

Sandwiches and Breakfast Foods Objectives

Students will:

- 1954.2.1 Explain how to keep dairy products safe and sanitary.
- 1954.2.2 Define the terms pasteurize and homogenize.
- 1954.2.3 Compare the differences of margarine and butter.
- 1954.2.4 Compare and contrast ripened, unripened, aged and processed cheeses and give examples of each.
- 1954.2.5 List the characteristics of eggs including size and grade.
- 1954.2.6 Prepare and serve eggs using a variety of cooking methods.
- 1954.2.7 Describe and prepare various types of breakfast foods and beverages.
- 1954.2.8 Demonstrate the set up of an efficient sandwich station.
- 1954.2.9 List different types of sandwiches and sandwich fillings.

Standard 3: Salads and Garnishes (1954.S.3)

Students will prepare salads and garnishes.

Salads and Garnishes Objectives

Students will:

- 1954.3.1 Identify and describe the various ingredients used to make assorted salads.
- 1954.3.2 Prepare and store salads properly.
- 1954.3.3 List the ingredients and prepare various salad dressings.
- 1954.3.4 Identify ingredients and prepare several dips.
- 1954.3.5 Demonstrate techniques used to prepare garnishes.
- 1954.3.6 Demonstrate garnishing plates.

Standard 4: Fruits and Vegetables (1954.S.4)

Students will describe the characteristics of fruits and vegetables.

Fruits and Vegetables Objectives

Students will:

- 1954.4.1 Describe and identify the various varieties of fruits and vegetables and the forms in which they are available (fresh, frozen, etc.).
- 1954.4.2 List seasons in which fresh fruits and vegetables are at their best quality and lowest price.
- 1954.4.3 Match different cooking methods to various fruits and vegetables.
- 1954.4.4 Explain how to properly select and purchase, receive, store and handle fruits and vegetables.
- 1954.4.5 Prepare fruits and vegetables in a variety of ways.

Standard 5: Management Techniques (1954.S.5)

Students will understand personnel management techniques.

Management Techniques Objectives

Students will:

- 1954.5.1 Define front of the house and back of the house duties and responsibilities.
- 1954.5.2 Discuss effective methods of recruiting, motivating and retaining employees.
- 1954.5.3 State the importance of legal interviewing skills, new employee orientation programs and employee performance evaluations.
- 1954.5.4 Identify common foodservice personnel problems and describe effective techniques for managing them.
- 1954.5.5 Describe the process involved in staff scheduling.
- 1954.5.6 Explain why the American Disabilities Act and sexual harassment issues can affect a foodservice operation.

ProStart II A

WVEIS Code 1955

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Standard 1: History of Foodservice (1955.S.1)

Students will discuss the history of foodservice.

History of Foodservice Objectives

Students will:

- 1955.1.1 Define the key terms of foodservice and their origins.
- 1955.1.2 List famous chefs from history and note their accomplishments.
- 1955.1.3 Explain the pasteurization process.
- 1955.1.4 Describe the key terms used for different cuisines of the world.
- 1955.1.5 Identify global cultures and traditions related to food.
- 1955.1.6 Demonstrate preparation methods used in cuisines of the world.
- 1955.1.7 Discuss the growth of foodservice and different types of foodservice operations in the United States.
- 1955.1.8 List historical entrepreneurs who have influenced foodservice in the United States.
- 1955.1.9 Identify present and future trends that influence the foodservice industry.
- 1955.1.10 Explain the differences between aquaculture, organic farming and hydroponics farming.

Standard 2: Potatoes, Grains and Pasta (1955.S.2)

Students will prepare potatoes, grains and pasta.

Potatoes, Grains and Pasta Objectives

Students will:

- 1955.2.1 Explain how to properly select, receive and store potatoes, grains and pasta.
- 1955.2.2 Identify types of grains, meals, flours and other starches and their uses.
- 1955.2.3 Identify types of dried pasta and noodles and their uses.
- 1955.2.4 Identify types of potatoes and their uses.
- 1955.2.5 Match different cooking methods to potatoes, grains and pasta.
- 1955.2.6 Prepare potatoes, grains and pasta using a variety of cooking techniques.
- 1955.2.7 Identify and describe different types of legumes.
- 1955.2.8 Prepare a variety of recipes using different cooking techniques for legumes.

Standard 3: Accounting Practices (1955.S.3)

Students will learn how to use standard accounting practices.

Accounting Practices Objectives

Students will:

- 1955.3.1 Define and explain key accounting terms and principles used in foodservice operations.
- 1955.3.2 Demonstrate basic accounting principles and apply them to common foodservice operations.
- 1955.3.3 Practice double-entry accounting (recording transactions in balanced T accounts).
- 1955.3.4 Read and interpret income statements and balance sheets.

- 1955.3.5 Calculate cost of sales using opening and closing inventory figures.
- 1955.3.6 Use the balance sheet equation to determine assets, liabilities and owners equity.

Standard 4: Quality Service (1955.S.4)

Students will explain and demonstrate the techniques necessary for quality service.

Quality Service Objectives

Students will:

- 1955.4.1 Describe and demonstrate the similarities and differences between American, French, English, Russian and quick service.
- 1955.4.2 Demonstrate tableside preparation techniques.
- 1955.4.3 Describe traditional service staff and list the duties and responsibilities of each staff position.
- 1955.4.4 Identify various server tools and dining utensils and explain specific uses for each.
- 1955.4.5 Explain and demonstrate the correct way to stock a service station.
- 1955.4.6 List factors considered when ordering and using cups, glassware and china.
- 1955.4.7 Demonstrate the correct way to set and clear the table.
- 1955.4.8 Show how servers should properly identify, describe and recommend menu items to guests.
- 1955.4.9 Present a guest check, receive payment and say goodbye to a guest properly.
- 1955.4.10 Describe methods used to effectively resolve customer complaints.

Standard 5: Desserts and Baked Goods (1955.S.5)

Students will prepare desserts and baked goods.

Desserts and Baked Goods Objectives

Students will:

- 1955.5.1 Identify the functions of basic ingredients used in desserts and breads.
- 1955.5.2 Describe common desserts and methods used to prepare them.
- 1955.5.3 Prepare various desserts and baked goods and store them properly.
- 1955.5.4 Bake different types of breads and quick breads.
- 1955.5.5 Describe different types of cookies and demonstrate various preparation methods.
- 1955.5.6 Identify and describe types and roles of strengtheners, shortenings, sweeteners, flavoring, leaveners and thickeners.
- 1955.5.7 Describe how chocolate is made, tempered and stored.
- 1955.5.8 Define the key terms associated with chocolate.
- 1955.5.9 Explain how crème anglaise, pastry creams and Bavarian creams are prepared.
- 1955.5.10 List the steps used to prepare poached fruits and tortes.

Standard 6: Purchasing and Inventory Control (1955.S.6)

Students will practice appropriate purchasing and inventory control procedures.

Purchasing and Inventory Control Objectives

Students will:

- 1955.6.1 Define the key terms associated with purchasing decisions in the foodservice industry.
- 1955.6.2 List the three main layers in a channel of distribution.
- 1955.6.3 Describe the factors involved in selecting appropriate suppliers.
- 1955.6.4 Explain the differences between formal and informal buying and the formal bidding process.
- 1955.6.5 Define franchise, independent, chain and commissary types of foodservice operations.
- 1955.6.6 Prepare a purchase order and develop a purchase specification list for items based on inventory information.
- 1955.6.7 Determine when and how often to order inventory items using both perpetual and physical inventory methods.
- 1955.6.8 Describe proper receiving and storage procedures and necessary documentation requirements.

1955.6.9 Explain procedures used to issue items and track inventory.

ProStart II B

WVEIS Code 1956

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Standard 1: Soups, Stocks and Sauces (1956.S.1)

Students will prepare soups, stocks and sauces.

Soups, Stocks and Sauces Objectives

- 1956.1.1 List the common ingredients of and describe the proper procedure for making a quality stock.
- 1956.1.2 Prepare a stock.
- 1956.1.3 Identify and prepare the two basic kinds of soup.
- 1956.1.4 List and define specialty or national soups.
- 1956.1.5 Explain the preparation methods and the basic ingredients for broth, consommé, puree, clear and cream soups.
- 1956.1.6 Define and prepare the grant or "mother" sauces and the sauces derived from them.
- 1956.1.7 List and define terms associated with the miscellaneous sauces.
- 1956.1.8 Match each miscellaneous sauce with its primary ingredients.
- 1956.1.9 Discuss factors to be considered when selecting a sauce to serve with a meal.

Standard 2: Menu (1956.S.2)

Students will plan an effective menu.

Menu Objectives

Students will:

- 1956.2.1 Explain two reasons why a menu is essential to the overall success of an operation.
- 1956.2.2 List and describe types of menus and the operations in which they are most commonly used.
- 1956.2.3 Discuss the factors to considered in menu development.
- 1956.2.4 Prepare a menu analysis worksheet.
- 1956.2.5 Design a creative menu that uses a correct menu format.
- 1956.2.6 Critique the physical layout of menus from existing foodservice operations.

Standard 3: Marketing Techniques (1956.S.3)

Students will describe how marketing techniques are used in food service.

Marketing Techniques Objectives

Students will:

- 1956.3.1 Describe the basic marketing concepts and terms.
- 1956.3.2 Describe the elements and create one marketing plan.
- 1956.3.3 Describe elements of successful community and public relations.
- 1956.3.4 Write an effective press release.
- 1956.3.5 Explain the various advertising media and list advantages and disadvantages of each.
- 1956.3.6 Plan a successful marketing and promotional campaign using commonly used professional tools.

Standard 4: Meats, Poultry and Seafood (1956.S.4)

Students will prepare meats, poultry and seafood.

Meats, Poultry and Seafood Objectives

Students will:

- 1956.4.1 Explain the federal grading systems for meat, poultry, fish and shellfish.
- 1956.4.2 Describe the various forms of meat, poultry, fish and shellfish.
- 1956.4.3 Discuss proper procedures for receiving, storing and handling meat, poultry, fish and shellfish.
- 1956.4.4 Prepare meat, poultry, pork, fish and shellfish using a variety of cooking methods.
- 1956.4.5 Identify prime cuts for beef, veal, lamb and pork.
- 1956.4.6 Define key terms relating to meat, poultry, pork, veal, lamb and seafood.
- 1956.4.7 Match various cooking methods with different forms of meat, poultry, pork, veal, lamb and seafood.

Standard 5: Communication (1956.S.5)

Students will learn the techniques on how to communicate well with customers.

Communication Objectives

Students will:

- 1956.5.1 Define excellent customer service.
- 1956.5.2 Define the rule of 10.
- 1956.5.3 List the signs of a dissatisfied guest.
- 1956.5.4 Discuss ways to respond and resolve customer complaints.
- 1956.5.5 List and demonstrate the skills of effective written communication.
- 1956.5.6 Define the ABC's of business writing.
- 1956.5.7 Demonstrate proper and courteous telephone skills.
- 1956.5.8 Discuss guidelines for a manager to follow when communicating in customer crisis situations.
- 1956.5.9 Explain how to effectively communicate with the media.
- 1956.5.10 List and discuss good listening skills.
- 1956.5.11 Demonstrate effective speaking skills.
- 1956.5.12 Define non-verbal communication skills.
- 1956.5.13 List and give examples of innovative ways to attract and keep customers.
- 1956.5.14 Demonstrate suggestive selling techniques.

Standard 6: Lodging Operations (1956.S.6)

Students will explain the characteristics, activities, opportunities and types of lodging operations.

Lodging Operations Objectives

Students will:

- 1956.6.1 Define the term "lodging property" and discuss each of the characteristics types of lodging operations.
- 1956.6.2 List and discuss the five key elements that differentiate one lodging establishment from another.
- 1956.6.3 Identify the two national organizations that rate commercial lodging.
- 1956.6.4 Identify ten services offered by some, but not all, lodging properties.
- 1956.6.5 Discuss career opportunities in the lodging industry and the qualifications commonly sought by lodging employers.
- 1956.6.6 Outline the responsibilities of the front desk, housekeeping, front office and engineering departments.
- 1956.6.7 Describe the different types of rates and what makes them different.
- 1956.6.8 Explain how foodservice plays a role in lodging operations.
- 1956.6.9 Create an organizational chart listing all positions and departments of a large lodging

property.

Standard 7: Tourism Industry (1956.S.7)

Students will describe the characteristics, components and opportunities of the tourism industry.

Tourism Industry Objectives

Students will:

- 1956.7.1 Describe the role of travel and tourism in the hospitality industry.
- 1956.7.2 Recognize career opportunities offered in travel and tourism.
- 1956.7.3 Distinguish the segments that make up the travel industry.
- 1956.7.4 Describe the kinds of customer skills required of people who work in the travel industry.

Standard 8: Internship (1956.S.8)

Students will complete a 400 hour, off-campus, paid internship in a foodservice establishment.

Internship Objectives

Students will:

- 1956.8.1 Develop personal qualities and skills necessary for success in the foodservice industry as described in the ProStart workplace competency checklist.
- 1956.8.2 Develop long-term work qualities and skills necessary for success in the foodservice industry as described in the ProStart workplace competency checklist.
- 1956.8.3 Develop short-term observable skills necessary for success in the foodservice industry as described in the ProStart workplace competency checklist.

Hospitality Industry and Service

WVEIS Code 1957

The course will concentrate on how the hospitality industry's growth effects the trends in Foodservice. Job opportunities in various foodservice and hospitality settings will be investigated through the Internet. Entrepreneurship opportunities, education, and training programs for preparation to work in the hospitality industry will be explored. Students will receive practical skills and experience in the front-of-the-house service in the foodservice industry.

Standard 1: Hospitality Basics (1957.S.1)

Students will study and review hospitality basics.

Hospitality Basics Objectives

Students will:

- 1957.1.1 Describe different food production and service opportunities.
- 1957.1.2 Describe career opportunities related to food production and service.

Standard 2: Trends in the Foodservice Industry (1957.S.2)

Students will study and evaluate the trends in the foodservice industry.

Trends in the Foodservice Industry Objectives

Students will:

- 1957.2.1 Describe how foodservice trends affect foodservice operations.
- 1957.2.2 Identify employment opportunities in various commercial and non-commercial foodservice operations.

Standard 3: Education and Training Opportunities (1957.S.3)

Students will identify education and training opportunities in foodservice.

Education and Training Opportunities Objectives

Students will:

- 1957.3.1 Describe educational and training programs that can prepare you for a foodservice career.
- 1957.3.2 List ways to prepare for a foodservice career.

Standard 4: Entrepreneurship Opportunities (1957.S.4)

Students will review and study entrepreneurship opportunities.

Entrepreneurship Objectives

Students will:

- 1957.4.1 Identify small business opportunities in foodservice.
- 1957.4.2 Explain the governmental requirements for starting and running a foodservice business.
- 1957.4.3 Describe the function of a business plan.

Standard 5: Service Basics (1957.S.5)

Students will demonstrate service basics.

Service Basics Objectives

Students will:

- 1957.5.1 Identify the role and duties of each member of the service staff.
- 1957.5.2 Demonstrate service skills that provide exceptional customer service.
- 1957.5.3 Give an example of how an employee can use time and motion effectively.

Standard 6: Serving Techniques (1957.S.6)

Students will learn techniques in serving customers.

Serving Techniques Objectives

Students will:

- 1957.6.1 Describe the role and duties of the server.
- 1957.6.2 Use suggestive selling techniques to increase sales.
- 1957.6.3 Serve food and beverages properly.
- 1957.6.4 Calculate customer checks.

Standard 7: Serving Beverages (1957.S.7)

Students will learn proper techniques for serving beverages.

Serving Beverages Objectives

Students will:

- 1957.7.1 Operate and maintain hot and cold beverage equipment.
- 1957.7.2 Explain how to prepare cold beverage equipment for service.

Standard 8: Dining Characteristics (1957.S.8)

Students will learn the different characteristics of dining today.

Dining Characteristics Objectives

Students will:

- 1957.8.1 Describe the five different types of dining environments.
- 1957.8.2 Explain the characteristics of various types of meal service.
- 1957.8.3 Describe and demonstrate proper dining etiquette.
- 1957.8.4 Demonstrate the different styles of meal service.

Standard 9: Dining Room Environment (1957.S.9)

Students will identify and develop the proper dining room environment.

Dining Room Environment Objectives

Students will:

- 1957.9.1 Restock side station items.
- 1957.9.2 Set glassware, tableware, and flatware appropriately.
- 1957.9.3 Fold napkins into various decorative shapes.
- 1957.9.4 Demonstrate the use of appropriate table settings and centerpiece.

Foodservice Management Practices

WVEIS Code 1958

This class will further prepare students in the ProStart program to understand the responsibilities of a manager in the foodservice industry. The HACCP system of sanitation, workplace safety, employment laws, standards, and regulations will be considered from the manager's perspective. Ordering of foods, production sheets, scheduling, menu planning, costing out dishes, etc. will be practiced. Students will address food-handling procedures, monitoring techniques and record keeping procedures.

Standard 1: Concepts in Foodservice Management (1958.S.1)

Students will define the concepts of foodservice management.

