

PROGRAM: Accounting and Related Services

**PROGRAM
CIP CODE:** 52.0300.00

DESCRIPTION: The **Accounting and Related Services** instructional program prepares students to provide technical support to professional accountants and other financial management personnel. In addition, students will possess the foundation skills needed for postsecondary studies in any area of business. Instruction includes general accounting principles and practices, posting transactions to accounts, record keeping systems and accounting software operation. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Accounting and Related Services. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organization, FBLA (Future Business Leaders of America).

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation

The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment continued or continued related education. All Career Preparation state-designated Accounting & Related Services standards are addressed in the instructional sequence.

Schools with ADE approved Accounting & Related Services programs will utilize all of the industry-validated state standards and measurement criteria for this program in the design and delivery of the following recommended sequence of courses.

52.0300.10 **Introduction to Accounting:** This course is recommended for students who have an interest in accounting and a desire to understand the financial aspects of business organizations. Students will be introduced to general accounting principles and practices. You will develop the skills and knowledge required to compute, classify and record numerical data, to keep accurate financial records for corporations and other forms of business. A computer with business applications software is used by students to perform business and finance related tasks.

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52.0300.20 **Advanced Accounting:** This course is integrated into learning experiences allowing students to demonstrate their knowledge and skills in the full range of Accounting & Related Services State standards through projects and simulations.

And program may elect to add:

52.0300.75 **Accounting and Related Services - Internship:** This course provides students an opportunity to apply previously developed accounting knowledge and skills while participating in a structured work experience. Students may be paid or unpaid for their work experience.

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52.0300.80 **Accounting and Related Services - Cooperative Education:** This course is designed to provide students with both school-based and work-based learning. Training plans and training agreements are based on previously developed accounting knowledge and skills. Students generally work a minimum of 15 hours a week.

PROGRAM: Advanced Construction Technologies

**PROGRAM
CIP CODE:** 46.0400.20

DESCRIPTION: The **Advanced Construction Technologies** program is designed to prepare individuals to apply technical knowledge and skills in the building industry which include units of instruction in carpentry, electrical, masonry/brick laying, concrete finishing, plumbing, floor systems, wall and ceiling framing, roof framing, site layout and exterior finish, applications. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

46.0400.10 **Construction Technologies Core Curriculum:** This foundation course will prepare students to use a wide variety of construction tools and equipment and maintain a safe work environment. The student will develop an understanding of construction math, financial operations, reading blueprints, basic rigging and basic construction techniques. The student will develop skills in oral and written communication as they relate to the construction industry. This course is designed to help students develop an enhanced understanding of teamwork, employability skills and career opportunities in the construction field.

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46.0400.20 **Advanced Construction Technologies:**This course prepares the individual to apply and demonstrate advanced technical knowledge and skills in various types of construction. This lab based course will provide the students an opportunity to participate in the planning, design and completion of project based activities. i.e. electrical, masonry/brick laying, concrete finishing, HVAC, plumbing, floor systems, wall and ceiling framing, site layout, interior and exterior finish and roof applications.

And program may elect to add:

46.0400.75 **Construction Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Construction Technologies knowledge and skills.

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46.0400.80 **Construction Technologies - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences, directly related to the standards identified for the Construction Technologies program.

PROGRAM: Advertising and Public Relations

**PROGRAM
CIP CODE:** 52.1800.30

DESCRIPTION: **Advertising and Public Relations:** This course prepares students to create and market communication strategies utilizing multiple media mediums. Includes instruction in the elements of advertising, design, graphics, and copyright to effectively plan, integrate and implement successful advertising and public relations campaigns. The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experiences, and the Career and Technical Student Organization, DECA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Advertising and Public Relations standards are addressed in this instructional sequence.

52.1800.10 **Marketing, Management and Entrepreneurship Fundamentals:** This course is designed to introduce the students to basic marketing concepts and principles as they relate to Professional Sales and Marketing, Advertising and Public Relations, Entertainment Marketing and Entrepreneurship.

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52.1800.30 **Advertising and Public Relations:** This course prepares students to create and market communication strategies utilizing multiple media mediums. Includes instruction in the elements of advertising, design, graphics, and copyright to effectively plan, integrate and implement successful advertising and public relations campaigns.

And program may elect to add:

52.1800.75 **Marketing, Management and Entrepreneurship - Internship:** This course provides MME students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed MME knowledge and skills. However, the Internship does require applications directly related to the Technical Standards of the Marketing, Management and Entrepreneurship program.

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52.1800.80 **Marketing, Management and Entrepreneurship - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the Technical Standards identified for the Marketing, Management, and Entrepreneurship program. Students generally work a minimum of 15 hours per week.

PROGRAM: Agribusiness Systems - Agricultural Business Management

**PROGRAM
CIP CODE:** 01.0100.90

DESCRIPTION: The **Agricultural Business Management - Agriscience** program is designed to prepare students for employment in the Agriculture, Food and Natural Resources career cluster as defined by the USDE Office of Vocational and Adult Education. Students completing this program will possess the appropriate cluster technical knowledge and skills associated with the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, applied academic, and life management skills. The program utilizes a delivery system made up of three essential and required components: formal instruction, experiential education through Supervised Agricultural Experiences (SAEs), leadership and personal development through the Career and Technical Student Organization FFA. A model for this delivery system appears in the approved Curriculum Framework booklet.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Agricultural Business Management - Agriscience standards are addressed in this instructional sequence.

01.0100.10 **Agricultural Business Management - Introduction to Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.12 **Agricultural Business Management - Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.14 **Agricultural Business Management - Agriscience:** These Standards are designed to deliver the lab science standards associated with the Agriculture, Food and Natural Resources career cluster. Lab science credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is recommended that these standards be covered in course sequences during the 10th through 12th grades. This specific course is the 11th grade course.