Concepts in Foodservice Management Objectives

Students will:

- 1958.1.1 List the qualities of an effective manager.
- 1958.1.2 Define leadership.
- 1958.1.3 Create an effective managers time management profile.
- 1958.1.4 Explain the role of communication in a foodservice operation.
- 1958.1.5 Illustrate the management structure in a food production and service operation.
- 1958.1.6 Demonstrate the use of different types of foodservice computerized point-of-sale software programs.
- 1958.1.7 Compute, food, beverage and labor cost percentages.
- 1958.1.8 Create a profit and loss statements.
- 1958.1.9 Explain the role of forecasting and breakeven analysis used in foodservice operations.
- 1958.1.10 Discuss the process used in determining purchasing decisions.
- 1958.1.11 List the criteria used for inspecting food at delivery.
- 1958.1.12 Demonstrate effective inventory control procedures using an inventory control tracking system.
- 1958.1.13 Explain the importance of portion control and list ways to minimize waste in an operation.

Standard 2: Responsibilities of a Manager (1958.S.2)

Students will explain a manager's role in supervising employees.

Responsibilities of a Manager Objectives

Students will:

- 1958.2.1 List and explain the challenges that managers face daily.
- 1958.2.2 Describe the process used in employee selection including job description, job applications and interviewing skills.
- 1958.2.3 Participate in a mock interview role play.
- 1958.2.4 Define the terms positive reinforcement and mentorship.
- 1958.2.5 Explain the standards of conduct manager's use in supervising employees.
- 1958.2.6 Create an employee work schedule.
- 1958.2.7 Identify the criteria used when evaluating employees.

Standard 3: Managing a Foodservice Facility (1958.S.3)

Students will possess a through knowledge of effectively managing a foodservice facility.

Managing a Foodservice Facility Objectives

Students will:

- 1958.3.1 Describe how workplace design impacts employees' performance and success in a foodservice operation.
- 1958.3.2 Explain the two elements of an effective work area.
- 1958.3.3 List the six loss prevention factors.

- 1958.3.4 Identify management's responsibility for implementing loss prevention factors.
- 1958.3.5 Explain the importance of effective equipment handling, maintenance and repairs.
- 1958.3.6 Conduct a commercial kitchen inspection.
- 1958.3.7 Explain the considerations of a foodservice operations when purchasing business and facility insurance.

Standard 4: Menu Planning (1958.S.4)

Students will possess a thorough knowledge of menu planning, organization, design and pricing.

Menu Planning Objectives

Students will:

- 1958.4.1 List basic menu planning principles.
- 1958.4.2 Summarize the factors that influence a menu.
- 1958.4.3 Describe the menu types and their advantages and disadvantages.
- 1958.4.4 Outline the Truth-In-More Guidelines.
- 1958.4.5 Develop a list of effective menu item descriptions.
- 1958.4.6 Identify the element that influences menu style and design.
- 1958.4.7 Contrast basic menu formats.
- 1958.4.8 Describe the basic menu categories and how they are organized.
- 1958.4.9 Identify and discuss the influences that affect menu pricing.
- 1958.4.10 Use the factor method and markup-on-cost method of pricing.
- 1958.4.11 Contrast the competitors' pricing method with the psychological pricing method.
- 1958.4.12 Create a menu for a foodservice operation incorporating; menu influences, menu type, menu style and design, menu format, types of meals to be served, menu categories, and menu pricing considerations.

Standard 5: Foodservice Marketing Principles (1958.S.5)

Students will understand foodservice marketing principles.

Foodservice Marketing Principles Objectives

Students will:

- 1958.5.1 Explain the purpose of marketing a foodservice operation.
- 1958.5.2 Describe the three types of business ownerships and list advantages and disadvantages.
- 1958.5.3 Analyze location, customer base, competition and trends used to develop a marketing strategy.
- 1958.5.4 Describe how positioning, atmosphere and customer needs influence marketing.
- 1958.5.5 Develop a position statement for a restaurant.
- 1958.5.6 Contrast advertising and publicity.
- 1958.5.7 Design an ad for a restaurant.
- 1958.5.8 Identify advantages and disadvantages of direct marketing.
- 1958.5.9 Develop a customer comment card.

Standard 6: Foodservice Standards and Regulations (1958.S.6)

Students will discuss foodservice standards and regulations.

Foodservice Standards and Regulations Objectives

Students will:

- 1958.6.1 Outline the standards of quality used to evaluate food.
- 1958.6.2 Identify the various government agencies that regulate the foodservice industry and explain their roles.
- 1958.6.3 Describe food grading and food inspection and why they are used.
- 1958.6.4 Identify industry standards for handling food safely.

Standard 7: Employment Laws (1958.S.7)

Students will possess a thorough knowledge of employment laws.

Employment Laws Objectives

Students will:

- 1958.7.1 Identify and describe the laws related to worker's rights and their safety in a foodservice operation.
- 1958.7.2 Define discrimination, sexual harassment, The Americans with Disability Act and how they affect all public and private employers.
- 1958.7.3 Create a chart listing the employment laws and their provisions.
- 1958.7.4 Discuss the three laws that all foodservice workers should be aware of and the rights that each law protects.
- 1958.7.5 Use the Internet and research a court case about worker's compensation.

Standard 8: Safety (1958.S.8)

Students will explain why safety is everyone's responsibility.

Safety Objectives

Students will:

- 1958.8.1 Identify work place safety guidelines and equipment.
- 1958.8.2 Outline the eight ways to prevent fires.
- 1958.8.3 Create a chart identifying class of fire, type of flammable materials and the type of extinguisher.
- 1958.8.4 Demonstrate using a fire extinguisher.
- 1958.8.5 Demonstrate fire emergency procedures to be used in the event of fire.
- 1958.8.6 Compile a list of emergency phone numbers.
- 1958.8.7 Describe first aid measures for burns and wounds.
- 1958.8.8 List eight ways to prevent falls.
- 1958.8.9 Define Heimlich Maneuver and Cardiopulmonary Resuscitation (CPR).
- 1958.8.10 Demonstrate the Heimlich Maneuver and CPR.
- 1958.8.11 Perform a safety audit in a commercial kitchen.

Standard 9: Sanitation (1958.S.9)

Students will describe the various sanitation challenges and issues.

Sanitation Objectives

Students will:

- 1958.9.1 Compare sources of cross contamination and direct contamination.
- 1958.9.2 Identify biological, chemical, and physical hazards and define each.
- 1958.9.3 Create a list of foodborne illness, their symptoms and the foods involved.
- 1958.9.4 Outline the necessary procedures to be followed when responding to a foodborne illness outbreak.
- 1958.9.5 Describe the function of a sound pest management program.
- 1958.9.6 Create a safety manual for a foodservice operation.

Standard 10: Safe Food-Handlers (1958.S.10)

Students will describe the requirement of safe food-handlers.

Safe Food-Handlers Objectives

Students will:

- 1958.10.1 Demonstrate appropriate grooming practices for the workplace.
- 1958.10.2 Explain when and why gloves are used in the workplace.

1958.10.3 Demonstrate proper hand washing procedures.

Standard 11: HACCP (1958.S.11)

Students will explain the purpose of a HACCP system.

HACCP Objectives

Students will:

- 1958.11.1 Define HACCP.
- 1958.11.2 List and explain the seven steps necessary in setting up a HACCP system.
- 1958.11.3 Identify food safety hazards.
- 1958.11.4 Describe the purpose of a critical control point.
- 1958.11.5 Create a HACCP analysis chart, illustrating the flow of food with potential hazards, control points and corrective actions.
- 1958.11.6 List and explain ways to control hazards in a foodservice operation.
- 1958.11.7 Chart the safe internal cooking temperatures and times for poultry, meats, fish and eggs.
- 1958.11.8 Explain the role of thermometers in keeping food safe.
- 1958.11.9 Demonstrate how to calibrate a thermometer.

Standard 12: Flow of Food (1958.S.12)

Students will learn to identify and safely evaluate the flow of food in a foodservice establishment.

Flow of Food Objectives

Students will:

- 1958.12.1 Explain why it is important to inspect all food products for damage and spoilage when they are received.
- 1958.12.2 Identify the potential problem areas when receiving food.
- 1958.12.3 Outline the twelve general preparation and cooking guidelines.
- 1958.12.4 Describe correct procedures for holding foods, serving foods, cooling foods and reheating foods.
- 1958.12.5 Demonstrate the proper procedure for setting up a three bowl sink for manual dishwashing.
- 1958.12.6 List types of sanitizers and their advantages and disadvantages.
- 1958.12.7 List the general guidelines to be followed when operating a commercial dishwasher.
- 1958.12.8 Demonstrate the proper way to clean and maintain a commercial dishwasher.
- 1958.12.9 Create a safety poster illustrating where potential problems can occur in receiving, storing, preparing, cooking, holding and serving food.

Culinary Nutrition and the Menu

WVEIS Code 1959

Nutrition basics and the guidelines used for foodservice meal planning will be covered in this class. Dietary guidelines and special dietary needs will be used in modifying menu choices. Students will apply healthy cooking techniques to prepared foods.

Standard 1: Nutrition Basics (1959.S.1)

Students will describe nutrition basics and guidelines for meal planning.

Nutrition Basics Objectives

Students will:

- 1959.1.1 Define the six categories of nutrients.
- 1959.1.2 Create vitamin and mineral charts identifying functions in the body and foodservice.
- 1959.1.3 Explain the function of trace minerals.
- 1959.1.4 Define additives and the foods in which they are used.
- 1959.1.5 List three methods a foodservice operation uses to prepare healthful meals.
- 1959.1.6 Explain the purpose of the Dietary Guidelines for Americans, nutrition labels and the Food Guide Pyramid.
- 1959.1.7 Describe how age, activity level, lifestyle and health influence dietary needs.
- 1959.1.8 Create a menu using healthy food choices.
- 1959.1.9 Demonstrate how nutrients in food are affected by time and water.
- 1959.1.10 Prepare, cook and store food to retain nutrients.
- 1959.1.11 List ways to reduce the amount of fat, cholesterol and sodium in recipes.
- 1959.1.12 Describe the role of flavorings and seasonings in healthy cooking.
- 1959.1.13 Create a chart describing different cooking oils and their uses.
- 1959.1.14 Evaluate a restaurant menu for nutritional value, variety and appeal.

Standard 2: Nutritional Concepts (1959.S.2)

Students will define the nutritional concepts used in menu planning.

Nutritional Concepts Objectives

Students will:

- 1959.2.1 Compare traditional menu selections with nutritional menu selections.
- 1959.2.2 Perform a nutritional analysis on items from traditional and nutritional menu selections.
- 1959.2.3 Explain the importance of a nutritionally balanced menu.
- 1959.2.4 List nutritional meal planning food choices.
- 1959.2.5 Demonstrate how color affects plate appeal of nutritional food products.
- 1959.2.6 Discuss why low-fat diet choices should be offered on a menu.
- 1959.2.7 Discuss why diabetic diet choices should be included in the menu planning process.
- 1959.2.8 Discuss the role of nutritional menu item descriptions.
- 1959.2.9 Identify the most common foods and additives known to cause allergic reactions.
- 1959.2.10 Explain considerations used when planning and preparing a vegetarian menu.
- 1959.2.11 Plan and prepare a nutritionally balanced meal.
- 1959.2.12 Create a nutritionally balanced menu.

Fundamentals of Power Equipment I

WVEIS Code 1962

This course will provide basic power equipment fundamentals related to the areas of Career Opportunities, Basic Safety Principles and Basic Engine System Theory. Various types of engine systems and the principles of their operational function will be introduced.

Standard 1: Career Opportunities (1962.S.1)

Students will identify, explore, and evaluate career opportunities related to power equipment systems.

Career Opportunities Objectives

- 1962.1.1 Research power equipment related careers.
- 1962.1.2 Describe the training needed to be successful in mechanical trades.
- 1962.1.3 Develop job employment skills.

Standard 2: Safety (1962.S.2)

Students will demonstrate knowledge of safety rules and equipment as it relates to power equipment systems.

Safety Objectives

- 1962.2.1 Identify and demonstrate the use of personal protective equipment.
- 1962.2.2 Explain the importance of shop cleanliness and organization.
- 1962.2.3 Identify and explain the selection of fire extinguishers for each class of fire.
- 1962.2.4 Identify safety color coding of tools and equipment.
- 1962.2.5 Explain and demonstrate the safe use of tools, machines and equipment in the power equipment systems laboratory.
- 1962.2.6 Describe industrial laws and regulations to protect workers on the job.

Standard 3: Principles of Operation (1962.S.3)

Students will explain the principles of operation systems related to various engine types.

Principles of Operation Objectives

Students will:

- 1962.3.1 Explain the requirements for the operation of a heat engine.
- 1962.3.2 Explain the basic properties of fuels.
- 1962.3.3 List the components of an elementary engine.
- 1962.3.4 Describe variation of internal and external combustion engines.
- 1962.3.5 Classify different types of engines.

Standard 4: Basic Engine Systems (1962.S.4)

Students will be introduced to basic engine systems.

Basic Engine Systems Objectives

Students will:

- 1962.4.1 Describe air filtration systems.
- 1962.4.2 Describe fuel properties and combustion effects.
- 1962.4.3 Describe the kinds of fuel delivery systems.
- 1962.4.4 Differentiate carburetor types.
- 1962.4.5 Distinguish between gasoline fuel injection and diesel injection systems.
- 1962.4.6 Explain how different air/fuel ratios are delivered to the engine.
- 1962.4.7 Explain two stroke-cycle induction systems.
- 1962.4.8 Explain internal engine component functions.
- 1962.4.9 Calculate engine design and performance parameters.

1962.4.10 Explain the function of a compression release in two and four-stroke cycle engine.

Fundamentals of Power Equipment II

WVEIS Code 1964

This course builds upon Fundamentals of Power Equipment I. Additional areas are introduced to complete the makeup of power equipment systems. Areas in this course include theory and principles related to governors, lubrication systems, cooling systems, related electrical theory, and exhaust systems.

Standard 1: Governor (1964.S.1)

Students will identify and explain the functions of governing carburetors.

Governor Objectives

Students will:

- 1964.1.1 Identify and explain the function of a governor.
- 1964.1.2 Explain the concept of governor droop and sensitivity.
- 1964.1.3 Explain the function of self governing carburetors in two stroke-cycle engines.

Standard 2: Lubrication (1964.S.2)

Students will identify and compare the different lubrication systems utilized with various power systems.

Lubrication Objectives

- 1964.2.1 Explain the concept of friction and the function of lubricants.
- 1964.2.2 Explain lubricant functions and classification systems.
- 1964.2.3 Distinguish between premix, injection, splash and pressure lubrication systems.
- 1964.2.4 Calculate fuel premix ratios.
- 1964.2.5 Identify lubrication system components.
- 1964.2.6 Identify lubrication system problems.

Standard 3: Cooling (1964.S.3)

Students will explain the functions of cooling systems.

Cooling Objectives

- 1964.3.1 Explain the three methods of heat transfer in an engine.
- 1964.3.2 Explain the effects of thermal expansion on engine materials.
- 1964.3.3 Explain how cooling systems are used to control heat within the engine.
- 1964.3.4 Explain the advantages and disadvantages of each of the cooling system types.
- 1964.3.5 Identify the effects of cooling system failures.
- 1964.3.6 Calculate antifreeze/coolant mix ratios.

Standard 4: Electrical (1964.S.4)

Students will identify and explain electrical theory and how it relates to power equipment systems.

Electrical Objectives

- 1964.4.1 Explain electron theory.
- 1964.4.2 Explain electrical measuring units.
- 1964.4.3 Explain Ohm's Law.
- 1964.4.4 Explain how magnetism is used in components to provide electricity for an engine systems.
- 1964.4.5 Identify electric and electronic symbols used on wiring diagrams and schematics.
- 1964.4.6 Distinguish between different types of ignition systems.
- 1964.4.7 Explain how charging current is regulated for battery charging.
- 1964.4.8 Trace circuits on wiring diagrams.

Standard 5: Exhaust (1964.S.5)

Students will explain the use for exhaust systems.

Exhaust Objectives

Students will:

- 1964.5.1 Explain how mufflers reduce exhaust noise.
- 1964.5.2 Explain how the exhaust pulse can be used to increase engine performance.
- 1964.5.3 Explain government noise regulation standards for power equipment.
- 1964.5.4 Explain government exhaust emission standards for power equipment.

Power Equipment Service I

WVEIS Code 1966

This course will focus upon the skills necessary in performing various tasks related to service and maintenance of basic engine and drive systems. Basic shop skills will be acquired to support tasks necessary when working with basic engine and drive systems.

Standard 1: Basic Shop Skills (1966.S.1)

Students will be introduced to basic shop skills related to power equipment service.

Basic Shop Skills Objectives

Students will:

- 1966.1.1 Demonstrate safe work habits.
- 1966.1.2 Select, use and properly dispose of shop chemicals.
- 1966.1.3 Perform linear, area and volume measurements.
- 1966.1.4 Convert English and Metric system units.
- 1966.1.5 Use precision measuring and gauging instruments.
- 1966.1.6 Demonstrate the use of electrical component test equipment.
- 1966.1.7 Utilize equipment to test engine operating parameters.
- 1966.1.8 Demonstrate the use of fasteners and locking devices.
- 1966.1.9 Perform oxyacetylene and electric arc welding and cutting.

Standard 2: Engine and Drive Service (1966.S.2)

Students will perform various tasks related to engine and drive service systems.

Engine and Drive Service Objectives

Students will:

- 1966.2.1 Service the fuel tank, lines, filters, shut-off valve and fuel pump systems.
- 1966.2.2 Perform pre-cleaner and air cleaner service.
- 1966.2.3 Perform carburetor and injector service and adjustment.
- 1966.2.4 Adjust governors to comply with equipment requirements or safety standards.
- 1966.2.5 Service and test a lead-acid battery.
- 1966.2.6 Test circuit control devices.
- 1966.2.7 Test and service ignition system components.
- 1966.2.8 Test and service charging system components and output.
- 1966.2.9 Test and service starting system components.
- 1966.2.10 Diagnose problems associated with two and four stroke-cycle compression systems.
- 1966.2.11 Inspect internal engine components for repair/replacement.
- 1966.2.12 Recondition internal engine components.
- 1966.2.13 Service crankcase breather.
- 1966.2.14 Service cooling system components.
- 1966.2.15 Mix antifreeze/coolant.
- 1966.2.16 Clean and maintain exhaust ports, mufflers and spark arrestors.
- 1966.2.17 Change engine oil and filter.
- 1966.2.18 Prepare two stroke-cycle engine fuel premix.
- 1966.2.19 Bleed and adjust oil injection pump for two stroke-cycle engines.
- 1966.2.20 Check engine oil pressure.
- 1966.2.21 Check low oil shut off systems.

Power Equipment Service II

WVEIS Code 1968

This course will focus upon additional areas of skills necessary in servicing and maintaining power equipment systems. Areas of concentration include troubleshooting engine components, inspection and testing of generators, repairing chainsaws and servicing string trimmers.

Standard 1: Engine and Service Drives (1968.S.1)

Students will perform various tasks related to servicing of engine and drive systems.

Engine and Drive Objectives

- 1968.1.1 Troubleshoot and service different types of clutch devices.
- 1968.1.2 Measure, replace and adjust V-belts and V-belt drive components.
- 1968.1.3 Measure, replace and adjust chains and chain drive components.
- 1968.1.4 Service U-joints and drive shaft components.
- 1968.1.5 Disassemble, inspect and rebuild gear type transmission.
- 1968.1.6 Disassemble, inspect and rebuild a hydrostatic drive system.
- 1968.1.7 Disassemble, inspect and reassemble a differential assembly.
- 1968.1.8 Service mechanical band, shoe and disc brakes.
- 1968.1.9 Service steering assemblies.
- 1968.1.10 Service a front axle assembly.
- 1968.1.11 Disassemble and reassemble a four stroke-cycle engine.
- 1968.1.12 Disassemble and reassemble a two stroke-cycle engine.
- 1968.1.13 Prepare engine/equipment for storage.

Standard 2: Generators (1968.S.2)

Students will service various generator functions.

Generators Objectives

- 1968.2.1 Set generators rpm to provide correct cycle and voltage output.
- 1968.2.2 Test generator rotor and stator for shorts and opens.
- 1968.2.3 Test automatic idler circuit and adjust electromagnet for idling speed.
- 1968.2.4 Inspect and service brushes and slip rings.
- 1968.2.5 Check circuit breaker(s).

Standard 3: Chainsaws (1968.S.3)

Students will service and repair parts of a chainsaw.

Chainsaw Objectives

Students will:

- 1968.3.1 Identify the parts of a saw chain.
- 1968.3.2 Identify the types of cutters.
- 1968.3.3 Determine chain pitch and gauge.
- 1968.3.4 Remove and replace a chain link.
- 1968.3.5 Sharpen chain cutters and set depth gages.
- 1968.3.6 Service a bar assembly.
- 1968.3.7 Adjust chain tension.
- 1968.3.8 Service a clutch and sprocket assembly.
- 1968.3.9 Service a bar oil system.

Power Equipment Systems Applications

WVEIS Code 1970

This course will concentrate on the expansion of areas within power equipment systems. Knowledge and skills will be addressed toward meeting the competencies focusing upon record-keeping practices, various braking systems, transmission and drives, suspension systems, and wheel assemblies.

Standard 1: Required Franchise Records (1970.S.1)

Students will demonstrate the use of required franchise record-keeping practices.

Required Franchise Records Objectives

Students will:

- 1970.1.1 Complete pre-delivery, repair order, parts order and warranty claims forms.
- 1970.1.2 Perform pre-delivery service.

Standard 2: Brakes (1970.S.2)

Students will demonstrate how to service brakes and repair various brake systems.

Brakes Objectives

- 1970.2.1 Service single and double leading shoe drum brakes.
- 1970.2.2 Service disc brake caliper systems.
- 1970.2.3 Service a master cylinder.
- 1970.2.4 Bleed hydraulic brake systems.
- 1970.2.5 Describe components of linked brake systems.
- 1970.2.6 Describe ABS systems and components.

Standard 3: Transmission and Drives (1970.S.3)

Students will identify and perform various types of service to transmission and drives.

Transmission and Drives Objectives

Students will:

- 1970.3.1 Service a centrifugal clutches.
- 1970.3.2 Service multi-plate clutches.
- 1970.3.3 Disassemble, inspect and reassemble manual gear transmissions.
- 1970.3.4 Inspect shift drum, ratchet assembly and forks for wear and bending.
- 1970.3.5 Identify components of a hydraulic automatic transmission.
- 1970.3.6 Disassemble, inspect and reassemble a centrifugal clutch with a variable ratio belt drive.
- 1970.3.7 Clean, lubricate and adjust a chain drive.
- 1970.3.8 Calculate final drive ratio.

Standard 4: Suspension and Wheels (1970.S.4)

Students will perform tasks that involve repairing and maintaining suspension systems and wheel assemblies.

Suspension and Wheels Objectives

Students will:

- 1970.4.1 Adjust wheel tracking and alignment.
- 1970.4.2 Service shaft drive systems.
- 1970.4.3 Lace and true a spoke type of rim.
- 1970.4.4 Check a wheel for run-out.
- 1970.4.5 Change tube and tubeless tires.
- 1970.4.6 Static balance a wheel.

- 1970.4.7 Service rear suspension members.
- 1970.4.8 Service steering head assembly.
- 1970.4.9 Rebuild telescoping fork assembly.
- 1970.4.10 Inspect frame assembly for alignment and defects.

Power Equipment Systems Advanced Applications WVEIS Code 1972

This course will focus on advanced applications of servicing and repairing various Power Equipment Systems. Areas of concentration will include Fuel Systems, Outboard Motor Repair, Snowmobiles, Troubleshooting of complete power systems and rebuilding of complete power systems of various types.

Standard 1: Fuel Systems (1972.S.1)

Students will demonstrate how to service complete fuel systems.

Fuel Systems Objectives

Students will:

- 1972.1.1 Service and adjust twist grip throttle assemblies.
- 1972.1.2 Disassemble and reassemble slide, vacuum controlled and butterfly controlled carburetors.
- 1972.1.3 Adjust and synchronize multiple carburetor systems.
- 1972.1.4 Change carburetor jetting to compensate for altitude and atmospheric conditions.
- 1972.1.5 Test throttle body and port fuel injection system components.
- 1972.1.6 Use the ECM self diagnostics and scan tools to access fault codes.

Standard 2: Outboard Repair (1972.S.2)

Students will repair outboard motor systems.

Outboard Repair Objectives

Students will:

- 1972.2.1 Service components of a remote control assembly.
- 1972.2.2 Explain the relationship of propeller pitch to planning speed and thrust.
- 1972.2.3 Explain the advantages of two and three blade propellers.
- 1972.2.4 Explain the concept of propeller slippage.
- 1972.2.5 Explain the cavitations/ventilation of the propeller.
- 1972.2.6 Service an outboard cooling system.
- 1972.2.7 Service an outboard exhaust system.
- 1972.2.8 Service a gearcase.
- 1972.2.9 Perform routine service to the engine and rigging.
- 1972.2.10 Prepare an outboard for storage.
- 1972.5.11 Troubleshoot outboard power assemblies.
- 1972.5.12 Rebuild outboard power systems.

Standard 3: Personal Watercraft (1972.S.3)

Students will service personal watercraft.

Outboard Repair Objectives

Students will:

- 1972.3.1 Service the steering nozzle pivot and cables.
- 1972.3.2 Service jet pump.
- 1972.3.3 Adjust throttle cable linkage.
- 1972.3.4 Check engine shut-off lanyard.
- 1972.3.5 Check engine cooling lines and bilge system.
- 1972.3.6 Prepare a PWC for storage.
- 1972.5.7 Troubleshoot Personal Watercraft power assemblies.
- 1972.5.8 Rebuild PWC power systems.

Standard 4: Snowmobiles (1972.S.4)

Students will demonstrate how to repair power systems related to snowmobiles.

Snowmobile Objectives

Students will:

- 1972.4.1 Maintain chain drive assembly.
- 1972.4.2 Service bogie wheel and slide rail track suspension systems.
- 1972.4.3 Inspect track for damage or repair.
- 1972.4.4 Replace skis and align steering.

Standard 5: Motorcycles (1972.S.5)

Students will demonstrate how to repair power system related to motorcycle.

Motorcycles Objectives

Students will:

- 1972.5.1 Disassemble a motorcycle engine.
- 1972.5.2 Reassemble a motorcycle engine.
- 1972.5.3 Troubleshoot motorcycle power assemblies.

Standard 6: All Terrain Vehicles (ATV) (1972.S.6)

Students will demonstrate how to repair power systems related to ATV's.

All Terrain Vehicles (ATV) Objectives

Students will:

- 1972.6.1 Disassemble an ATV engine.
- 1972.6.2 Reassemble an ATV engine.
- 1972.6.3 Troubleshoot ATV power assemblies.
- 1972.6.4 Rebuild ATV power systems.

Baking and Pastry Applications

WVEIS Code 1979

Baking formulas and equipment functions and use will be taught in this class along with sanitation and safety in the foodservice industry. After understanding bakeshop ingredients and procedure, the students will have hands-on lab experience in baking the following: Yeast Breads, Biscuits, Cookies, Pies, Quick Breads, Muffins, Cakes and Specialty Desserts.

Standard 1: Bakeshop Formulas, Ingredients and Equipment (1979.S.1)

Students will possess a thorough knowledge of bakeshop formulas, equipment and bakeshop ingredients.

Bakeshop Formulas, Ingredients and Equipment Objectives

- 1979.1.1 Define and discuss bakeshop formulas.
- 1979.1.2 Demonstrate accurate volume and weight measure using balance scale weights and measurement methods.
- 1979.1.3 Demonstrate the yield of a doubled recipe.
- 1979.1.4 Define a baker's percentage and explain its function.
- 1979.1.5 Convert a cake recipe using a baker's percentage formula.
- 1979.1.6 Identify and demonstrate the function of bakeshop equipment and tools.
- 1979.1.7 Demonstrate the use and cleaning of pastry bags and decorator tips.
- 1979.1.8 Prepare and bake a double crust fruit pie using a various baking and pastry tools.
- 1979.1.9 Prepare, bake, and decorate a two-tier cake.
- 1979.1.10 Demonstrate how a sheeter is used in baking.
- 1979.1.11 Explain the importance of using exact ingredients and the role of key ingredients in baking.
- 1979.1.12 Create a chart identifying the different types of flours and their baking characteristics.
- 1979.1.13 Identify various liquids used in baking and their affects on the outcome of the baked product.
- 1979.1.14 Demonstrate how different fats are used in the baking process.
- 1979.1.15 Identify the functions of sugars and sweeteners and their contributions to baking.
- 1979.1.16 Discuss the functions of eggs and egg products in baking.
- 1979.1.17 Describe the different leavening agents and their functions when used in the baking process.
- 1979.1.18 Create a chart describing spices and their uses in the bakeshop.
- 1979.1.19 Describe the assortment of flavorings, chocolates, cocoas and their uses in baking.
- 1979.1.20 Identify the nuts and additives used in baking and identify the baking products that they are primarily used in.

Standard 2: Batter (1979.S.2)

Students will identify proper procedures for preparing batters and doughs.

Batter Objectives

- 1979.2.1 Describe the ingredients' ratio used in batters.
- 1979.2.2 Describe the ingredients' ratio used in doughs.
- 1979.2.3 Prepare bread doughs and batters using the nine different ways to mix them.
- 1979.2.4 Describe the impact of carryover baking.

Standard 3: Yeast Dough (1979.S.3)

Students will identify proper procedures and ingredients for yeast dough production.

Yeast Dough Objectives

Students will:

- 1979.3.1 Describe the characteristics of quality yeast products.
- 1979.3.2 Explain why temperature control is important in preparing yeast doughs.
- 1979.3.3 List the three common types of yeast used in baking.
- 1979.3.4 Define the term starter and list the ingredients in a starter mixture.
- 1979.3.5 Describe the function that each ingredient plays in yeast dough production.

- 1979.3.6 List the three most common types of yeast doughs and prepare one of each type.
- 1979.3.7 Define the rolled-in fat yeast dough process.
- 1979.3.8 List the twelve stages that apply to all yeast dough products.
- 1979.3.9 Describe the three basic methods of mixing yeast dough ingredients: the straight dough method, the modified straight dough method and the sponge method.
- 1979.3.10 Define the "240 factor".
- 1979.3.11 Describe the process of fermentation in yeast dough.
- 1979.3.12 Identify common causes of failure in yeast bread production.
- 1979.3.13 List the four actions of dough punching.
- 1979.3.14 Demonstrate dividing, rounding, proofing, shaping and panning dough.
- 1979.3.15 Explain how washing, slashing and docking affect the baking quality and eye appeal of finished products.
- 1979.3.16 Discuss the five factors that affect oven temperature and baking times of bread and roll doughs.
- 1979.3.17 List the four stages of the baking process that contribute to the final product.
- 1979.3.18 Define glazing, staling prevention and proper packaging and storage of yeast products.
- 1979.3.19 Evaluate a finished yeast product using shape, volume, crumb, crust, color, tenderness and taste as the criteria.

Standard 4: Quick Bread Basics (1979.S.4)

Students will learn the basics of quick bread preparation.

Quick Bread Objectives

Students will:

- 1979.4.1 Identify the characteristics of quick breads.
- 1979.4.2 Explain the functions of quick bread ingredients.
- 1979.4.3 Compare quick bread doughs and batters.
- 1979.4.4 List the nutrients contained in quick breads.
- 1979.4.5 Explain the difference in the actions of baking soda versus baking powder in the baking process.
- 1979.4.6 Prepare a loaf bread.
- 1018.4.8 Describe how quick breads are leavened.

Standard 5: Biscuit Making Techniques (1979.S.5)

Students will learn the basics of biscuit preparation and baking.

Biscuit Making Techniques Objectives

Students will:

- 1018.5.5 Demonstrate the biscuit method of baking.
- 1018.5.6 Identify quality standards and characteristics of biscuits.
- 1018.5.7 Describe how biscuits are cut and formed.
- 1018.5.8 Prepare quality biscuits.

Standard 6: Muffin Making Techniques (1979.S.6)

Students will learn the basics of muffin preparation and baking.

Muffin Making Techniques Objectives

Students will:

- 1018.6.5 Demonstrate the blending and creaming methods of mixing.
- 1018.6.6 Identify quality standards and characteristics of muffins.
- 1018.6.7 Describe how to properly portion muffin batter.
- 1018.6.8 Prepare quality muffins.

Standard 7: Cake and Cookie Preparation (1979.S.7)

Students will gain knowledge and demonstrate ability in the preparation and baking of cookies and cakes.

Cake and Cookie Preparation Objectives

Students will:

- 1018.7.10 Identify characteristics of the five different types of cookies.
- 1018.7.11 Identify the factors that influence the spread of cookies.
- 1018.7.12 Demonstrate the one-stage and creaming methods used in mixing cookies.
- 1018.7.13 Mix, pan and bake two types of cookies.
- 1018.7.14 Cool, serve, and store cookies properly.
- 1018.7.15 Describe the five types of cakes and demonstrate their mixing methods.
- 1018.7.16 Demonstrate how to scale and pan cakes.
- 1018.7.17 Identify the five types of butter creams.
- 1018.7.18 Bake, cool, ice and properly serve two types of cakes.

Standard 8: Pies (1979.S.8)

Students will identify correct pie making techniques.

Pies Objectives

Students will:

- 1018.8.7 Describe pie dough preparation basics.
- 1018.8.8 Prepare a flaky and a mealy pie dough.
- 1018.8.9 Mix, shape, roll and pan a basic pie dough.
- 1018.8.10 Name the three major types of pie fillings.
- 1018.8.11 Prepare a single and double crust pie.
- 1018.8.12 Demonstrate proper pie storage and serving techniques.

Standard 9: Specialty Desserts (1979.S.9)

Students will possess a through knowledge of specialty dessert preparation.

Specialty Desserts Objectives

Students will:

- 1018.9.6 List specialty dessert options and explain their differences.
- 1018.9.7 Contrast custards and puddings.
- 1018.9.8 Describe common ingredients and preparation methods used in Bavarian cream, mousse and chiffons.
- 1018.9.9 Discuss food safety concerns in cream dessert preparation and storage.
- 1018.9.10 Prepare, serve and store two types of specialty desserts properly.

Arc Welding

WVEIS Code 1981

This course will give students the opportunity to advance their skills in SMAW, GMAW, FCAW, GTAW and to have the opportunity to test to a state or national standard.

Standard 1: Perform advanced Shielded Metal Arc Welding (SMAW) processes. (1981.S.1)

Shielded Metal Arc Welding Objectives

Students will:

- 1981.1.1 Perform safety inspections of equipment and accessories.
- 1981.1.2 Make minor external repairs to equipment and accessories.
- 1981.1.3 Set up for shielded metal arc welding operations.
- 1981.1.4 Operate shielded metal arc welding equipment.
- 1981.1.5 Execute corrective actions to repair surface flaws on welds areas and base metals.
- 1981.1.6 Make fillet welds, all positions, on plain carbon steel or stainless steel plate using stainless steel electrodes.
- 1981.1.7 Make groove welds, all positions, on plain carbon steel or stainless steel using stainless steel electrodes.
- 1981.1.8 Make groove welds, all positions, according to AWS D1.1 Code.
- 1981.1.9 Make fillet welds, all positions, on carbon steel pipe.
- 1981.1.10 Prepare test coupons according to AWS D1.1 Code.