-and-

01.0100.90 **Agribusiness Systems:** Prepares students for careers in Sales, Service, Farm and Ranch Management, Entrepreneurship, Economics, etc.

And program may elect to add:

01.0100.75 **Agricultural Business Management - Agriscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Agricultural Business Management - Agriscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid. This is part of the student's SAE component.

-or-

01.0100.80 **Agricultural Business Management - Agriscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Agricultural Business Management - Agriscience program.

PROGRAM: Air Transportation

**PROGRAM
CIP CODE:** 49.0100.00

DESCRIPTION: The **Air Transportation** program will focus on the general study of aviation and the aviation industry. The content includes communications and human relations, safe and efficient work practices, Federal Aviation Administration Pilot certification procedures, aircraft systems and components, flight safety, physics and aerodynamics and instrumentation. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

49.0100.10 **Air Transportation I:** This course will focus on the general study of the aviation industry, including in-flight and ground support operations, radio communications, navigation procedures and systems, airways safety and traffic regulations and governmental rules and regulations pertaining to piloting aircraft.

-and-

49.0100.20 **Air Transportation II:** This course will focus on preparing individuals to apply technical knowledge and skills to flying and/or navigation of fixed wing aircraft. Including instruction in principles of aircraft design and performance, aircraft flight systems and controls, flight crew operations and procedures and radio communications.

And program may elect to add:

49.0100.75 **Air Transportation - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Air Transportation knowledge and skills.

-or-

49.0100.80 **Air Transportation - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences related to the standards identified for Air Transportation.

PROGRAM: Aircraft Mechanics

**PROGRAM
CIP CODE:** 47.0600.50

DESCRIPTION: The **Aircraft Mechanics** program is designed to prepare individuals for jobs as technicians in the aerospace fields. The program is comprised of a core curriculum along with Air Transportation I and Air Transportation II. The occupational standards for each are in alignment with FAA Airframe and Power Plant technology. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

47.0600.10 **Transportation Technologies Core Curriculum:** This program prepares the student to apply technical knowledge and skills in the safety, adjustment, maintenance, part replacement, and use of tools, equipment and machines. The course includes developing career plans, preparing for employment, participating in work-based learning experiences, demonstrating oral and written communication skills, understanding financial operations of small businesses, identifying characteristics of successful leaders in the work place and participation in leadership development activities.

-and-

47.0600.50 **Aircraft Mechanics I:** This course provides beginning level knowledge and skills that have been identified as preparation for the FAA Airframe and Power Plant (A&P) certificate. Further education and training may be required to be able to master the knowledge and skills required for full A&P certification.

-and-

47.0600.55 **Aircraft Mechanics II:** This course provides an advancing level of knowledge and skills that have been identified as preparation for the FAA Airframe and Power Plant (A&P) Certificate. Further education and training may be required to be able to master the knowledge and skills required for full A&P certification.

And program may elect to add:

47.0600.75 **Transportation Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Transportation Technologies knowledge and skills.

-or-

47.0600.80

Transportation Technologies - Cooperative Education: This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences related to the standards identified for the Transportation Technologies program.

PROGRAM: Animal Systems - Agricultural Business Management

**PROGRAM
CIP CODE:** 01.0100.40

DESCRIPTION: The **Animal Systems** program is designed to prepare students for employment in the Veterinarian, animal nutritionist, feed formulator, animal managers, physiologist and animal scientist career cluster as defined by the USDE Office of Vocational and Adult Education. Students completing this program will possess the appropriate cluster technical knowledge and skills associated with the animal production, animal health, animal anatomy, physiology, nutrition, processing, marketing, distribution, financing, small animal care and management. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, applied academic, and life management skills. The program utilizes a delivery system made up of three essential and required components: formal instruction, experiential education through Supervised Agricultural Experiences (SAEs), leadership and personal development through the Career and Technical Student Organization FFA. A model for this delivery system appears in the approved Curriculum Framework booklet.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Agricultural Business Management - Agriscience standards are addressed in this instructional sequence.

01.0100.10 **Agricultural Business Management - Introduction to Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.12 **Agricultural Business Management - Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.14 **Agricultural Business Management - Agriscience:** These Standards are designed to deliver the lab science standards associated with the Agriculture, Food and Natural Resources career cluster. Lab science credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is recommended that these standards be covered in course sequences during the 10th through 12th grades. This specific course is the 11th grade course.

-and-

01.0100.40 **Animal Systems:** Prepares students for careers in large animals, small animals, wildlife animals, and research animals.

And program may elect to add:

01.0100.75 **Agricultural Business Management - Agriscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Agricultural Business Management - Agriscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid. This is part of the student's SAE component.

-or-

01.0100.80 **Agricultural Business Management - Agriscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Agricultural Business Management - Agriscience program.

PROGRAM: Animation

**PROGRAM
CIP CODE:** 10.0200.60

DESCRIPTION: The **Animation** instructional program prepares the students in developing the process of displaying still images in a rapid sequence to create the illusion of movement. These images can be hand drawn, computer generated, or pictures of 3D objects. Though most people associate animation with cartoons, it also has applications in industrial and scientific research. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Animation while also having a strong portfolio to support their knowledge and skill. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry validated skills for initial employment or continued related education. All the state-designated Communication Media Technologies Core Standards and Animation Technical Standards are addressed in this instructional sequence.

10.0200.10 **Communication Media Technologies Fundamentals:** This course is an introduction to technical skills and knowledge for one specific program area within CMT or a mixture of CMT program areas that are reflected at each school. The focus of the coursework will be in line with the specific industry(ies) that are available and relevant to the student's future plans for post-secondary and/or business & Industry. Instruction will include:

- Analyzing the media industry, business practices and its role in the economy.
- Investigating the Intellectual Property Law and Rights Management.
- Demonstrating verbal and nonverbal communication skills required by the media industry.
- Demonstrating written communication skills within the media industry.
- Utilizing computer applications to manage media.
- Applying knowledge of data capture and manipulation.