Standard 2: Apply advanced Gas Metal Arc Welding (GMAW) procedures. (1981.S.2)

Gas Metal Arc Welding Objectives

Students will:

- 1981.2.1 Perform safety inspections of equipment and accessories.
- 1981.2.2 Make minor external repairs to equipment and accessories.
- 1981.2.3 Set up for gas metal arc welding operations on carbon steel.
- 1981.2.4 Operate gas metal arc welding equipment.

Standard 3: Perform Spray Transfer processes. (1981.S.3)

Spray Transfer Objectives

Students will:

- 1981.3.1 Make fillet welds, all positions, on aluminum plate.
- 1981.3.2 Make groove welds, all positions, on aluminum plate.

Standard 4: Utilize Short Circuiting Transfer process. (1981.S.3)

Short Circuiting Transfer Objectives

Students will:

- 1981.4.1 Make fillet welds, all positions, on carbon steel pipe, using short circuiting transfer.
- 1981.4.2 Make groove welds, all positions, using short circuiting transfer to the AWS D1.1 Code.
- 1981.4.3 Prepare test coupons according to AWS D1.1 Code.

Standard 5: Utilize Flux Cored Arc Welding (FCAW-S, FCAW-G) processes. (1981.S.5)

Flux Cored Arc Welding Objectives

Students will:

- 1981.5.1 Perform safety inspections of equipment and accessories.

- 1981.5.2 Make minor external repairs to equipment and accessories.
- 1981.5.3 Set up for flux cored arc welding operations on carbon steel.
- 1981.5.4 Operate flux cored arc welding equipment.
- 1981.5.5 Make fillet welds, all positions, on carbon steel pipe, using gas-shielded electrodes.
- 1981.5.6 Make groove welds, all positions, according to the AWS D1.1 Code.
- 1981.5.7 Prepare test coupons according to AWS D1.1 Code.

Standard 6: Perform Gas Tungsten Arc Welding (GTAW). (1981.S.6)

Gas Tungsten Arc Welding Objectives

Students will:

- 1981.6.1 Perform safety inspections of equipment and accessories.
- 1981.6.2 Make minor external repairs to equipment and accessories.
- 1981.6.3 Set up for gas tungsten arc welding operations on carbon steel, aluminum, and stainless steel.
- 1981.6.4 Operate gas tungsten arc welding equipment.
- 1981.6.5 Make fillet welds, all positions, on aluminum.
- 1981.6.6 Make groove welds, all positions, on aluminum.
- 1981.6.7 Make fillet welds, all positions, on stainless steel.
- 1981.6.8 Make groove welds, all positions, on stainless steel.

Blueprint Reading and Metallurgy

WVEIS Code 1983

This course will introduce students to the basic fundamentals of blueprint reading as it relates to the welding industry, and to the science and technology of extracting metals from their ores, refining them, and preparing them for use.

Standard 1: Determine processing requirements from drawings. (1983.S.1)

Drawings Objectives

Students will:

- 1983.1.1 Identify the types of lines used on blueprints.
- 1983.1.2 Describe various methods of dimensioning a welding blueprint.
- 1983.1.3 Differentiate between notes and specifications.
- 1983.1.4 Analyze processing requirements from information block.
- 1983.1.5 Explain what tolerances are, and why they are used on blueprints.
- 1983.1.6 Read a drawing and write a bill of materials.

Standard 2: Draw shop and field sketches. (1983.S.2)

Shop and Field Sketches Objective

Students will:

- 1983.2.1 Draw shop or field sketches of sample dimensions, notes, and specifications.

Standard 3: Identify and interpret basic welding symbols. (1983.S.3)

Welding Symbols Objectives

Students will:

- 1983.3.1 Differentiate common types of welds and joints.
- 1983.3.2 Identify weld symbols and draw samples of each.
- 1983.3.3 Match parts of a fillet weld and a groove weld with their geometric definitions.
- 1983.3.4 Draw fillet and groove weld symbols with different requirements.
- 1983.3.5 Interpret common abbreviations for blueprints and welding processes.

Standard 4: Understand the composition of metals, their atomic structures and properties, and how they behave when exposed to different conditions of use. (1983.S.4)

Metals Objectives

Students will:

- 1983.4.1 Define metallurgy and describe historical developments.
- 1983.4.2 Define terms related to metallurgy.
- 1983.4.3 Distinguish between mechanical and physical properties.
- 1983.4.4 Compare chemical characteristics of ferrous and non-ferrous metals.
- 1983.4.5 Describe in writing, various heat treating processes.
- 1983.4.6 Explain welding characteristics of low, medium, and high carbon steel, alloy steels, cast iron, stainless and high chromium steels, Austenitic manganese steels, tool and die steels, and exotic steels.

Fundamentals of Welding Technology

WVEIS Code 1985

This course will introduce students to the basic fundamentals of welding/cutting. Students will become familiar with general safety, welding terms and joints, and oxyfuel welding techniques.

Standard 1: Identify, explore, and evaluate career opportunities related to welding. (1985.S.1)

Career Opportunities Objectives

Students will:

- 1985.1.1 Describe a variety of careers related to welding, and the training necessary to be successful in those careers.
- 1985.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of welding.
- 1985.1.3 Identify sources of information about careers in welding.

Standard 2: Identify and practice safety during tool and equipment use and practice safe conduct in welding shop. (1985.S.2)

Welding Shop Objectives

Students will:

- 1985.2.1 Recognize and follow general welding shop safety guidelines.
- 1985.2.2 Discuss the precautions needed to avoid fires in the welding area.
- 1985.2.3 Describe how a closed container can be welded.
- 1985.2.4 Describe the precautions to be taken when welding in confined areas.
- 1985.2.5 Explain the purpose of tinted lenses used during welding and cutting.
- 1985.2.6 Describe the protective clothing, eye, face and head gear worn by welder.
- 1985.2.7 Recognize what fumes, gases, dust and smoke must be removed.
- 1985.2.8 List and describe electrical safety when using ARC welding equipment.
- 1985.2.9 Illustrate safe handling and storage of compressed gas cylinders and explain safety involved with use of acetylene gas.

Standard 3: Express knowledge of the basic terms and processes associated with the welding industry. (1985.S.3)

Welding Industry Objectives

Students will:

- 1985.3.1 Tell what the American Welding Association does for welders.
- 1985.3.2 Define welding and explain coalescence and filler material.
- 1985.3.3 State the difference between fusion welding, brazing, soldering and solid-state welding.
- 1985.3.4 List the major welding fusion welding processes and state the differences between them.
- 1985.3.5 Discuss the purpose and functions of SMAW electrodes.

Standard 4: Setup oxyfuel welding and cutting equipment and demonstrate the safe use of the equipment. (1985.S.4)

Oxyfuel Welding and Cutting Equipment Objectives

Students will:

- 1985.4.1 Obtain oxyfuel cylinders, chain into work station, assemble and set up oxy fuel stationary and mobile cutting equipment.
- 1985.4.2 Perform soap and water leak test and set line pressure according to the tip size and metal thickness.

- 1985.4.3 Lay out pattern on metal using steel rule, square and soapstone.
- 1985.4.4 Make 90 degree straight cuts, bevel cuts and hole cuts.
- 1985.4.5 List five (5) reasons for poor cuts and four (4) causes for back fire.
- 1985.4.6 Clean and maintain cutting equipment and demonstrate proper shut down and storage of the equipment.
- 1985.4.7 Choose the proper tip size for braze welding and oxyacetylene welding, light and adjust flame for proper welding of mild steel.

Gas Metal Arc Welding

WVEIS Code 1987

This course will introduce students to basic skills in gas metal arc welding. Students should have good eye, hand coordination and a safety awareness. All students who take this class must have successfully completed Fundamentals of Welding and have passed all safety tests.

Standard 1: Setup and use Gas Metal Arc welding equipment. (1987.S.1)

Gas Metal Arc Objectives

Students will:

- 1987.1.1 Perform safety inspections of equipment and accessories.
- 1987.1.2 Make minor external repairs to equipment and accessories.
- 1987.1.3 Set up for gas metal arc welding operations on plain carbon steel.
- 1987.1.4 Operate gas metal arc welding equipment.

Standard 2: Perform GMAW using short circuit transfer. (1987.S.2)

Short Circuit Transfer Objectives

Students will:

- 1987.2.1 Make fillet welds, all positions, on plain carbon steel.
- 1987.2.2 Make groove welds, all positions, on plain carbon steel.

Standard 3: Perform GMAW using Spray transfer. (1987.S.3)

Spray Transfer Objectives

Students will:

- 1987.3.1 Make 1F-2F welds on plain carbon steel.
- 1987.3.2 Make 1G welds on plain carbon steel.

Standard 4: Set up and use Flux Cored Arc welding equipment (FCAW, FCAW-G). (1987.S.4)

Flux Cored Arc Objectives

Students will:

- 1987.4.1 Perform safety inspections of equipment and accessories.
- 1987.4.2 Make minor external repairs to equipment and accessories.
- 1987.4.3 Set up for flux cored arc welding operations on plain carbon steel.
- 1987.4.4 Operate flux cored arc welding equipment.
- 1987.4.5 Make fillet welds, all positions, on plain carbon steel.
- 1987.4.6 Make groove welds, all positions, on plain carbon steel.

Gas Tungsten Arc Welding

WVEIS Code 1989

This course will introduce students to basic skills in gas tungsten arc welding. Students should have good eye, hand coordination and a safety awareness. All students who take this class must have successfully completed Fundamentals of Welding and have passed all safety tests.

Standard 1: Setup and use Gas Tungsten Arc welding equipment. (1989.S.1)

Gas Tungsten Arc Welding Objectives

The student will

- 1989.1.1 Perform safety inspections of equipment and accessories.**
- 1989.1.2 Make minor external repairs to equipment and accessories.**
- 1989.1.3 Set up for gas tungsten arc welding operations on plain carbon steel, aluminum, and stainless steel.**
- 1989.1.4 Operate gas tungsten arc welding equipment.**
- 1989.1.5 Make fillet welds, all positions, on plain carbon steel.**
- 1989.1.6 Make groove welds all positions, on plain carbon steel.**
- 1989.1.7 Make 1F-2F welds on aluminum.**
- 1989.1.8 Make 1G welds on aluminum.**
- 1989.1.9 Make 1F-3F welds on stainless steel.**
- 1989.1.10 Make 1G-2G welds on stainless steel.**

Shielded Metal Arc Welding

WVEIS Code 1993

This course will introduce students to basic skills in shielded metal arc welding. Students should have good eye, hand coordination and a safety awareness. All students who take this class must have successfully completed Fundamentals of Welding and have passed all safety tests.

Standard 1: Setup and use Shielded Metal Arc welding equipment in all positions. (1993.S.1)

Shielded Metal Arc Objectives

Students will:

- 1993.1.1 Perform safety inspections of equipment and accessories.
- 1993.1.2 Make minor external repairs to equipment and accessories.
- 1993.1.3 Setup for SMAW operations on plain carbon steel.
- 1993.1.4 Operate SMAW equipment.
- 1993.1.5 Make fillet welds in all positions on plain carbon steel.
- 1993.1.6 Make groove welds in all positions on carbon steel.
- 1993.1.7 Perform horizontal and vertical limited thickness qualification test on carbon steel plate.
- 1993.1.8 Interpret test results.
- 1993.1.9 Discuss electrode handling procedures.
- 1993.1.10 Finish metal surfaces with hand and power tools.

Thermal Cutting and Welding

WVEIS Code 1995

This course will introduce students to the basic fundamentals to effectively use the oxyfuel welding and cutting processes to produce welded and brazed joints, and to cut straight lines and shapes.

Standard 1: Set up oxyfuel cutting equipment and demonstrate its safe use. (1995.S.1)

Oxyfuel Cutting Equipment Objectives

Students will:

- 1995.1.1 Describe historical developments in thermal cutting and welding.
- 1995.1.2 Recognize safety related to thermal cutting.

Standard 2: Perform manual oxyfuel gas cutting and demonstrate its safe use. (1995.S.2)

Manual Oxyfuel Gas Cutting Objectives

Students will:

- 1995.2.1 Perform safety inspections of equipment and accessories.
- 1995.2.2 Make minor repairs to equipment and accessories.
- 1995.2.3 Set up for manual oxyfuel gas cutting operations.
- 1995.2.4 Perform oxyfuel gas cutting, beveling, and piercing operations.
- 1995.2.5 Perform arc cutting, beveling, and piercing operations.
- 1995.2.6 Perform shape cutting and bevel cutting operations on plain carbon steel.
- 1995.2.7 Remove weld metal from plain carbon steel by using weld washing technique.

Standard 3: Perform oxyfuel welding and brazing and demonstrate its safe use. (1995.S.3)

Oxyfuel Welding and Brazing Objectives

Students will:

- 1995.3.1 Perform safety inspections of equipment and accessories.
- 1995.3.2 Set and weld mild steel using oxyfuel welding equipment.
- 1995.3.3 Set and braze mild steel using oxyfuel welding equipment.

Standard 4: Perform machine oxyfuel gas cutting (OFC) and demonstrate its safe use. (1995.S.4)

Machine Oxyfuel Gas Cutting Objectives

Students will:

- 1995.4.1 Perform safety inspections of equipment and accessories.
- 1995.4.2 Make minor external repairs to equipment and accessories.
- 1995.4.3 Set up for manual air carbon arc gouging and cutting operations on plain carbon steel.
- 1995.4.4 Operate manual air carbon arc cutting equipment.
- 1995.4.5 Perform metal removal operations on plain carbon steel.

Standard 5: Set up and safe use of plasma arc cutting (PAC) equipment. (1995.S.5)

Plasma Arc Cutting Objectives

Students will:

- 1995.5.1 Perform safety inspections on equipment and accessories.
- 1995.5.2 Make minor external repairs to equipment and accessories.
- 1995.5.3 Set up for manual plasma arc cutting operations on plain carbon steel, aluminum, and

stainless steel.

1995.5.4 Operate manual plasma arc cutting equipment.

1995.5.5 Perform shape cutting operations on plain carbon steel, aluminum, and stainless steel.

Exploring Technology (2401-2409 inclusive)

WVEIS Code 2401

Exploring technology is a comprehensive, action based educational program for middle school concerned with the ways that humans use communication, manufacturing, transportation and construction to adapt to their environment. It is necessary for all people to understand technology if they are to function as informed voters, productive workers and wise consumers of technological products. Content and activities involve students' use of tools, materials and processes.

Standard 1: Systems Model (2401.S.1)

Students will understand the concept of a systems model and how it applies to technology.

Systems Model Objectives

Students will:

- 2401.1.1 Define technology and its four major systems: communication, transportation, construction and manufacturing.
- 2401.1.2 Name the parts of a technological system, and describe each of the four systems using this model.

Standard 2: Technical Developments (2401.S.1)

Students will recognize the evolving nature of technology and describe its potential for impacting the future.

Technical Developments Objectives

Students will:

- 2401.2.1 Identify and describe important historical developments in the evolution of technology.
- 2401.2.2 Use past and present technological developments to predict trends and possible future developments.

Standard 3: Academic Applications (2401.S.3)

Students will integrate academic skills with technological knowledge when solving problems.

Academic Applications Objectives

Students will:

- 2401.3.1 Solve math and measurement problems as they relate to specific technological systems.
- 2401.3.2 Apply vocabulary and reading comprehension skills to the study of technology.
- 2401.3.3 Develop and organize a presentation to inform by using: written, graphic, and verbal techniques.
- 2401.3.4 Apply concepts of science to real world technological problems.
- 2401.3.5 Demonstrate the use of critical thinking skills when analyzing technological solutions.
- 2401.3.6 Use computer hardware and software where applicable in the study of technology.

Standard 4: Problem Solving (2401.S.4)

Students will develop and demonstrate technological problem solving skills and processes when developing solutions to problems.

Problem Solving Objectives

Students will:

- 2401.4.1 Generate ideas and design solutions to problems through sketches, drawings and notes.
- 2401.4.2 Plan and select the materials, energy, tools and processes needed and produce a physical

- model or prototype of the solution.
- 2401.4.3 Test the solution.
- 2401.4.4 Analyze test results and evaluate the success of the solution.

Standard 5: Resources (2401.S.5)

Students will solve problems and make decisions involving resources to create and improve technological systems.

Resources Objectives

Students will:

- 2401.5.1 Define the term "resource", and list resources in a given technological system.
- 2401.5.2 Use and reuse a variety of resources in an efficient manner.
- 2401.5.3 Demonstrate proper use and care of tools and equipment.
- 2401.5.4 Identify and practice all given safety rules when using materials and equipment in laboratory and classroom activities.
- 2401.5.5 Use tools, machines and equipment at an appropriate skill level to separate materials; change the shape of materials; join materials; and process information.

Standard 6: Communication Systems (2401.S.6)

Students will explore a variety of resources, processes and outcomes necessary for the development and support of communication systems.