Two of the following Career Preparation Programs will be included as part of the instructional sequence for this program. These Standards are to be included in the instructional emphasis for the entire program for the option selected:

-and-

10.0200.60 **Animation I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Animation.

-and-

10.0200.65 **Animation II:** This course will be the development of a portfolio with the following projects:

- Classroom
- School
- Community
- Business & Industry

related to Animation.

-or-

10.0200.20 **Digital Printing I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Printing.

-or-

10.0200.50 **Digital Photography I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Photography.

-or-

10.0200.30 **Graphic/Web Design I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Graphic/Web Design.

-or-

10.0200.40 **Journalism I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Journalism.

-or-

10.0200.90 **Film & TV I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Film & TV.

-or-

10.0200.00 **Music & Audio Productions I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Music & Audio Productions.

And program may elect to add:

10.0200.75 **Communication Media Technologies- Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Interior Design and Merchandising program.

-or-

10.0200.80

Communication Media Technologies- Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Architectural Drafting

**PROGRAM
CIP CODE:** 15.1300.20

DESCRIPTION: The **Architectural Drafting** program is designed to prepare students to apply technical skills via computer assisted design and drafting to create two-dimensional and three-dimensional engineering designs using BIM (Building Information Models) type programs. It includes instruction in specification interpretation, dimensioning techniques, drafting calculations, material estimation, technical communications, and computer applications. In addition to the occupation related skills, students completing this program will develop advanced critical thinking, applied academics, interpersonal relations, life management, and business, economic, and leadership skills required for the 21st century workplace. The Architectural Drafting program consists of two areas of specialization, Fundamentals of Drafting and Design Technologies and Architectural Drafting. The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience, and the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

**Career
Preparation** The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Drafting and Design Technologies standards are addressed in this instructional sequence.

15.1300.10 **Fundamentals of Drafting and Design Technologies:** This course prepares students to apply technical knowledge and skills to plan and prepare scale interpretations of engineering, design and architectural projects. It includes instruction in creating layouts and designs, blueprints and renderings and in the use of computer-assisted design programs. In addition to knowledge of drafting technologies, students will have the opportunity to place special emphasis on more specific services and/or industries in which they have an interest.

-and-

15.1300.20 **Architectural Drafting:** This course prepares students to apply technical knowledge and skills to develop working drawings and electronic simulations for architectural, civil and geological engineers. Instruction in basic construction, civil engineering principles, structural design, geological and seismographic mapping, machine and pipe drafting, architectural rendering, layout and designs, survey interpretation, blueprint interpretation, building materials and basic structural wiring diagramming.

And program may elect to add:

15.1300.75 **Drafting and Design Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience, that can be either paid or unpaid and does not necessarily require classroom instruction, that involves the application of previously developed Drafting and Design Technologies knowledge and skills.

-or-

15.1300.80

Drafting and Design Technologies - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Drafting and Design Technologies program.

PROGRAM: Arts Management

**PROGRAM
CIP CODE:** 50.0500.30

DESCRIPTION: The **Arts Management** instructional program prepares students to participate in the technical and management areas of the performing arts and entertainment industry. In addition, students will possess the foundation skills needed for postsecondary studies arts management. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills and technical knowledge and skills associated with the performing arts and entertainment industry.

Leadership skills are developed through the state recognized Career and Technical Student Organizations, Skills USA. Performing Arts and Entertainment Industry students are also encouraged to be active members of the Arizona State Thespians.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education.

Arts Management pathway is for students interested in managing performing arts or entertainment industry businesses.

50.0500.30 Performing Arts and Entertainment Industry - Fundamentals: Arts Management: This course prepares students to apply knowledge and skills from the world of business to the management of non-profit performing arts and for-profit entertainment companies. This program includes instruction in financial management practices for performing arts businesses, legal and ethical behaviors in the entertainment industry, safety rules and procedures, marketing, administrative management and leadership, human resource management, information systems and technology, fundraising and development, and operations (front and back of house) management.

Recommended Pre-Requisite: a fine arts class in theatre, music or dance or a business fundamentals course.

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50.0500.35 Performing Arts and Entertainment Industry - Arts Management I: Prepares individuals to manage the planning, preparation, and application of arts management practices to performing arts and entertainment businesses as described above.

And program may elect to add:

50.0500.36 Performing Arts and Entertainment Industry - Arts Management II: This third optional course continues the work of Arts Management I, with students managing the planning, preparation, and application of arts management practices to performing arts and entertainment businesses as described above.

And program may elect to add:

50.0500.75 **Performing Arts and Entertainment Industry - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Performing Arts and Entertainment Industry knowledge and skills.

-or-

50.0500.80 **Performing Arts and Entertainment Industry - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based learning and supervised work-based learning experiences directly related to the standards for the Performing Arts and Entertainment Industry program.

PROGRAM: Automation / Robotics

**PROGRAM
CIP CODE:** 48.0500.20

DESCRIPTION: The **Automation / Robotics** program is designed to introduce students to basic precision manufacturing principals and technical skills. Students will be prepared in the following instructional areas: manufacturing systems, production planning and quality control, documentation, technical problem-solving, management information systems, predictive/preventive maintenance and automated manufacturing. Students will have the opportunity to earn an industry recognized Industry recognized certifications such as Certified Education Robot Training (CERT). The program is comprised of two core courses and a Automation/Robotics final course. The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience, and the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

48.0500.10 **Fundamentals of Precision Manufacturing:** This course includes units of instruction in computer control and power systems used in manufacturing. Units also include set up and change-over techniques, using industrial instruments and utilizing technical skills. Instruction also includes careers opportunities in manufacturing, communications skills, work-based learning experiences, teamwork, safety, creative thinking and problem solving.

-and-

48.0500.12 **Applications of Precision Manufacturing:** This course includes units of instruction in computer control and power systems used in manufacturing. Units also include set up and change-over techniques, using industrial instruments and utilizing technical skills. Instruction also includes careers opportunities in manufacturing, communications skills, work-based learning experiences, teamwork, safety, creative thinking and problem solving.

-and-

48.0500.20 **Automation / Robotics:** Students in this course will learn how automation reduces the need for human labor. Students will understand the math, science and technology of robots, their design, and application in industrial automation for manufacturing. Students will learn control systems, robotics and computer applications and how they are used to control machinery in industry. Students will gain a working knowledge of electronics, programming, mechanics, pneumetics and applicable software through technical skills in support of technicians and other personnel engaged with robotics.

And program may elect to add:

48.0500.75 **Precision Manufacturing - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Precision Manufacturing knowledge and skills.

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48.0500.80 **Precision Manufacturing - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Precision Manufacturing program.

PROGRAM: Automotive Collision Repair

**PROGRAM
CIP CODE:** 47.0600.30

DESCRIPTION: The **Automotive Collision Repair** program is designed to prepare individuals for jobs as technicians in the automotive fields. The program is comprised of a core curriculum and Automotive Collision Repair I and II. The occupational standards for each are aligned with National Automotive Technicians Education Foundation (NATEF) and Automotive Service Excellence (ASE) standards. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

47.0600.10 **Transportation Technologies Core Curriculum:** This program prepares the student to apply technical knowledge and skills in the safety, adjustment, maintenance, part replacement, and use of tools, equipment and machines. The course includes developing career plans, preparing for employment, participating in work-based learning experiences, demonstrating oral and written communication skills, understanding financial operations of small businesses, identifying characteristics of successful leaders in the work place and participation in leadership development activities.

-and-

47.0600.30 **Automotive Collision Repair I:** This course prepares individuals to apply basic technical knowledge and skills in seven standards areas:
1) safety and maintenance;
2) damage analysis and preparing repair cost estimates;
3) disassemble and assemble parts,
4) non-structural repair;
5) metal, plastic and fiberglass repairs;
6) prepare and finish surfaces; and
7) paint and refinishing techniques.

-and-

47.0600.35 **Automotive Collision Repair II: Automotive Collision Repair II:** This course prepares the individual to apply higher levels of technical knowledge and skills to repair, reconstruct and finish automobile and light truck bodies, fenders and external features. Includes instruction in seven competency areas:
1) safety and maintenance;
2) damage analysis and damage reports;
3) disassemble and assemble parts;
4) non-structural repairs;
5) structural and mechanical analysis;
6) metal, plastic and fiberglass repairs;
7) prepare and finish surfaces; and
8) paint and refinishing techniques.

And program may elect to add:

47.0600.75 **Transportation Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Transportation Technologies knowledge and skills.

-or-

47.0600.80 **Transportation Technologies - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences related to the standards identified for the Transportation Technologies program.

PROGRAM: Automotive Technologies

**PROGRAM
CIP CODE:** 47.0600.20

DESCRIPTION: The **Automotive Technologies** program is designed to prepare individuals for jobs as technicians in the automotive fields. The program is comprised of a core curriculum and Automotive Technologies I and II. The occupational standards for each are aligned with National Automotive Technicians Education Foundation (NATEF) and Automotive Service Excellence (ASE) standards. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

47.0600.10 **Transportation Technologies Core Curriculum:** This program prepares the student to apply technical knowledge and skills in the safety, adjustment, maintenance, part replacement, and use of tools, equipment and machines. The course includes developing career plans, preparing for employment, participating in work-based learning experiences, demonstrating oral and written communication skills, understanding financial operations of small businesses, identifying characteristics of successful leaders in the work place and participation in leadership development activities.

-and-

47.0600.20 **Automotive Technologies I:** This course prepares the individual to apply technical knowledge and skills in safety, adjustment, maintenance, and parts replacement to repair automobiles and light trucks. Students are introduced to: a) brake systems; b) electric/electronic systems; c) steering and suspension systems; and d) engine performance diagnosis and repair.

-and-

47.0600.25 **Automotive Technologies II:** This course prepares the individual to apply higher levels of technical knowledge and skills to maintain, diagnose and repair automobiles and light trucks. Students will gain in-depth knowledge needed to troubleshoot and identify malfunctioning components and sensors; and correct these problems in four areas:

- 1) brake systems;
- 2) electrical/electronic systems;
- 3) steering and suspension systems; and
- 4) engine performance analysis. Graduates should be able to pass the ASE tests for each of the four areas.

And program may elect to add:

47.0600.75 **Transportation Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Transportation Technologies knowledge and skills.

-or-

47.0600.80 **Transportation Technologies - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences related to the standards identified for the Transportation Technologies program.

PROGRAM: Bioscience

PROGRAM CIP CODE: 41.0100

DESCRIPTION: The **Bioscience** program prepares individuals to apply scientific principals and technical skills in support of biologists and biotechnologists in research, industrial, and government settings. Includes instruction in fermentation technology, cell culturing, protein purification, biologic synthesis, assaying and testing, quality control, industrial microbiology, bioprocessing, chromatography and bioseperation, genetic technology, laboratory and hazardous materials safety, and computer applications and test equipment operation and maintenance. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, Health Occupations Students of America (HOSA).

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Bioscience standards are addressed in this instructional sequence.

41.0100.10 **Introduction to Bioscience:** Students must attain these Standards in a coherent sequence.

-and-

Option A

41.0100.20 **Bio-medical:** Prepares students for careers in hospital, clinical, and private laboratories dealing with the medical field.