Communication Systems Objectives

Students will:

- 2401.6.1 Demonstrate proper layout and design principles when designing messages.
- 2401.6.2 Identify and properly construct the three principle views of an object using sketching and/or drafting tools and techniques.
- 2401.6.3 Compare and contrast each of the major printing methods used in industry and use at least two methods to make prints which convey a message.
- 2401.6.4 Explain the basic electrical concepts necessary to operate a simple circuit, and simulate one communication device by constructing a working model.
- 2401.6.5 Describe major telecommunication devices, and experiment with at least one device in an activity.

Standard 7: Construction Systems (2401.S.7)

Students will explore a variety of resources, processes and outcomes necessary for the development and support of construction systems.

Construction Systems Objectives

Students will:

- 2401.7.1 Identify a variety of different types of structures, and explain the various uses made of them.
- 2401.7.2 Explain how loads and forces affect a structural system.
- 2401.7.3 Identify basic structural elements and techniques used in light construction, and use at least three in classroom activities.
- 2401.7.4 Identify basic structural elements and techniques used in heavy construction, and use at least one in a classroom activity.
- 2401.7.5 Compare and contrast the characteristics of a variety of construction materials in relation to their intended purpose.
- 2401.7.6 Explain the importance of blueprints, specifications, and scheduling of labor and materials to the management of a construction project.

Standard 8: Manufacturing Systems (2401.S.8)

Students will explore a variety of resources, processes and outcomes necessary for the development and support of manufacturing systems.

Manufacturing Systems Objectives

Students will:

- 2401.8.1 Describe methods used to acquire a variety of raw material resources, including woods, metals, plastics and ceramics.
- 2401.8.2 Explain the importance of standard stock, and the various methods that industry uses to convert raw materials into standard stock.
- 2401.8.3 Compare and contrast the various forming operations (casting/molding, compressing/stretching, and conditioning) and perform at least one operation in each category.
- 2401.8.4 Compare and contrast the various separating operations (shearing, chip removal, other) and perform at least one operation in each category.
- 2401.8.5 Compare and contrast the various combining operations (mechanical fastening, adhesive bonding, cohesive bonding coating, and mixing) and perform at least one operation in each category.
- 2401.8.6 Describe the five organizational departments of a manufacturing company.
- 2401.8.7 Participate in the establishment and production of a product in student-organized company.

Standard 9: Transportation Systems (2401.S.9)

Students will explore a variety of resources, processes and outcomes necessary for the development and support of transportation systems.

Transportation Systems Objectives

Students will:

- 2401.9.1 Identify and describe the four environments in which vehicles operate.
- 2401.9.2 Classify transportation devices according to four operating environments.
- 2401.9.3 Determine the advantages and disadvantages of a variety of modes of transportation according to their purpose.
- 2401.9.4 Define the six technical sub-systems of a transportation device.
- 2401.9.5 Explore a variety of modes of transportation by designing, producing, operating and analyzing the efficiency of at least two models.

Standard 10: Leadership (2401.S.10)

Students will function as a leader, follower, organizer and planner.

Leadership Objectives

Students will:

- 2401.10.1 Demonstrate the value of working independently and cooperatively in activities.
- 2401.10.2 Develop civic pride and responsibility by participating in service activities to benefit others.
- 2401.10.3 Experience leadership development through participation in Technology Student Association activities.

Standard 11: Impacts (2401.S.11)

Students will identify societal problems and environmental impacts that result from the use of technological products and processes.

Impacts Objectives

Students will:

- 2401.11.1 List several social changes brought about by developments in technology.
- 2401.11.2 Describe the positive and negative implications that various technologies have had on the environment.
- 2401.11.3 Explain the impact of renewable and non-renewable resources on the individual, society and the environment.

Standard 12: Careers (2401.S.12)

Students will identify and explore major career opportunities in the engineering and technical field.

Careers Objectives

Students will:

- 2401.12.1 Use available resources to research a variety of careers associated with engineering and technical fields.
- 2401.12.2 Evaluate a variety of engineering and technical careers as they relate to personal interests and aptitudes.

Communication Systems

WVEIS Code 2421

This course will introduce students to a variety of ways that people use tools and resources to communicate. Topics include the processes of communication, the sources of energy used to communicate, and the technological advancements that are rapidly affecting the world. Students will explore various applications in communication technology through hands-on activities.

Standard 1: Background (2421.S.1)

Students will describe the communication system, its development and importance in the world today.

Background Objectives

Students will:

- 2421.1.1 Define communication technology, listing the inputs, processes, outputs and feedback and give examples of each.
- 2421.1.2 Identify and describe important inventions and developments in communication technology.
- 2421.1.3 Examine the advantages and disadvantages of a variety of graphic and electronic communication methods as to their efficiency (economics, speed, effectiveness).

Standard 2: Communication Applications (2421.S.2)

Students will use oral and written communication skills to effectively deliver a variety of messages.

Communication Applications Objectives

Students will:

- 2421.2.1 Use a variety of techniques to access information and use the information to solve design problems in communication.
- 2421.2.2 Write a technical report explaining a specific communication process, which reflects appropriate technical style, and use word processing software to generate the report.
- 2421.2.3 Prepare and deliver a 3-5 minute speech on a given topic in communication.
- 2421.2.4 Apply vocabulary and reading comprehension skills used in communication occupations.
- 2421.2.5 Create a design portfolio to use the remainder of the semester to document your design work.

Standard 3: Mathematical Applications (2421.S.3)

Students will apply accurate measurement practices, solve math problems, and perform algebraic computations as they relate to communication careers.

Mathematical Applications Objectives

Students will:

- 2421.3.1 Perform mathematical computations as they relate to communication activities (page layout, circuitry problems, etc.)
- 2421.3.2 Interpret various charts, graphs and drawings used to display numerical data.

Standard 4: Problem Solving (2421.S.4)

Students will apply the basic steps in the problem solving process to develop solutions to a variety of communication problems.

Problem Solving Objectives

Students will:

- 2421.4.1 Generate ideas and design solutions to solve problems through sketches, drawings and notes.
- 2421.4.2 Plan and select materials, energy, tools and processes needed for producing solutions to a variety of problems, and use them to solve a variety of problems.

- 2421.4.3 Choose and conduct the appropriate tests to gather data on the efficiency of solutions to problems.
- 2421.4.4 Interpret the information gained, and evaluate the success of solutions.

Standard 5: Safety (2421.S.5)

Students will develop appropriate health and safety practices associated with the communication system.

Safety Objectives

Students will:

- 2421.5.1 Explain and demonstrate general safety rules and the proper use of tools, machines, and equipment in the communication laboratory.
- 2421.5.2 Describe safety measures and industrial laws and regulations used by communication industries to protect workers on the job.

Standard 6: Mechanical Drawing (2421.S.6)

Students will effectively use mechanical drawing and CAD to communicate graphically.

Mechanical Drawing Objectives

Students will:

- 2421.6.1 Correctly use a variety of drafting tools to create drawings.
- 2421.6.2 Use an introductory CAD program to produce a simple drawing, demonstrating basic functions of CAD.
- 2421.6.3 Correctly draw the necessary views for given orthographic drawings.
- 2421.6.4 Correctly draw an isometric drawing of a given object and use it in the design of a message.

Standard 7: Layout and Design (2421.S.7)

Students will design and create a variety of graphic messages using proper techniques.

Layout and Design Objectives

Students will:

- 2421.7.1 Describe the elements and principles of design (color, shape, line, texture, proportion, balance, rhythm, and unity) and apply them when designing a poster.
- 2421.7.2 Demonstrate proper techniques for producing a thumbnail, rough layout and comprehensive mechanical layout.
- 2421.7.3 Use desktop publishing software to create a one-page flyer advertising a given item.
- 2421.7.4 Describe common methods of creating a printed image, and compare various reproduction methods.

Standard 8: Graphic Arts (2421.S.8)

Students will define the general steps necessary to produce a printed product (image design, generation and assembly, carrier preparation, transfer, and product finishing).

Graphic Arts Objectives

Students will:

- 2421.8.1 Compare and contrast a variety of techniques used to duplicate messages.
- 2421.8.2 Choose the appropriate method and reproduce a selected project, explaining the reason for your choice of printing method.

Standard 9: Telecommunication (2421.S.9)

Students will examine the processes used in electronic communication and their applications.

Telecommunication Objectives

Students will:

- 2421.9.1 Explain the basic principles of electricity as they relate to the operation of various communication devices.
- 2421.9.2 Explain the principle of electromagnetism as it relates to communication and construct a device that operates on this principle.
- 2421.9.3 Identify the four basic requirements for an electrical circuit and solve a communication problem involving simple circuitry.
- 2421.9.4 Define the processes of encoding, transmitting, receiving, storing, retrieving, and decoding information.
- 2421.9.5 Utilize a commercial electronic communication device (video equipment, laser/fiber optics, computer/modem) to design, send, and receive a message, describing the six processes involved.

Standard 10: Impacts (2421.S.10)

Students will examine the impacts and future implications of communication systems as they relate to society, the economy, and the environment.

Impacts Objectives

Students will:

- 2421.10.1 Discuss several social changes brought about by technological developments in the communication industry.
- 2421.10.2 Explain how our economy is affected by developments in communication systems and give examples.
- 2421.10.3 Describe positive and negative implications that various communication technologies have had on the environment.
- 2421.10.4 Discuss a variety of future developments in communication and their possible effects on society, the economy and the environment.

Construction Systems

WVEIS Code 2424

This course will introduce students to the principles of the construction industry. Topics range from how construction meets the needs of society to basic construction techniques. Students will explore various applications in construction technology through hands on activities.

Standard 1: Background (2424.S.1)

Students will describe the construction system, its development and importance in the world today.

Background Objectives

Students will:

- 2424.1.1 Define construction technology, listing the inputs, processes, outputs and feedback and give examples of each.
- 2424.1.2 Compare and contrast various types of structures and uses made of them.
- 2424.1.3 Identify and describe important inventions and developments in construction technology.

Standard 2: Communications Applications (2424.S.2)

Students will use oral, graphic and written communication skills to effectively deliver a variety of messages.

Communication Applications Objectives

Students will:

- 2424.2.1 Use a variety of techniques to access information and use the information to solve design problems in construction.
- 2424.2.2 write a technical report explaining a specific construction process, which reflects appropriate technical style, and use word processing software to generate the technical report.
- 2424.2.3 Prepare and deliver a 3-5 minute speech on a given topic in construction.
- 2424.2.4 Apply vocabulary and reading comprehension skills used in construction occupations.

Standard 3: Mathematical Applications (2424.S.3)

Students will apply accurate measurement practices, solve math problems, and perform algebraic computations as they relate to construction careers.

Mathematical Applications Objectives

Students will:

- 2424.3.1 Perform mathematical computations as they relate to construction activities (calculating square feet, foundation layouts, triangulation, etc.).
- 2424.3.2 Interpret various charts, graphs and drawings used to display numerical data.

Standard 4: Problem Solving (2424.S.4)

Students will apply the basic steps in the problem solving process to develop solutions to a variety of construction problems.

Problem Solving Objectives

Students will:

- 2424.4.1 Generate ideas and design solutions to solve problems through sketches, drawings and notes.
- 2424.4.2 Plan and select materials, energy, tools and processes needed for producing solutions to a variety of problems, and use them to solve a variety of problems.
- 2424.4.3 Choose and conduct the appropriate tests to gather data on the efficiency of solutions to problems.

2424.4.4 Interpret the information gained, and evaluate the success of solutions.

Standard 5: Safety (2424.S.5)

Students will develop appropriate health and safety practices associated with the construction system.

Safety Objectives

Students will:

- 2424.5.1 Explain and demonstrate general safety rules and the proper use of tools, machines, and equipment in the construction laboratory.
- 2424.5.2 Describe safety measures and industrial laws and regulations used by construction industries to protect workers on the job.

Standard 6: Resources (2424.S.6)

Students will identify, evaluate, and select common tools, materials, energy, and information to design, engineer, and produce structures.

Resources Objectives

Students will:

- 2424.6.1 Describe a variety of construction materials, and conduct tests on common structural materials to determine their physical characteristics.
- 2424.6.2 Perform various forming, separating, and combining processes on construction materials.

Standard 7: Forces and Loads (2424.S.7)

Students will identify and examine the forces and loads acting upon structural elements.

Forces and Loads Objectives

Students will:

- 2424.7.1 Differentiate between the forces that act on structures (tension, compression, shear, and torsion), and determine which forces are present in various structural elements.
- 2424.7.2 Differentiate between static, continuous dynamic, and impact dynamic loads, and give examples of each.
- 2424.7.3 Calculate load stress in a structure and give the answer in load per square inch or load per square foot.

Standard 8: Producing Structures (2424.S.8)

Students will understand the processes used to design, engineer, and produce a variety of types of structures.

Producing Structures Objectives

Students will:

- 2424.8.1 Differentiate between light and heavy construction by identifying structures, structural elements, and building techniques used in each type of construction.
- 2424.8.2 Identify several points which must be considered when evaluating a potential construction site, and identify an acceptable location for a structure, given a properly prepared plot plan.
- 2424.8.3 Design a living space, identifying basic and non-basic activity areas; plan traffic flow pattern and efficient room layout.
- 2424.8.4 Given a cross sectional view of a foundation and framed superstructure, explain the purpose of each, and identify several structural parts.
- 2424.8.5 Explain the basic steps of enclosing a structure.
- 2424.8.6 Describe the importance of insulating a structure and identify the five paths of heating/ cooling

- loss in a home.
- 2424.8.7 Identify internal and external utility systems.
- 2424.8.8 Describe several internal and external finishing processes.
- 2424.8.9 Describe a variety of heavy construction projects (dams, highways, bridges, and pipelines) and their relationship to the transportation industry.
- 2424.8.10 Participate in the various steps, from planning to finished construction, of a model scale structure.

Standard 9: Managing Construction Projects (2424.S.9)

Students will understand the processes related to managing a construction project.

Managing Construction Projects Objectives

Students will:

- 2424.9.1 Define and describe the three activities of management (planning, organizing, and controlling).
- 2424.9.2 Describe how a contractor organizes a construction project, including the concept of subcontracting, controlling construction costs, and scheduling of required inspections.

Standard 10: Impacts (2424.S.10)

Students will understand the impacts and future implications of construction systems as they relate to society, the economy, and the environment.

Impacts Objectives

Students will:

- 2424.10.1 Discuss several social changes brought about by technological developments in the construction industry.
- 2424.10.2 Explain how our economy is affected by developments in construction systems and give examples.
- 2424.10.3 Describe positive and negative implications that various construction technologies have had on the environment.
- 2424.10.4 Discuss a variety of future developments in construction and their possible effects on society, the economy and the environment.

Drafting Specialization - Architectural

WVEIS Code 2427

This course will provide students the opportunity to specialize in architectural drawing and design, including plumbing, electrical and HVAC systems. Students will: choose one of these areas to do in-depth study during this course.

Standard 1: Piping Systems (2427.S.1)

Students will demonstrate the ability to design and draw domestic and commercial piping systems.

Piping Systems Objectives

Students will:

- 2427.1.1 Demonstrate knowledge of domestic and commercial piping system terminology and materials.
- 2427.1.2 Demonstrate the ability to interpret and draw domestic and commercial piping schematic flow diagrams.
- 2427.1.3 Demonstrate the ability to use a CAD system to design and develop drawings for domestic and commercial piping.

Standard 2: Electrical Systems (2427.S.2)

Students will demonstrate the ability to design and draw electrical systems.

Electrical Systems Objectives

Students will:

- 2427.2.1 Demonstrate knowledge of electrical system terminology and materials.
- 2427.2.2 Demonstrate the ability to interpret and draw electrical diagrams.
- 2427.2.3 Demonstrate the ability to use a CAD system to design and develop drawings for electrical systems.

Standard 3: HVAC Systems (2427.S.3)

Students will demonstrate the ability to design and draw HVAC systems.

HVAC Systems Objectives

Students will:

- 2427.3.1 Demonstrate knowledge of HVAC system terminology and materials.
- 2427.3.2 Demonstrate the ability to interpret and draw HVAC diagrams.
- 2427.3.3 Demonstrate the ability to use a CAD system to design and develop drawings for HVAC systems.

Standard 4: Architectural Techniques (2427.S.4)

Students will apply architectural techniques to design and draw building structures.

Architectural Techniques Objectives

Students will:

- 2427.4.1 Demonstrate knowledge of building styles, material selection and price estimates and architectural terms.
- 2427.4.2 Demonstrate the ability and knowledge to determine structural design required for client needs and purposes.
- 2427.4.3 Draw and dimension all necessary drawings for the completion of the structure, including floor plan, elevations and exterior presentation (two point, three point, etc.), etc.
- 2427.4.4 Demonstrate the ability to use a CAD system to design and develop architectural drawings.

Drafting Specialization – Mechanical

WVEIS Code 2430

This course will introduce students to mechanical drafting, including the application of dimensioning techniques, assembly and detail drawings, pictorial views and common threads and fasteners. This course will provide the training to apply these applications using a CAD system.

Standard 1: Dimensioning (2430.S.1)

Students will demonstrate the proper use and knowledge of advanced dimensioning techniques.

Dimensioning Objectives

Students will:

- 2430.1.1 Demonstrate knowledge of advanced dimensioning terminology and basic principals of fit selection.
- 2430.1.2 Apply tolerance dimensions, positional and form tolerance symbols.

Standard 2: Assembly Drawings (2430.S.2)

Students will construct various types of assembly and detail drawings.