-or-

Option B

41.0100.30 **Bio-environmental:** Prepares students for careers in biochemistry, biophysics and molecular biology.

-or-

Option C

41.0100.40 **Bio-innovations:** Prepares students for careers in anything not covered in the previous two options.
And program may elect to add:

41.0100.75 **Bioscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Bioscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid.

-and-

41.0100.80 **Bioscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Bioscience program.

PROGRAM: Business Management and Administrative Services

PROGRAM CIP CODE: 52.0200.00

DESCRIPTION: The **Business Management and Administrative Services** instructional program prepares students to perform technical support services involved with planning, organizing, researching, directing and controlling functions related to the production, buying and selling of goods and services in domestic and international markets. In addition students will possess the foundation skills needed for postsecondary studies in any area of business. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills and technical knowledge and skills associated with functions essential for a business operation. Students completing this program will be prepared to participate in teams to solve problems and make decisions about business related issues. The program is designed and delivered as a coherent sequence of school-based and work-based experiences. Leadership skills are developed through the state recognized Career and Technical Student Organizations, FBLA or DECA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment continued or continued related education. All Career Preparation state-designated Business Management & Administrative Service standards are addressed in the instructional sequence.

Schools with ADE approved Business Management & Administrative Services programs will utilize all of the industry-validated state standards and measurement criteria for this program in the design and delivery of the following recommended sequence of courses.

52.0200.10 **Introduction to Business Management and Administrative Services:** This course is recommended for students who have an interest in business and a desire to understand how business works in today's global economy. This course prepares students with technical skills and knowledge related to the economics, management and administrative support functions of business, which cut across industries as well as develop knowledge and skills in applied research, business communications, principles of business law, public relations, information management, meeting planning and office supervisory skills. A computer with business applications software is used by students as a tool to perform business tasks.

-and-

52.0200.20 **Advanced Business Management and Administrative Services:** This course includes instruction in business planning and operations through projects and simulations. Computer software applications are applied to the technical support functions essential to the operation of an enterprise and buying and selling of goods and services.

And program may elect to add:

52.0200.75 **Business Management and Administrative Services - Internship:** This course provides students an opportunity to apply previously developed business management & administrative services knowledge and skills while participating in a structured work experience. Students may be paid or unpaid for their work experience.

-or-

52.0200.80

Business Management and Administrative Services - Cooperative Education: This course is designed to provide students with both school-based and work-based learning. Training plans and training agreements are based on previously developed business management & administrative services knowledge and skills. Students generally work a minimum of 15 hours a week.

PROGRAM: Business Operations Support and Assistant Services

**PROGRAM
CIP CODE:** 52.0400.00

DESCRIPTION: The **Business Operations Support and Assistant Services** program is designed to prepare students for instruction in business communications, principles of business law, word processing, data entry, office machine operations, office procedures, public relations, filing, records management and report preparation. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Business Operations & Support Services. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organization, FBLA (Future Business Leaders of America).

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment continued or continued related education. All Career Preparation state-designated Business Operations Support and Assistant Service standards are addressed in the instructional sequence.

Schools with ADE approved Business Operations Support and Assistant Services programs will utilize all of the industry-validated state standards and measurement criteria for this program in the design and delivery of the following recommended sequence of courses.

52.0400.10 **Introduction to Business Operations Support and Assistant Services:** This course is recommended for students who have an interest in Administration and Information Support to learn how to utilize technology to perform and coordinate the administrative activities of an office and to ensure that information is collected and disseminated to staff and clients effectively and efficiently.

-and-

52.0400.20 **Advanced Business Operations Support and Assistant Services:** Students enrolled in this course will develop advanced knowledge and skills in desktop publishing, office procedures, transcription, public relations, records management and customer service while integrating the skills attained in the Introduction to Business Operations Support and Assistant Services course.

And program may elect to add:

52.0400.75 **Business Operations Support and Assistant Services - Internship:** This course provides BOSAS students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed BOSAS knowledge and skills. However, the Internship does require applications directly related to the Technical Standards of the Business Operation Support and Assistant Services program.

-or-

52.0400.80

Business Operations Support and Assistant Services - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the Technical Standards of the Business Operation Support and Assistant Services program. Students generally work a minimum of 15 hours per week.

PROGRAM: Cabinetmaking

**PROGRAM
CIP CODE:** 46.0400.40

DESCRIPTION: The **Cabinetmaking** program is designed to prepare individuals to apply technical knowledge and skills in cabinetry. A student in this class has an opportunity to participate in the planning, design and completion of project based activities in the cabinetmaking industries. Instruction also includes careers opportunities, communications skills, teamwork, safety, creative thinking and problem solving. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

46.0400.10 **Construction Technologies Core Curriculum:** This foundation course will prepare students to use a wide variety of construction tools and equipment and maintain a safe work environment. The student will develop an understanding of construction math, financial operations, reading blueprints, basic rigging and basic construction techniques. The student will develop skills in oral and written communication as they relate to the construction industry. This course is designed to help students develop an enhanced understanding of teamwork, employability skills and career opportunities in the construction field.

-and-

46.0400.40 **Cabinetmaking:** This course prepares the individual to apply and demonstrate advanced technical knowledge and skills. This lab based course will provide the students an opportunity to participate in the planning, design and completion of project based activities. This course prepares students for advanced technical knowledge and skills using a variety of cabinetmaking techniques and equipment.

And program may elect to add:

46.0400.75 **Construction Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Construction Technologies knowledge and skills.

-and-

46.0400.80 **Construction Technologies - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences, directly related to the standards identified for the Construction Technologies program.