Assembly Drawings Objectives

Students will:

- 2430.2.1 Identify types of assembly drawings, detail parts within, and dimension detailed assembly drawings.
- 2430.2.2 Draw title and revision blocks, make and record drawing revisions, specify shop notes, and draft the necessary bill of materials on a drawing.
- 2430.2.3 Draw sectional and detailed working assembly drawings.

Standard 3: Threads and Fasteners (2430.S.3)

Students will identify and draw common threads and fasteners.

Threads and Fasteners Objectives

Students will:

- 2430.3.1 Demonstrate knowledge of common threaded fasteners, thread forms, series and classification of fits.
- 2430.3.2 Specify keys, keyways and taper pins, etc.
- 2430.3.3 Draw threaded fasteners using detailed and schematic representations.

Standard 4: Computer Applications (2430.S.4)

Students will use computer assisted drafting to produce drawings, demonstrating competency in using advanced CAD systems.

Computer Applications Objectives

Students will:

- 2430.4.1 Use advanced drawing and editing features within a CAD system.
- 2430.4.2 Obtain numerical and database information from a CAD system.
- 2430.4.3 Use operating system functions within the CAD program.
- 2430.4.4 Demonstrate the ability to efficiently print/plot specified drawings.
- 2430.4.5 Develop 3-D objects on a CAD system.
- 2430.4.6 Use specialized CAD software to design and develop mechanical drawings and models (Mechanical Desktop).
- 2430.4.7 Develop 3-D objects using CNC.

Drafting Techniques

WVEIS Code 2433

This course will introduce students to techniques used in advanced orthographic projection, including dimensioning, sectioning, auxiliary views, revolutions, pattern development and advanced CAD.

Standard 1: Sectioning (2433.S.1)

Students will apply proper sectioning techniques to fully describe the interior of an object on a drawing.

Sectioning Objectives

Students will:

- 2433.1.1 Describe the purpose of a cutting plane and cutting plane line, and properly draw them.
- 2433.1.2 Draw various ANSI standard section lines used for general sections, steel, concrete, etc.
- 2433.1.3 Describe the differences between a full, half, revolved, aligned, offset, removed and broken out sections, and use sectioning techniques to complete drawings.

Standard 2: Pictorial Views (2433.S.2)

Students will identify and construct pictorial views.

Pictorial Views Objectives

Students will:

- 2433.2.1 Construct oblique and isometric drawings, including exploded and sectional views.
- 2433.2.2 Apply standard, horizontal and reverse axes in isometric drawings.
- 2433.2.3 Draw non-isometric lines, circles arcs, and curved lines.

Standard 3: Auxiliary Views (2433.S.3)

Students will draw primary and secondary auxiliary views and revolutions.

Auxiliary Views Objectives

Students will:

- 2433.3.1 Demonstrate knowledge of primary auxiliary views.
- 2433.3.2 Draw secondary auxiliary views and explain their use.
- 2433.3.3 Demonstrate knowledge of revolutions and their use.

Standard 4: Descriptive Geometry (2433.S.4)

Students will apply descriptive geometry techniques to solve graphical problems.

Descriptive Geometry Objectives

Students will:

- 2433.4.1 Determine the true length of a line, true view of a plane and the true angle between two planes.
- 2433.4.2 Determine the intersection between lines, planes, and surfaces.

Standard 5: Patterns and Developments (2433.S.5)

Students will use proper techniques to draw patterns and developments.

Patterns and Developments Objectives

Students will:

- 2433.4.1 Develop rectangular prisms, cylinders, pyramids and cones.

- 2433.5.2 Demonstrate knowledge of transition pieces.
- 2433.5.3 Apply development techniques to shop patterns.

Standard 6: Dimensioning (2433.S.6)

Students will apply the rules of dimensioning to dimension drawings, using architectural, engineering and metric measurements.

Dimensioning Objectives

Students will:

- 2433.6.1 Layout, measure and construct lines with the architectural, engineering and metric scales.
- 2433.6.2 Describe and apply unidirectional and aligned systems of dimensioning.
- 2433.6.3 Apply standard dimensioning techniques for a hole, countersink, counter bore and knurling.
- 2433.6.4 Properly dimension axonometric drawings.

Standard 7: Computer Applications (2433.S.7)

Students will use computer assisted drafting to produce drawings, demonstrating the ability to customize a CAD system.

Computer Applications Objectives

Students will:

- 2433.7.1 Create and use various prototype drawings using custom developed line types, hatch patterns and text styles.
- 2433.7.2 Modify CAD menu to perform additional and/or new operations.
- 2433.7.3 Demonstrate the ability to modify operating system files to facilitate CAD operations and load and run a lisp routine.

Foundations in Engineering

WVEIS Code 2436

This one credit course will introduce students to the basic principles of materials, mechanisms, structures, electricity, electronic control, fluidics, computer control and graphic communication and how they can be integrated and used to solve a variety of complex technical challenges. Students work in engineering teams to develop work process skills, such as researching, writing, organizing, modeling, calculating, and communicating with others.

Standard 1: Technological Problem Solving (2436.S.1)

Students will understand the basic steps in the technological problem solving process to develop solutions to a variety of problems.

Technological Problem Solving Objectives

Students will:

- 2436.1.1 Identify and describe the four basic steps in the problem solving process.
- 2436.1.2 Explain at least four factors that influence the design process.

Standard 2: Factors Affecting Design (2436.S.2)

Students will consider the various factors that affect design when creating solutions to problems, and gather anthropometric data and apply it to the design of products.

Factors Affecting Design Objectives

Students will:

- 2436.2.1 Apply the concept of ergonomics, or human factors engineering, to the design of solutions to problems.
- 2436.2.2 Specify the functional criteria of a variety of consumer products.
- 2436.2.3 Effectively apply the elements and principles of design to create aesthetic solutions to problems.

Standard 3: Generating Ideas (2436.S.3)

Students will understand how to generate ideas to solve technological problems using a variety of methods.

Generating Ideas Objectives

Students will:

- 2436.3.1 Use a variety of divergent and convergent methods (mind mapping, brainstorming, and consensus) to generate ideas, organize thoughts, and represent relationships between concepts.
- 2436.3.2 Generate ideas and design solutions to solve problems through sketches, drawings and notes.

Standard 4: Conducting Research (2436.S.4)

Students will use a variety of information gathering techniques to conduct research and gather data.

Conducting Research Objectives

Students will:

- 2436.4.1 Discuss the purpose and importance of research in the design process.
- 2436.4.2 Apply vocabulary and reading comprehension skills used in engineering.
- 2436.4.3 Effectively use a variety of information gathering techniques to compile research information for designs from books, periodicals, and the Internet.
- 2436.4.4 Properly document information gained from any resource.

- 2436.4.5 Develop and use a questionnaire or interview guide designed to gain specific information from people, then use software to design a chart or graph to display the data gathered.
- 2436.4.6 Conduct destructive and nondestructive tests on a variety of materials to determine their characteristics, collect data and produce a computer graph to display information about a material's properties.
- 2436.4.7 Determine which specific materials are most appropriate for a given product, and justify your answer.

Standard 5: Documenting Design Work (2436.S.5)

Students will describe the importance of documenting design work and use a variety of methods to record design ideas.

Documenting Design Work Objectives

Students will:

- 2436.5.1 Describe various methods to document design work.
- 2436.5.2 Provide three good reasons for documenting design work.
- 2436.5.3 Create a design portfolio, using a variety of methods to document your design work.
- 2436.5.4 Use desktop publishing software to create a variety of titles, graphics and layout for your portfolio.

Standard 6: Recording Design Ideas (2436.S.6)

Students will communicate their design ideas using a variety of sketching and drafting methods.

Recording Design Ideas Objectives

Students will:

- 2436.6.1 Properly sketch and dimension a variety of drawings using orthographic projection and pictorial drawing techniques.
- 2436.6.2 Create technical sketches that depict various details of a product.
- 2436.6.3 Use computer assisted drafting to communicate graphic solutions to a variety of problems.

Standard 7: Producing Materials (2436.S.7)

Students will integrate a variety of materials and resources to produce models that solve design problems.

Producing Materials Objectives

Students will:

- 2436.7.1 Define and describe the difference between appearance models, working models, prototypes, and computer models.
- 2436.7.2 Plan and select appropriate materials needed for producing solutions to a variety of problems.
- 2436.7.3 Identify a variety of tools, equipment and methods used to produce them.
- 2436.7.4 Describe general safety rules and demonstrate safe use of any tool or piece of equipment that may be used in the engineering/technical laboratory.
- 2436.7.5 Perform various forming, separating, and combining processes when creating models for design solutions.
- 2436.7.6 Describe the internal and external forces that are exerted on a structure, and explain why they need to be considered in the design of an object.
- 2436.7.7 Compare and contrast various structural elements and apply them to the solution of design problems.

Standard 8: Controlling Models (2436.S.8)

Students will understand and integrate a variety of methods used in controlling the movement and

operation of solutions to design problems.

Controlling Models Objectives

Students will:

- 2436.8.1 Demonstrate how various mechanisms, including gear trains, pulleys, cams, cranks, links and levers affect movement.
- 2436.8.2 Describe and apply the concept of mechanical advantage and efficiency.
- 2436.8.3 Explain the relationship between current, voltage, and resistance, and use appropriate meters to measure each.
- 2436.8.4 Describe the operation of and properly use a variety of switches, diodes, variable resistors, and fuses to create circuits to solve design problems.
- 2436.8.5 Correctly draw a diagram of a circuit and build the circuit from the diagram.
- 2436.8.6 Describe the purpose of and use various sensing devices (switches, temperature and light sensors) and actuator devices (buzzers, lamps) and use them in control circuits.
- 2436.8.7 Apply common digital processing blocks used in electronic circuits such as AND and OR gates in the solution of problem.
- 2436.8.8 Explain the concept of valves and cylinders used to control fluids, and use them to control design solutions.
- 2436.8.9 Explain the concept of controlling the speed of cylinders and use a variety of controlling arrangements such as reservoirs, restrictors, and/or valves.
- 2436.8.10 Describe the locus of moving points in mechanisms and explain how cylinders are mounted to provide appropriate angular travel.
- 2436.8.11 Demonstrate the ability to integrate the various technologies and use them to build models of working solutions.

Standard 9: Testing and Analyzing (2436.S.9)

Students will understand the importance of testing and analyzing a design solution and use the information for improvement.

Testing and Analyzing Objectives

Students will:

- 2436.9.1 Choose and conduct the appropriate tests to gather data on the efficiency of solutions to problems.
- 2436.9.2 Interpret the information gained by calculating the efficiency of a given design.
- 2436.9.3 Analyze test results and use them to suggest redesign strategies.

Standard 10: Presenting Information (2436.S.10)

Students will demonstrate a variety of methods to present information.

Presenting Information Objectives

Students will:

- 2436.10.1 Write objective reports reflecting appropriate technical style, and use word processing software to generate the report.
- 2436.10.2 Prepare and deliver a 3-5 minute speech on a given topic.
- 2436.10.3 Design and create an effective physical display by hand and using desktop publishing software to explain the solution to a specific design problem.
- 2436.10.4 Prepare and deliver a 3-5 minute multimedia presentation on a given topic.

Standard 11: Leadership (2436.S.11)

Students will develop personal responsibility and leadership skills through participation in engineering team activities.

Leadership Objectives

- 2436.11.1 Share responsibility of the problem solving process in a group.
- 2436.11.2 Demonstrate the value of working independently and cooperatively in activities.

Standard 12: Careers (2436.S.12)

Students will explore a variety of careers that are involved in the engineering field, and the skills, qualifications and requirements necessary to work in this field.

Career Objectives

Students will:

- 2436.12.1 Define at least five types of engineers, and give examples of how they use the design process in their specific jobs.
- 2436.12.2 Discuss a variety of businesses and industries that use design engineers, and what type of work each does.
- 2436.12.3 Examine the skills and training necessary to be successful in an engineering career.

Fundamentals Of Drafting

WVEIS Code 2439

This course will introduce students to the basic fundamentals of drafting and geometric construction. Students will become familiar with drafting equipment and methodology used in industry. This course will provide basic understanding of drafting techniques necessary to allow students to progress to CAD.

Standard 1: Careers (2439.S.1)

Students will identify, explore, and evaluate career opportunities related to drafting and design.

Careers Objectives

Students will:

- 2439.1.1 Describe a variety of careers related to drafting and design, and the training necessary to be successful in those careers.
- 2439.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of drafting and design.
- 2439.1.3 Identify sources of information about careers in drafting.

Standard 2: Equipment and Materials (2439.S.2)

Students will identify and properly use a variety of basic drafting equipment and materials.

Equipment and Materials Objectives

Students will:

- 2439.2.1 Describe and properly use standard drafting tools and machines such as triangles, protractors, scales, erasing shield, pencils, pens, erasers, compass and dividers.
- 2439.2.2 List the standard size sheets for drawing, and describe the difference between tracing paper, vellum and drafting film.

Standard 3: Mathematical Applications (2439.S.3)

Students will apply mathematical skills related to drafting and design.

Mathematical Applications Objectives

Students will:

- 2439.3.1 Perform mathematical computations as they relate to creating accurate drawings.
- 2439.3.2 Interpret various charts and graphs used to display numerical data.
- 2439.3.3 Layout, measure and construct lines with the architectural scales.

Standard 4: Basic Drafting Techniques (2439.S.4)

Students will demonstrate proper drafting techniques when solving a variety of drafting problems.

Basic Drafting Techniques Objectives

Students will:

- 2439.4.1 Identify and draw the various standard ANSI lines, borders and title blocks used in the drafting/design industry.
- 2439.4.2 Properly draw basic geometric shapes using equipment, and layout basic geometric constructions to demonstrate bisection, perpendicular, parallel, tangent, division, etc.
- 2439.4.3 Demonstrate proper techniques for lettering freehand and with mechanical lettering devices.

Standard 5: Orthographic Projection (2439.S.5)

Students will demonstrate proper techniques to develop multi-view drawings using orthographic projection.

Orthographic Projection Objectives

Students will:

- 2439.5.1 Apply proper isometric sketching techniques to aid in visualization of orthographic drawings.
- 2439.5.2 Arrange and layout the three principle views of an object on a standard ANSI sheet, using proper centering techniques.
- 2439.5.3 Select the proper views necessary to completely describe an object, and complete technical drawings using these views.

Standard 6: Dimensioning (2439.S.6)

Students will apply general rules to dimension drawings, using architectural measurements.

Dimensioning Objective

Students will:

- 2439.6.1 List and draw basic dimensions lines such as extension, dimension and leader lines.

Standard 7: Computer Applications (2439.S.7)

Students will use computer assisted drafting to produce drawings, demonstrating basic functions of CAD.

Computer Applications Objectives

Students will:

- 2439.7.1 Properly use software to create drawings using basic commands.
- 2439.7.2 Dimension the drawing, using appropriate commands.
- 2439.7.3 Properly save and plot a drawing.

Manufacturing Systems

WVEIS Code 2442

This course will introduce students to the basic elements of the manufacturing industry. Students will explore a variety of materials and processing techniques common to manufacturing, and apply this knowledge to the development and operation of a student manufacturing enterprise.

Standard 1: Background (2442.S.1)

Students will describe the manufacturing system, its development and importance in the world today.

Objectives

Students will:

- 2442.1.1 Define manufacturing technology, listing the inputs, processes, outputs and feedback and give examples of each.
- 2442.1.2 Describe the stages of manufacturing, from securing raw materials to distributing the finished product.
- 2442.1.3 Identify and describe important inventions and developments in manufacturing technology.

Standard 2: Communication Applications (2442.S.2)

Students will use oral, graphic and written communication skills to effectively deliver a variety of messages.

Communication Applications Objectives

Students will:

- 2442.2.1 Use a variety of techniques to access information and use it to solve design problems in manufacturing.
- 2442.2.2 Write a technical report explaining a specific manufacturing process, which reflects appropriate technical style, and use word processing software to generate the technical report.
- 2442.2.3 Prepare and deliver a 3-5 minute speech on a given topic in manufacturing.
- 2442.2.4 Apply vocabulary and reading comprehension skills used in manufacturing occupations.
- 2442.2.5 Create a design portfolio to use the remainder of the semester to document your design work.

Standard 3: Mathematical Applications (2442.S.3)

Students will apply accurate measurement practices, solve math problems, and perform algebraic computations as they relate to manufacturing careers.

Mathematical Applications Objectives

Students will:

- 2442.3.1 Perform mathematical computations as they relate to manufacturing activities (calculating break even points, board feet, bills of materials, etc.).
- 2442.3.2 Interpret various charts, graphs and drawings used to display numerical data.

Standard 4: Management (2442.S.4)

Students will discuss and apply standard forms of management, which are used in the manufacturing industry.

Management Objectives

Students will:

- 2442.4.1 Develop a management team to run a simulated company, using it to improve quality, productivity, and economic competitiveness in manufacturing.

Standard 5: Research and Development (2442.S.5)

Students will understand processes used to conduct research and develop products by a manufacturing enterprise.

Research and Development Objectives

Students will:

- 2442.5.1 Practice a variety of ways to generate ideas to solve problems.
- 2442.5.2 Conduct a market survey to determine the potential sales of a product you have designed.
- 2442.5.3 Design and construct a working model of a potential product.
- 2442.5.4 Use testing strategies to evaluate the model, and analyze the information gained through testing to evaluate the success of the product.

Standard 6: Finances and Accounting (2442.S.6)

Students will apply processes used to manage finances in a manufacturing industry.

Finances and Accounting Objectives

Students will:

- 2442.6.1 Estimate fixed and variable manufacturing costs.
- 2442.6.2 Prepare a master budget and maintain a general ledger.

Standard 7: Safety (2442.S.7)

Students will develop appropriate health and safety practices associated with the manufacturing system.

Safety Objectives

Students will:

- 2442.7.1 Explain and demonstrate general safety rules and the proper use of tools, machines, and equipment in the manufacturing laboratory.
- 2442.7.2 Describe safety measures and industrial laws and regulations used by manufacturing industries to protect workers on the job.

Standard 8: Industrial Relations (2442.S.8)

Students will identify processes used to promote good industrial relations.

Industrial Relations Objectives

Students will:

- 2442.8.1 Describe the three (3) major types of industrial relations (employee, labor, public) and list several functions of each.

Standard 9: Resources (2442.S.9)

Students will identify and select common materials, tools, and equipment and use them to design and produce products.

Resources Objectives

Students will:

- 2442.9.1 Identify common materials (metallic, ceramic, natural and synthetic polymers) and describe their characteristic properties.
- 2442.9.2 Identify various types of tools and equipment and the methods used to safely control them.
- 2442.9.3 Form and/or separate standard stock into one piece products or components of multiple piece products.

2442.9.4 Combine components into subassemblies and final products.

Standard 10: Producing Products

Students will demonstrate and understand processes used to plan for and produce high quality products.

Producing Products Objectives

Students will:

- 2442.10.1 Describe the five major activities that occur in the manufacturing area (planning, control, plant engineering, quality control, and material processing).
- 2442.10.2 Describe the similarities and differences of custom, intermittent, and continuous flow techniques.
- 2442.10.3 Develop an operation flow chart.
- 2442.10.4 Develop a flow process chart (operations, delays, etc.) for a product.
- 2442.10.5 Construct jigs/fixtures required for a manufacturing run.
- 2442.10.6 Apply intermittent (job lot) production techniques to prepare standard stock for a continuous flow production, using appropriate jigs and fixtures.
- 2442.10.7 Apply continuous flow production techniques to produce a finished product using appropriate jigs and fixtures.
- 2442.10.8 Compare and contrast the prevention (SPC) and the detection (inspection) system of quality control.

Standard 11: Impacts (2442.S.11)

Students will examine the impacts and future implications of manufacturing systems as they relate to society, the economy, and the environment.

Impacts Objectives

Students will:

- 2442.11.1 Discuss several social changes brought about by technological developments in the manufacturing industry.
- 2442.11.2 Explain how our economy is affected by developments in manufacturing systems and give examples.
- 2442.11.3 Describe positive and negative implications that various manufacturing technologies have had on the environment.
- 2442.11.4 Discuss a variety of future developments in manufacturing and their possible effects on society, the economy and the environment.

Mechanical Services Systems

WVEIS Code 2445

This course will introduce students to the basic principles of mechanisms, electricity/electronics and fluidics involved in the support, maintenance, design and installation of all types of mechanical and electrical devices. Students will explore a variety of techniques used in the mechanical services industry, and apply this knowledge in a variety of hands-on activities.

Standard 1: Background (2445.S.1)

Students will describe the mechanical services system, its development and importance in the world today.

Background Objectives

Students will:

- 2445.1.1 Define mechanical services technology.
- 2445.1.2 Identify and describe important inventions and developments in the evolution of the mechanical services industry.

Standard 2: Communication Applications (2445.S.1)

Students will use oral, graphic and written communication skills to effectively deliver a variety of messages.

Communication Applications Objectives

Students will:

- 2445.2.1 Use a variety of techniques to access information and use it to solve design problems in mechanical services.
- 2445.2.2 Write a technical report explaining a specific mechanical services process, which reflects appropriate technical style, and use word processing software to generate the report.
- 2445.2.3 Prepare and deliver a 3-5 minute extemporaneous speech on a given topic in mechanical services.
- 2445.2.4 Apply vocabulary and reading comprehension skills used in mechanical services.
- 2445.2.5 Create a design portfolio to use the remainder of the semester to document your design work.

Standard 3: Mathematical Applications (2445.S.3)

Students will apply accurate measurement practices, solve math problems, and perform algebraic computations as they relate to mechanical services careers.

Mathematical Applications Objectives

Students will:

- 2445.3.1 Continue to use English and Metric measurements accurately.
- 2445.3.2 Perform mathematical computations as they relate to mechanical services activities (calculating break-even points, board feet, bills of materials, etc.)
- 2445.3.3 Interpret various charts, graphs and drawings used to display numerical data.

Standard 4: Problem Solving (2445.S.4)

Students will apply design, creativity and critical thinking skills to develop solutions to a variety of problems to meet specific criteria.

Problem Solving Objectives

Students will:

- 2445.4.1 Generate ideas and design solutions to problems through sketches, drawings, and notes.

- 2445.4.2 Plan and select the materials, energy, tools, and processes needed for producing solutions to mechanical services problems, and produce solutions to a variety of mechanical services problems.
- 2445.4.3 Test the solution to a variety of mechanical services problems, and analyze test results to value the success of solutions.

Standard 5: Safety (2445.S.5)

Students will develop appropriate health and safety practices associated with the mechanical services industry.

Safety Objectives

Students will:

- 2445.5.1 Explain and demonstrate general safety rules and the proper use of tools, machines, and equipment in the mechanical services field and in the training laboratory.
- 2445.5.2 Describe safety measures and industrial laws and regulations used by companies to protect mechanical services workers on the job.

Standard 6: Electricity and Electronics (2445.S.6)

Students will explain the basic principles of electricity and electronics as they relate to the various operations involved in mechanical services.

Electricity and Electronics Objectives

Students will:

- 2445.6.1 Identify the basic requirements for an electrical circuit and solve problems involving simple circuitry.
- 2445.6.2 Explain the principle of electro-magnetism and describe devices that operate on this principle.
- 2445.6.3 Identify and explain electric control of pneumatic and hydraulic systems (single and multiple gas and fluid systems).

Standard 7: Fluidics (2445.S.7)

Students will explain the basic principles of fluidics as they apply to the various devices and operations in mechanical services.

Fluidics Objectives

Students will:

- 2445.7.1 Compare and contrast basic principles of pneumatics and hydraulics, and describe devices that operate on each principle.
- 2445.7.2 Demonstrate typical industrial compressed air systems, explaining the various types of controls used.
- 2445.7.3 Memorize and use accepted practices and nomenclatures for lubricants and oils used in fluidics.
- 2445.7.4 Demonstrate how flow and pressure control systems, fluid pumps, motors and actuators function

Standard 8: Mechanisms (2445.S.8)

Students will understand and demonstrate the proper use of lubricants and mechanical practices.

Mechanisms Objectives

Students will:

- 2445.8.1 Describe friction bearings and mechanical seals and their uses.

- 2445.8.2 Explain the difference between oil, grease and synthetic lubricants and their use.
- 2445.8.3 Describe the operation of fluid motors and pumps which require alignment of drive mechanisms (shimming, etc.).
- 2445.8.4 Install piping, tubing and fittings used in mechanical services.
- 2445.8.5 Explain the difference between gears, levers, pulleys and types of bearings

Standard 9: Impacts (2445.S.9)

Students will understand the impacts and future implications of mechanical services systems as they relate to individuals, society, and the economic, environmental, and technological systems.

Impacts Objectives

Students will:

- 2445.9.1 Discuss several social changes brought about by the development of mechanical services technology.
- 2445.9.2 Explain how mechanical services technology affects our economic system and give examples.
- 2445.9.3 Describe positive and negative implications that various mechanical services technologies have had on the environment.
- 2445.9.4 Discuss a variety of future developments in mechanical services and their possible effects on society.

Transportation Systems

WVEIS Code 2448

This course will introduce students to the use of tools and resources to relocate people and goods. Topics range from the subsystems of transportation to the sources of energy used in the industry. Students will explore various applications in transportation technology through hands on activities.

Standard 1: Background (2448.S.1)

Students will describe the transportation system, its development and importance in the world today.

Background Objectives

Students will:

- 2448.1.1 Define transportation technology in terms of the systems model, listing the inputs, processes, outputs and feedback and give examples of each.
- 2448.1.2 Identify and describe important inventions and developments in transportation technology.
- 2448.1.3 Determine the advantages and disadvantages of selected modes of transportation in relation to its efficiency (speed, payload, economics, safety).

Standard 2: Communication Applications (2448.S.2)

Students will use oral, graphic and written communication skills to effectively deliver a variety of messages.

Communication Applications Objectives

Students will:

- 2448.2.1 Use a variety of techniques to access information and use it to solve design problems in transportation.
- 2448.2.2 Write a technical report explaining a specific transportation process, which reflects appropriate technical style, and use word processing software to generate the technical report.
- 2448.2.3 Prepare and deliver a 3-5 minute extemporaneous speech on a given topic in transportation.
- 2448.2.4 Apply vocabulary and reading comprehension skills used in transportation occupations.

Standard 3: Mathematical Applications (2448.S.3)

Students will apply accurate measurement practices, solve math problems, and perform algebraic computations as they relate to transportation careers.

Mathematical Applications Objectives

Students will:

- 2448.3.1 Perform mathematical computations as they relate to transportation activities (calculating speed, loads, lift, etc.)
- 2448.3.2 Interpret various charts, graphs and drawings used to display numerical data.

Standard 4: Problem Solving (2448.S.4)

Students will apply design, creativity and critical thinking skills to develop solutions to a variety of problems involving different technologies to meet specific criteria.

Problem Solving Objectives

Students will:

- 2448.4.1 Practice a variety of ways to generate ideas to solve problems.
- 2448.4.2 Plan and select the materials, energy, tools, and processes needed for producing solutions to transportation problems, and produce solutions for a variety of problems.
- 2448.4.3 Use several testing strategies to evaluate the solution to transportation problems, and analyze information gained through testing to evaluate the success of solutions.

2448.4.4 Create a design portfolio to use the remainder of the semester to document your design work.

Standard 5: Safety (2448.S.5)

Students will develop appropriate health and safety practices associated with the transportation industry.

Safety Objectives

Students will:

- 2448.5.1 Explain and demonstrate general safety rules and the proper use of tools, machines, and equipment in the transportation laboratory.
- 2448.5.2 Describe safety measures and industrial laws and regulations used by transportation industries to protect workers on the job.

Standard 6: Power and Energy (2448.S.6)

Students will understand the role that energy plays in producing power for transportation and how power systems convert energy into work.

Power and Energy Objectives

Students will:

- 2448.6.1 Define energy and the three major categories of energy sources (renewable, non-renewable, and inexhaustible), listing several examples of each.
- 2448.6.2 Explain the Law of Conservation of Energy.
- 2448.6.3 Define mechanical advantage and describe how the six simple machines provide mechanical advantage to a vehicle.
- 2448.6.4 Define power and describe the three major power systems used in transportation (mechanical, electrical, fluid), listing several examples.
- 2448.6.5 Illustrate the types of gears used in transmission of power, and calculate gear ratio and direction.

Standard 7: Propulsion Sub-Systems (2448.S.7)

Students will explain the operation of various propulsion systems used in transportation.

Propulsion Sub-Systems Objectives

Students will:

- 2448.7.1 Define propulsion, and describe the three major types of energy converters used in transportation (heat engines, electric systems, hybrid systems).
- 2448.7.2 Describe the effect that friction has on the movement of a vehicle.
- 2448.7.3 Compare and contrast 2-stroke and 4-stroke engines.
- 2448.7.4 Compare and contrast propulsion systems used in air transport: reciprocating and jet engines.

Standard 8: Structural Sub-Systems (2448.S.8)

Students will describe the purpose of structural systems and analyze designs as to their efficiency.

Structural Sub-Systems Objectives

Students will:

- 2448.8.1 Explain the various structural design criteria including: human, safety, and economic factors, giving examples.
- 2448.8.2 Describe various materials used in vehicle structures (body, hull, fuselage) and why each is used.
- 2448.8.3 Design and construct a model vehicle, which demonstrates efficient aerodynamic or hydrodynamic design.

Standard 9: Suspension Sub-Systems (2448.S.9)

Students will compare and contrast various types of suspension systems and explain their purpose in vehicles.

Suspension Sub-Systems Objectives

Students will:

- 2448.9.1 Define suspension, and list the three types of suspension systems, giving examples of each (mechanical, fluid, magnetic).
- 2448.9.2 Describe the main components of suspension systems used in land transportation.
- 2448.9.3 Explain Bernoulli's Principle, describing the forces that affect an aircraft in flight.
- 2448.9.4 Define buoyancy and explain how it provides suspension to marine craft.
- 2448.9.5 Explain why aerodynamic devices (airfoils) are not effective in space.

Standard 10: Support Sub-Systems (2448.S.10)

Students will describe the function of support systems for the transportation industry.

Support Sub-Systems Objectives

Students will:

- 2448.10.1 Explain the need for each of the five types of support systems used in transportation (life, legal, operations, maintenance, economic).

Standard 11: Guidance Sub-Systems (2448.S.11)

Students will explain guidance systems and why they are an integral part of any transportation system.

Guidance Sub-Systems Objectives

Students will:

- 2448.11.1 Explain the purpose of guidance systems in transportation.
- 2448.11.2 Describe several types of visual and electronic guidance systems and give examples of where each would most commonly be found.

Standard 12: Control Sub-Systems (2448.S.12)

Students will describe the purpose of control systems in transportation systems.

Control Sub-Systems Objectives

Students will:

- 2448.12.1 Describe the two major categories of control systems: speed and direction.
- 2448.12.2 Demonstrate the concept of movement about axes (roll, pitch, yaw) in a variety of modes.
- 2448.12.3 Define random and fixed routes, and briefly explain directional control in both.
- 2448.12.4 Describe the various ways to control speed and direction in land transportation vehicles.
- 2448.12.5 Identify and describe the control surfaces on an aircraft and how they function.

Standard 13: Impacts (2448.S.13)

Students will examine the impacts and future implications of transportation systems as they relate to society, the economy, and the environment.

Impacts Objectives

Students will:

- 2448.13.1 Discuss several social changes brought about by technological developments in the transportation industry.
- 2448.13.2 Explain how our economy is affected by developments in transportation systems and give examples.
- 2448.13.3 Describe positive and negative implications that various transportation technologies have had

on the environment.

2448.13.4 Discuss a variety of future developments in transportation and their possible effects on society, the economy and the environment.

Fundamentals of Millwork and Cabinet Making

WVEIS Code 2451

This course will introduce students to the careers, skills and knowledge related to wood processing.

Standard 1: Career Opportunities (2451.S.1)

Students will identify, explore, and evaluate career opportunities related to the processing of wood.

Career Opportunities Objectives

Students will:

- 2451.1.1 Describe a variety of careers related to industrial and custom wood processing and the training necessary to be successful in those careers.
- 2451.1.2 Develop appropriate attitudes and behaviors required to succeed in careers in the field of wood processing.
- 2451.1.3 Identify sources of information about careers in wood processing.

Standard 2: Safety Rules and Equipment (2451.S.2)

Students will demonstrate safety rules and equipment for industrial machines.

Safety Rules and Equipment Objectives

- 2451.2.1 Recognize and follow general shop safety guidelines.
- 2451.2.2 Identify, select and demonstrate proper use and care of all basic personal safety equipment.
- 2451.2.3 Demonstrate the proper selection and use of fire extinguishers.
- 2451.2.4 Describe OSHA regulations necessary when using hazardous materials.
- 2451.2.5 Describe proper waste disposal of industrial finishes.

Standard 3: Mathematics in Millwork and Cabinet Making (2451.S.3)

Students will apply accurate measurement practices, solve math problems, and perform geometric computations as they relate to the processing of wood.

Mathematics in Millwork and Cabinet Making Objectives

Students will:

- 2451.3.1 Perform mathematical computations as they relate to processing wood (calculating board feet, square feet, moisture content, etc.).
- 2451.3.2 Interpret various charts, graphs and drawings used to display numerical data in the manufacturing process of wood.

Standard 4: Thinking Skills Development (2451.S.4)

Students will apply design, creativity and critical thinking skills to develop solutions to problems to meet specific criteria.

Thinking Skills Development Objectives

Students will:

- 2451.4.1 Plan and select the materials, energy, tools, and processes needed for solving problems in wood processing.
- 2451.4.2 Practice a variety of ways to generate ideas to solve problems.
- 2451.4.3 Create a design portfolio to document all design work.

Standard 5: Basic Blueprint Reading and Drawings (2451.S.5)

Students will properly interpret basic blueprints and working drawings.

Basic Blueprint Reading and Drawings Objectives

Students will:

- 2451.5.1 Interpret scale drawings.
- 2451.5.2 Identify and define common drawing symbols.
- 2451.5.3 Read and follow technical instructions in manuals, text and specifications.

Standard 6: Woodworking Equipment (2451.S.6)

Students will identify and properly use basic woodworking equipment.

Woodworking Equipment Objectives

Students will:

- 2451.6.1 Identify a variety of woodworking hand tools (layout tools, cutting tools, etc.).
- 2451.6.2 Identify a variety of woodworking power tools (saws, drills, sanders, etc.).
- 2451.6.3 Identify a variety of woodworking machines (table saw, band saw, drill press, wood lathe, etc.).
- 2451.6.4 Repair or replace broken tools and equipment.
- 2451.6.5 Sharpen all hand tools, machine blades, bits, etc.

Standard 7: Wood Characteristics (2451.S.7)

Students will identify and describe the common characteristics of a variety of woods.