PROGRAM: Carpentry

**PROGRAM
CIP CODE:** 46.0400.30

DESCRIPTION: The **Carpentry** program is designed to prepare individuals to apply technical knowledge and skills in the building industry which include units of instruction in safety, hand and power tools, foundations, floor, wall, ceiling, and roof framing, also mathematics, job estimating and blueprint reading. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

46.0400.10 **Construction Technologies Core Curriculum:** This foundation course will prepare students to use a wide variety of construction tools and equipment and maintain a safe work environment. The student will develop an understanding of construction math, financial operations, reading blueprints, basic rigging and basic construction techniques. The student will develop skills in oral and written communication as they relate to the construction industry. This course is designed to help students develop an enhanced understanding of teamwork, employability skills and career opportunities in the construction field.

-and-

46.0400.30 **Carpentry:** This course prepares the individual to apply and demonstrate advanced technical knowledge and skills to layout, cut fabricate, erect, install and repair wooden structures and fixtures, using hand and power tools. Includes instruction in technical mathematics, safety, framing, construction materials and selection, job estimating, blueprint reading, foundations and roughing-in, finish carpentry techniques and applicable codes and standards.

And program may elect to add:

46.0400.75 **Construction Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Construction Technologies knowledge and skills.

-and-

46.0400.80 **Construction Technologies - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences, directly related to the standards identified for the Construction Technologies program.

PROGRAM: Computer Maintenance

**PROGRAM
CIP CODE:** 15.1200.20

DESCRIPTION: The **Computer Maintenance** program is designed to prepare students for employment/postsecondary education related to the design, development, installation, implementation, use and management of computers. The program prepares students for employment in various positions such as Applications Specialist, Desktop Technician, Hardware Technican/Engineer, Help Desk Technican/Manager, Information Architect, IT Designer, PC Technician, Program Analyst, Systems Analyst, Systems Operations Specialist, Technical Sales Representative, Technical Support Technican/Manager, Technical Writer, Training Manager

An integrated approach of teaching and learning is provided as students enhance their technical knowledge and skills that are associated with functions within Computer Maintenance occupations. In addition to the occupation related skills, students completing this program will also develop advanced critical thinking, applied academic, interpersonal relations, life management, business, economic, and leadership skills, as well as workplace employability skills.

The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experiences, and the Career and Technical Student Organization, FBLA and/or SkillUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Computer Maintenance es standards are addressed in this instructional sequence.

15.1200.10 **Information Technologies Fundamentals:** This course introduces principles of computers with an emphasis on basic concepts of computer maintenance, network technologies, software development and web page development. While also providing an understanding of the IT industry, computer mathematics and the evolution of the computer.

-and-

15.1200.20 **Computer Maintenance:** This program prepares students to apply technical knowledge and skill in PC hardware and software systems with an emphasis on PC repair and maintenance. This option will offer skills necessary to competently perform in the industrial environment, as well as pass the necessary exams to obtain certification.

-or-

And program may elect to add:

15.1200.75 **Information Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Information Technologies knowledge and skills.

-or-

15.1200.80

Information Technologies - Cooperative Education: This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Information Technologies program.

PROGRAM: Cosmetology

**PROGRAM
CIP CODE:** 12.0400.00

DESCRIPTION: The **Cosmetology** instructional program prepares students to perform technical services involved with planning, organizing, researching, directing and controlling functions and processes related to the provision of cosmetology services. An integrated approach to teaching and learning is provided as students develop interpersonal relations, career development skills and technical knowledge and skills associated with careers in this field. Students completing this program will be prepared to participate in teams, solve problems think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes a recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All of the Career Preparation state-designated Cosmetology standards are addressed in this instructional sequence.

12.0400.10 **Fundamentals of Cosmetology:** This course introduces students to careers in Cosmetology by preparing them to apply academic, employability and technical knowledge and skills related to common industry standards and practices.

-and-

12.0400.20 **Cosmetology - Advanced Applications:** This course introduces students to careers in Cosmetology by preparing them to apply academic, employability and technical knowledge and skills related to common industry standards and practices.

And program may elect to add:

12.0400.75 **Cosmetology - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Cosmetology into a structured work experience. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

12.0400.80 **Cosmetology - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards for the Cosmetology program.

PROGRAM: Culinary Arts

**PROGRAM
CIP CODE:** 12.0500.00

DESCRIPTION: The **Culinary Arts** program is designed to prepare students to apply technical knowledge and skills required for food production and service occupations in commercial foodservice establishments. Students completing this program will possess the technical knowledge and skills required for planning, selecting, storing, purchasing, preparing and serving quality food products. Nutritive values, safety and sanitation procedures, use of commercial equipment, serving techniques and management of food establishments will also be studied. In addition to technical skills, students completing this program will develop advanced critical thinking, applied academic, career development, life and employability skills, business, economic, and leadership skills required for culinary arts occupations. The program utilizes a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience, and the Career and Technical Student Organizations, FCCLA and SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes a recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the state-designated Culinary Arts standards are addressed in this instructional sequence.

12.0500.10 **Fundamentals of Culinary Arts:** Students develop skills necessary for food preparation, food production, service, and support staff positions in a commercial kitchen. The course includes instruction in planning, selecting, storing, purchasing, preparing, and serving food and food products; basic nutrition, food safety, sanitation; the use and care of commercial equipment, organization and operations, quantity food preparation skills. Emphasis is placed on critical thinking, practical problem solving, and entrepreneurship opportunities within the foodservice industry. This course integrates the core academics of math, science, and language arts within the field of culinary arts.

-and-

12.0500.20 **Culinary Arts Applications:** This course prepares students with advanced applications in commercial kitchen equipment, organization and operations, sanitation, quality control, quantity food preparation and food preparation skills. Additionally, training is provided in business operations of a food and beverage establishment. Core academic knowledge is integrated into the curriculum as relevant to careers in the foodservice industry.