Wood Characteristics Objectives

Students will:

- 2451.7.1 Identify the common growth pattern of all trees.
- 2451.7.2 Identify the difference between hardwood and softwood cell structure.
- 2451.7.3 Determine the moisture content and specific gravity of a particular wood.
- 2451.7.4 Describe the mechanical properties of wood.
- 2451.7.5 Identify wood species based on viewing a sample.
- 2451.7.6 Classify woods according to certain characteristics such as color, hardness, texture and grain pattern.
- 2451.7.7 Describe present and potential application for each wood species.
- 2451.7.8 Select woods that may be substituted for another more expensive wood.

Standard 8: Cabinetry Styles (2451.S.8)

Students will describe a variety of cabinetry styles.

Cabinetry Style Objectives

Students will:

- 2451.8.1 Explain the process of cabinetry styles from the 17th century to today.
- 2451.8.2 Describe the difference between traditional, provincial and contemporary design.
- 2451.8.3 Identify characteristics of each style of design (traditional, provincial and contemporary).

Standard 9: Operation of Machines (2451.S.9)

Students will perform various operations using jigs, fixtures and special machines.

Operation of Machines Objectives

Students will:

- 2451.9.1 Identify accessories that increase the convenience of a machine.
- 2451.9.2 Describe several applications of jigs and fixtures.
- 2451.9.3 Select proper equipment to cut large or bulky panel products.

Standard 10: Basic Wood Joinery (2451.S.10)

Students will properly produce a variety of basic wood joints.

Basic Wood Joinery Objectives

Students will:

- 2451.10.1 Select appropriate joints based on the product and material.
- 2451.10.2 Select hand tools, power equipment, and special jigs or accessories for joinery.
- 2451.10.3 Create and assemble nonpositioned, positioned, and reinforced joints.

Standard 11: Gluing and Clamping Techniques (2451.S.11)

Students will properly apply a variety of gluing and clamping techniques.

Gluing and Clamping Techniques Objectives

Students will:

- 2451.11.1 Identify types of clamping devices.
- 2451.11.2 Select clamps to assemble various joints.
- 2451.11.3 Describe how to protect work pieces from clamp damage.
- 2451.11.4 Explain the procedure for assembling the work piece with clamps.

Standard 12: Interior Trim and Molding (2451.S.12)

Students will identify interior trim and molding.

Interior Trim and Molding Objectives

Students will:

- 2451.12.1 Identify basic chair rail, doorstop, wall trim and window trim.
- 2451.12.2 Identify basic floor trim, inside corner, outside corner, ceiling trim (crown) molding, stool door trim, etc.

Standard 13: Furniture Drawer Construction (2451.S.13)

Students will construct and mount a drawer, using proper construction techniques.

Furniture Drawer Construction Objectives

Students will:

- 2451.13.1 Describe design and engineering factors that influence drawer construction.
- 2451.13.2 Design and process drawer components.
- 2451.13.3 Assemble drawers using various joints.
- 2451.13.4 Mount drawers with conventional and commercial glides, slides, and tracks.
- 2451.13.5 Install drawer pulls and knobs.

Standard 14: Finishing Materials (2451.S.14)

Students will apply finishing materials.

Finishing Materials Objectives

Students will:

- 2451.14.1 Select tools and equipment to apply finishing materials.
- 2451.14.2 Apply finish by brushing, spraying, wiping, dipping, or rolling.
- 2451.14.3 Clean and maintain tools and equipment.
- 2451.14.4 Apply all safety procedures.

Standard 15: Computer Applications in the Processing of Woods (2451.S.15)

Students will apply appropriate computer skills in the processing of woods.

Computer Applications in the Processing of Woods Objectives

Students will:

- 2451.15.1 Identify computer numerical equipment used in wood processing operations.
- 2451.15.2 Apply computer aided drafting and design in the design stage of projects.
- 2451.15.3 Apply computer skills for estimating project bills of materials.

Travel West Virginia

WVEIS Code 7663

This course provides students with an awareness of the impact of tourism in West Virginia. Students study the eight tourism regions of the state, the history, heritage, culture and geography of the state related to tourism and the role that marketing plays in building our tourism industry. Hospitality careers are also covered.

Standard 1: Develop an appreciation for and promote a sense of pride in the state of West Virginia. (7663.S.1)

Pride in the State Objectives

Students will:

- 7663.1.1 Describe and have an understanding of how stereotypes and prejudice can negatively impact West Virginia.
- 7663.1.2 Evaluate stereotypes used to describe West Virginia and determine their validity.
- 7663.1.3 List places of interest in West Virginia.
- 7663.1.4 Analyze slogans that promote West Virginia.
- 7663.1.5 Explain reasons why people should come to West Virginia.

Standard 2: Demonstrate an understanding of historical/geographical places of interest in West Virginia. (7663.S.2)

Historical/Geographical Objectives

Students will:

- 7663.2.1 Locate on a map the eight tourist regions of West Virginia.
- 7663.2.2 Draw conclusions about West Virginia's eight tourist regions from maps, pictures, charts and graphs.
- 7663.2.3 Explain how the physical geography of West Virginia supports tourism.
- 7663.2.4 Identify the location of places of historical significance in West Virginia.
- 7663.2.5 Identify the location of places of recreational interest in West Virginia and distinguish which are natural and man-made.
- 7663.2.6 Categorize historical/geographical places of interest by tourist region.
- 7663.2.7 Categorize historical places of interest by time period.

Standard 3: Analyze the potential for tourism in West Virginia. (7663.S.3)

Tourism Objectives

Students will:

- 7663.3.1 Define tourism.
- 7663.3.2 Identify the location and role of the Convention and Visitors' Bureaus.
- 7663.3.3 List reasons people travel.
- 7663.2.4 List the major population centers that are within a 500-mile radius of West Virginia.
- 7663.2.5 Evaluate misconceptions about tourism.
- 7663.2.6 Interpret data regarding tourism in West Virginia.
- 7663.2.7 List categories of tourism and give examples of each.
- 7663.2.8 Define target markets.
- 7663.2.9 List target markets for tourism and compare/contrast each.
- 7663.2.10 Evaluate the importance of preservation, e.g., natural beauty, historical significance vs. economic progress.
- 7663.2.11 Explain how ethnicity impacts tourism.
- 7663.2.12 Analyze data to determine leisure travel habits of potential target markets.
- 7663.2.13 Describe internal and external factors that motivate people to travel.

Standard 4: Explore careers in the hospitality and tourism industry. (7663.S.4)

Careers in Hospitality and Tourism Objectives

Students will:

- 7663.4.1 List careers in hospitality and tourism.
- 7663.4.2 Categorize jobs in hospitality and tourism, e.g., entry level, CEO.
- 7663.4.3 Explain how a hobby can become a career.
- 7663.4.4 Define entrepreneur.
- 7663.4.5 Evaluate how careers in hospitality/tourism can change over time.
- 7663.4.6 Compare job opportunities in each of the eight tourist regions.
- 7663.4.7 Identify personal traits that are necessary for a successful career in the hospitality industry.
- 7663.4.8 Identify benefits of a career in hospitality/tourism.
- 7663.4.9 Demonstrate skills necessary to ensure a successful interview.
- 7663.4.10 Demonstrate the ability to complete an application form.
- 7663.4.11 Explain the role an employee fills in promoting tourism.
- 7663.4.12 Describe the steps in looking for a job.
- 7663.4.13 Define career ladder.

Standard 5: Develop skills and competencies necessary for success in any occupation as identified by the Secretary's Commission on Achieving Necessary Skills. (SCANS) (7663.S.5)

SCANS Objectives

Students will:

- 7663.5.1 Define SCANS.
- 7663.5.2 Identify basic skills necessary for workplace competency.
- 7663.5.3 Identify personal skills essential for workplace competency.
- 7663.5.4 List the functional skills necessary for workplace success and cite examples of each.
- 7663.5.5 Identify workplace competencies found in everyday activities.

Standard 6: Compare economic opportunities in different regions of the state. (7663.S.6)

Economic Opportunities Objectives

Students will:

- 7663.6.1 List businesses affected by tourism.
- 7663.6.2 Categorize the effect of tourism on select businesses as direct or indirect.
- 7663.6.3 Assess the impact of interstate highways on the economic development of West Virginia.
- 7663.6.4 Explain reasons businesses locate in specific areas.
- 7663.6.5 Identify the role of lodging and restaurants to the promotion of tourism.
- 7663.6.6 Identify industries and products that are important to West Virginia's economy.
- 7663.6.7 Analyze the strengths and weaknesses of each of the eight tourist regions and make recommendations for economic development in each.
- 7663.6.8 Give examples of historical structures that have been used for economic development.
- 7663.6.9 Evaluate the economic impact of special events, e.g., fairs festivals.
- 7663.6.10 Analyze how an increase or decrease in tourism affects businesses.

Standard 7: Develop an understanding of the role marketing plays in tourism. (7663.S.7)

Role Marketing Plays in Tourism Objectives

Students will:

- 7663.7.1 Define marketing.
- 7663.7.2 List the 5 P's of marketing.
- 7663.7.3 Distinguish between a product and service.
- 7663.7.4 Evaluate the factors that make tourism a product or a service.
- 7663.7.5 List factors to consider when describing a target market.

- 7663.7.6 Explain the role market research plays in the tourist industry.
- 7663.7.7 Evaluate information from a variety of sources and formulate a marketing plan for your local tourist region.
- 7663.7.8 Describe the elements of a marketing plan.
- 7663.7.9 Explain how increased tourism brings added demands on public facilities/services.
- 7663.7.10 Explain the role promotion plays in marketing.
- 7663.7.11 Compare/contrast the importance of a campaign theme.

INDEX (by WVEIS Code)

0101	1	0434	366	1449	168
0102	3	0437	370	1451	171
0112	5	0511	176	1453	173
0113	7	0512	179	1455	175
0131	9	0711	265	1601	408
0132	11	0713	268	1603	409
0133	14	0715	270	1605	410
0134	17	0717	279	1607	412
0135	18	0719	282	1621	420
0136	21	0721	291	1623	426
0137	24	0901	186	1625	428
0138	27	0902	188	1627	431
0139	30	0911	190	1629	433
0140	33	0921	193	1631	435
0141	36	0922	196	1633	437
0142	39	0923	200	1635	439
0143	41	0924	204	1637	443
0144	44	0925	208	1641	446
0145	47	0926	212	1645	453
0146	49	0927	216	1647	454
0147	51	0928	217	1649	455
0148	54	0929	220	1651	456
0149	57	0941	225	1653	457
0150	60	0951	227	1661	458
0182	74	0952	230	1671	459
0183	76	0961	233	1673	461
0184	78	1401	112	1675	464
0185	80	1403	114	1677	465
0186	82	1405	116	1679	467
0187	84	1407	118	1681	469
0188	87	1409	120	1683	470
0189	90	1411	123	1685	471
0190	94	1413	124	1701	476
0201	96	1415	125	1703	480
0212	98	1417	127	1705	482
0213	101	1419	130	1707	484
0214	103	1421	132	1709	485
0215	106	1423	134	1711	487
0216	108	1425	137	1721	488
0217	110	1427	139	1723	489
0401	335	1429	143	1725	490
0404	338	1431	144	1727	491
0407	341	1433	146	1729	493
0410	345	1435	148	1733	495
0413	348	1437	151	1737	496
0416	351	1439	154	1741	511
0422	354	1441	157	1743	513
0425	357	1443	159, 161	1745	514
0428	360	1445	163	1747	515
0431	362	1447	166	1749	517

1751	519	1825	570	1921	616
1761	521	1827	571	1923	618
1763	523	1829	573	1925	619
1765	525	1831	574	1927	620
1767	526	1833	576	1941	634
1769	527	1835	577	1943	636
1771	529	1837	579	1945	639
1773	531	1839	581	1947	642
1781	532	1841	582	1949	643
1783	534	1851	584	1981	675
1785	537	1853	585	1983	677
1787	540	1855	587	1985	678
1789	542	1857	588	1987	680
1791	543	1859	590	1989	681
1793	545	1861	591	1993	682
1795	547	1871	592	1995	683
1801	548	1873	593	2401	685
1803	549	1875	596	2421	689
1805	550	1901	597	2424	692
1811	552	1903	598	2427	695
1812	554	1905	601	2430	696
1813	556	1907	603	2433	697
1814	558	1909	605	2439	703
1815	560	1911	607	2442	705
1816	562	1913	608	2445	708
1817	564	1915	610	2448	711
1821	566	1917	613	7663	719
1823	569	1919	614		

FISCAL NOTE WORKSHEET
(Submit 4 Copies)

HD NO _____ DRAFT NO _____ BILL NO _____ RESOLUTION NO _____

SUBJECT Policy 2520.13: Content Standards and Objectives for Technical and Adult Education in West Virginia Schools

FUND General

SOURCE OF REVENUE: ☐ GENERAL FUND ☐ SPECIAL ☐ OTHER (SPECIFY) _____

COST OF ESTIMATE BASED ON: ☐ AN ORIGINAL ESTIMATE ☐ BUDGET BILL ☐ OTHER (SPECIFY) _____

INCOME ESTIMATE BASED ON: ☐ AN ORIGINAL ESTIMATE ☐ BUDGET BILL ☐ OTHER (SPECIFY) _____

SHOW OVER-ALL EFFECT IN ITEMS 1 AND 2 & GIVE EXPLANATION OF BREAKDOWN BY FISCAL YEAR INCLUDING LONG-RANGE EFFECT

EFFECT OF PROPOSAL	ANNUAL		CURRENT	FISCAL YEAR		
	INCREASE	DECREASE		NEXT	THEREAFTER	
1. ESTIMATED TOTAL COST	\$ -0-	\$ -0-	\$ -0-	\$ -0-	\$ -0-	
PERSONAL SERVICES CURRENT EXPENSES REPAIRS/ALTERATIONS EQUIPMENT OTHER	\$	\$	\$	\$	\$	
2. ESTIMATED TOTAL REVENUES	\$ -0-	\$ -0-	\$ -0-	\$ -0-	\$ -0-	

3. EXPLANATION OF ABOVE ESTIMATES (INCLUDING LONG-RANGE EFFECT):

DATE

12-17-2002

AGENCY

West Virginia Department of Education

AUTHORIZED REPRESENTATIVE

Stanley Hopkins

**POLICY 2520.13
CONTENT STANDARDS AND OBJECTIVES FOR TECHNICAL AND ADULT EDUCATION IN
WEST VIRGINIA SCHOOLS
COMMENT RESPONSE FORM**

Comment Period Ends: February 14, 2003

Please use this form when commenting on proposed Policy 2520.13. You may attach additional sheets if necessary.

Individual: _____

Title: _____

Organization: _____

Street Address: _____

City/State/Zip Code: _____

General:

Agricultural Education

Business Education

Diversified Cooperative Training

Family & Consumer Science

Health Occupations

Lodging Management

Marketing Education

Occupational Family & Consumer Science

Technical & Industrial Education

Technology Education

Please return comments to:

**Norma K. Miller
Director, Office of Program Services
West Virginia Department of Education
Building 6, Room 243, Capitol Complex
1900 Kanawha Boulevard East
Charleston, West Virginia 25305-0330**

(Base 5) Basic Attitudes, Skills and Experiences WVEIS Code 0923

The student will focus on a variety of life skills and abilities that will assist their development of responsibility and self disciplined behaviors. The student will work through many decision making and problem solving situations in areas of career awareness, life style choices, community involvement, lifetime relationships, consumer skills, enhancing communication, managing one's health, leadership and citizenship.

BASE is designed to meet the unique needs of Family and Consumer Sciences (FACS) middle and junior high programs that have a wide variety of configurations. BASE is a very flexible curriculum that can meet the needs of various age groups and the wide variety of course lengths and school scheduling programs.

Standard 1: Basic Skills (0923.S.1)

The students will reinforce basic skills by completing daily BASE assignments.

Basic Skills Objectives

Students will:

- 0923.1.1 Enhance reading, writing and math skills through assigned FACS curriculum.
- 0923.1.2 Improve communication skills, both oral and written, through involvement in oral presentations and written reports relating to FACS curriculum.
- 0923.1.3 Investigate a variety of Human Services career goals.

Standard 2: Personal Development/Family Relationships (0923.S.2)

The student will work toward a positive self-identity and learn to relate to others.

Personal Development/Family Relationships Objectives

Students will:

- 0923.2.1 Explain how an individual's roles and personal traits influence the development of their self-concept.
- 0923.2.2 Identify factors affecting both positive and negative self-concept.
- 0923.2.3 Describe common development characteristics changes of early adolescents and how these changes influence an individual's self-concept.
- 0923.2.4 Investigate, "Who am I."
- 0923.2.5 Use problem-solving and decision making techniques in coping with assigned adolescent problems.
- 0923.2.6 Distinguish good and poor traits of being a good friend.
- 0923.2.7 Formulate a plan to make yourself a good friend.
- 0923.2.8 Define family, generation, affection, and respect for others.
- 0922.2.9 Demonstrate the different family roles individuals play across their life span.
- 0923.2.10 Identify the relationship between children and parents.
- 0923.2.11 Define your individual family role.
- 0923.2.12 Investigate the importance of caring for children in a responsible way.
- 0923.2.13 Identify relationships between rights and responsibilities of family members.
- 0923.2.14 Identify family crisis situations and community sources of help.
- 0923.2.15 Describe the effect of social problems on the individual, family and society.

Standard 3: Management (0923.S.3)

The student will gain effective management skills.

Management Objectives

Students will:

- 0923.3.1 Explain the difference between an individual's wants and needs.