And program may elect to add:

12.0500.75 **Culinary Arts - Internship:** Students extend and expand upon previously developed knowledge and skills by applying this experience into a structured work environment. The work experience may or may not require classroom instruction, may be paid or unpaid, and is available to 12th graders who have completed at least one Carnegie unit of study in the Culinary Arts program.

-or-

12.0500.80

Culinary Arts - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Culinary Arts program.

PROGRAM: Dental Assisting

**PROGRAM
CIP CODE:** 51.0600.00

DESCRIPTION: The **Dental Assisting** program prepares students to perform technical services involved with planning, organizing, researching, directing and controlling functions and processes related to the provision of medical assisting healthcare services - both front office and clinical responsibilities. An integrated approach to teaching and learning is provided as students develop interpersonal relations, career development skills and technical knowledge and skills associated with a dental assistant. Students completing this program will be prepared to participate in teams, solve problems, think critically, and implement effective solutions. The program will be designed and delivered as a coherent sequence of experiences using technical instruction, experiential learning, supervised clinical experience, and leadership and personal development through the career and technical student organization, HOSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses yet to be developed that will be necessary for initial employment or continued related education.

51.0600.10 **Fundamentals of Dental Assisting:** This course prepares students to apply academic, technical knowledge and skills of the Dental Assistant in a clinical or dental office setting or to continue into postsecondary education.

-and-

51.0600.20 **Dental Assisting - Advanced Applications:** This course prepares students to apply academic, technical knowledge and skills of the Dental Assistant in a clinical or dental office setting or to continue into postsecondary education.

And program may elect to add:

51.0600.75 **Dental Assisting - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific option they have studied. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0600.80 **Dental Assisting - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program they have studied.

PROGRAM: Diesel Engine Repair

**PROGRAM
CIP CODE:** 47.0600.40

DESCRIPTION: The **Diesel Engine Repair** program is designed to prepare individuals for jobs as technicians in the automotive fields. The program is comprised of a core curriculum and Diesel Engine Repair I and II. Diesel Engine Repair Technology includes units on repair, service, and maintenance of diesel engines in vehicles such as automobiles, buses, trucks and construction equipment; as well as stationary diesel engines in electrical generators and related equipment. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

47.0600.10 **Transportation Technologies Core Curriculum:** This program prepares the student to apply technical knowledge and skills in the safety, adjustment, maintenance, part replacement, and use of tools, equipment and machines. The course includes developing career plans, preparing for employment, participating in work-based learning experiences, demonstrating oral and written communication skills, understanding financial operations of small businesses, identifying characteristics of successful leaders in the work place and participation in leadership development activities.

-and-

47.0600.40 **Diesel Engine Repair I:** This course prepares the individuals to apply technical knowledge and skills to repair service and maintain diesel engines and related equipment.

-and-

47.0600.45 **Diesel Engine Repair II:** This course prepares the individual to apply higher levels of technical knowledge and skills to repair vehicles such as buses, trucks, ships, railroad locomotives construction equipment and related equipment.

And program may elect to add:

47.0600.75 **Transportation Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Transportation Technologies knowledge and skills.

-or-

47.0600.80 **Transportation Technologies - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences related to the standards identified for the Transportation Technologies program.

PROGRAM: Digital Photography

PROGRAM CIP CODE: 10.0200.50

DESCRIPTION: The **Digital Photography** instructional program prepares the students to capture an image directly with a digital camera, by capturing a frame from a video, and by scanning a conventional photograph and then applying a wide variety of special effects to it with image enhancing software. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Digital Photography while also having a strong portfolio to support their knowledge and skill. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry validated skills for initial employment or continued related education. All the state-designated Communication Media Technologies Core Standards and Digital Photography Technical Standards are addressed in this instructional sequence.

10.0200.10 **Communication Media Technologies Fundamentals:** This course is an introduction to technical skills and knowledge for one specific program area within CMT or a mixture of CMT program areas that are reflected at each school. The focus of the coursework will be in line with the specific industry(ies) that are available and relevant to the student's future plans for post-secondary and/or business & Industry. Instruction will include:

- Analyzing the media industry, business practices and its role in the economy.
- Investigating the Intellectual Property Law and Rights Management.
- Demonstrating verbal and nonverbal communication skills required by the media industry.
- Demonstrating written communication skills within the media industry.
- Utilizing computer applications to manage media.
- Applying knowledge of data capture and manipulation.

Two of the following Career Preparation Programs will be included as part of the instructional sequence for this program. These Standards are to be included in the instructional emphasis for the entire program for the option selected:

-and-

10.0200.50 **Digital Photography I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Photography.

-and-

10.0200.55 **Digital Photography II:** This course will be the development of a portfolio with the following projects:

- Classroom
- School
- Community
- Business & Industry

related to Digital Photography

-or-

10.0200.20 **Digital Printing I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Printing.

-or-

10.0200.30 **Graphic/Web Design I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Graphic/Web Design.

-or-

10.0200.40 **Journalism I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Journalism.

-or-

10.0200.60 **Animation I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Animation.

-or-

10.0200.90 **Film & TV I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Film & TV.

-or-

10.0200.00 **Music & Audio Productions I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Music & Audio Productions.

And program may elect to add:

10.0200.75 **Communication Media Technologies- Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Interior Design and Merchandising program.

-or-

10.0200.80

Communication Media Technologies- Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Digital Printing

**PROGRAM
CIP CODE:** 10.0200.20

DESCRIPTION: The **Digital Printing** instructional program prepares the students to learn the process of the integration of a new era in printing with digital copiers and presses. Digital printing has caused a paradigm shift in the printing world; making the impossible, possible. It has brought solutions that many print customers needed and offers a variable printing option that now considered essential in the industry. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, workplace employability skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or post-secondary programs where they will be able to apply the skills necessary to be in Digital Printing while also having a strong portfolio to support their knowledge and skill. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry validated skills for initial employment or continued related education. All the state-designated Communication Media Technologies Core Standards and Digital Photography Technical Standards are addressed in this instructional sequence.

10.0200.10 **Communication Media Technologies Fundamentals:** This course is an introduction to technical skills and knowledge for one specific program area within CMT or a mixture of CMT program areas that are reflected at each school. The focus of the coursework will be in line with the specific industry(ies) that are available and relevant to the student's future plans for post-secondary and/or business & Industry. Instruction will include:

- Analyzing the media industry, business practices and its role in the economy.
- Investigating the Intellectual Property Law and Rights Management.
- Demonstrating verbal and nonverbal communication skills required by the media industry.
- Demonstrating written communication skills within the media industry.
- Utilizing computer applications to manage media.
- Applying knowledge of data capture and manipulation.

Two of the following Career Preparation Programs will be included as part of the instructional sequence for this program. These Standards are to be included in the instructional emphasis for the entire program for the option selected:

-and-

10.0200.20 **Digital Printing I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Printing.

-and-

10.0200.25

Digital Printing II: This course will be the development of a portfolio with the following projects:

- Classroom
- School
- Community

related to Digital Printing.

-or-

10.0200.50 **Digital Photography I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Photography.

-or-

10.0200.30 **Graphic/Web Design I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Graphic/Web Design.

-or-

10.0200.40 **Journalism I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Journalism.

-or-

10.0200.60 **Animation I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Animation.

-or-

10.0200.90 **Film & TV I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Film & TV.

-or-

10.0200.00 **Music & Audio Productions I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Music & Audio Productions.

And program may elect to add:

10.0200.75 **Communication Media Technologies - Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Interior Design and Merchandising program.

-or-

10.0200.80 **Communication Media Technologies - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Early Childhood Education

**PROGRAM
CIP CODE:** 13.1210.00

DESCRIPTION: The **Early Childhood Education** program is designed to prepare students for employment in early childhood settings. The program includes instruction in child growth and development, child health, nutrition, safety, planning and supervision of developmentally appropriate practices and learning activities. Child guidance, family relationships, parenting and applicable legal and administrative requirements are addressed, as well. Preparation for the development and management of effective early childhood programs and facilities is included. In addition to technical skills, students completing this program will also develop advanced critical thinking, applied academic, career development, life and employability skills, business, economic and leadership skills required for entry into Early Childhood Education occupations. The program utilizes a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience and the Career and Technical Student Organizations, FCCLA and/or FEA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses organized on the basis of industry-recognized skills necessary for initial employment or continued related education. All the state-designated Early Childhood Education standards are addressed in this instructional sequence.

13.1210.10 **Fundamentals of Early Childhood Education:** This course prepares occupational students to understand the physical, mental, emotional and social growth and development of children. It is recommended that a portion of class time be spent observing young children.

-and-

13.1210.20 **Early Childhood Education Applications:** This course prepares students for occupations in early childhood education in both the public and private sector. At least 50% of students time should be spent working with children below grade three. High school students may receive industry certifications such as the Child Development Association (CDA) upon completion of the program.

And program may elect to add:

13.1210.75 **Early Childhood Education - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Early Childhood Education knowledge and skills.

-or-

13.1210.80 **Early Childhood Education - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards for the Early Childhood Education program.

Program: Education Professions

PROGRAM CIP CODE: 13.1200.00

DESCRIPTION: The **Education Professions** program is designed to prepare students for employment and/or postsecondary opportunities in the education field. The program provides instruction in education career choices, education structure and systems, theory, pedagogy, developmental stages, learning styles and methodology. The program also provides interactive experiences with students at different age levels, in a variety of content areas in educational environments. Education Professions is designed to articulate with the Introduction to Education courses at the community college and Para-professional preparation programs. In addition to technical skills, students completing this program will develop advanced critical thinking skills, enhanced academic skills, develop civic responsibility, comprehend the stages of human development and their impact on learning in the classroom, identify instructional methods for student learning, examine and understand the role of the education industry as a consumer and the economy, and develop employability and leadership skills. The program utilizes a delivery system made up of four integral parts: formal/technical instruction, experiential/service-learning, supervised work-based learning and the student organization, FEA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation State-designated Education Professions standards are addressed in this instructional program.

13.1200.10 **Education Professions Fundamentals:** This course provides students with instruction in education career choices, history and structure of the education systems in the United States, legal and ethical responsibility of educators. It provides instruction in developmental stages of children, education theory, pedagogy and methodology. It is recommended that observation and interactive field experience be included as a significant part of this course.

-and-

13.1200.20 **Education Professions Applications:** This course prepares students to work in an educational environment. The course should expound on learning styles, interactions with students, use of equipment and resources, analyze the impact of classroom management and discipline strategies on student learning, methodology both in preparation and presentation in the classroom as a workplace, and identify instructional methods for student learning.

And program may elect to add:

13.1200.75 **Education Professions - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience. The internship may be either paid or unpaid and does not necessarily *require* classroom instruction that involves the application of previously developed Education Professions knowledge and skills but such skills would be beneficial to the student teacher and highly recommended.

-or-

13.1200.80

Education Professions - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based learning and supervised work-based learning experiences directly related to the standards for the Education Professions program.

PROGRAM: Electronics Drafting

**PROGRAM
CIP CODE:** 15.1300.30

DESCRIPTION: The **Electronics Drafting** program is designed to prepare students to apply technical skills via computer assisted design and drafting to create two-dimensional and three-dimensional engineering designs using BIM (Building Information Models) type programs. It includes instruction in specification interpretation, dimensioning techniques, drafting calculations, material estimation, technical communications, and computer applications. In addition to the occupation related skills, students completing this program will develop advanced critical thinking, applied academics, interpersonal relations, life management, and business, economic, and leadership skills required for the 21st century workplace. The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience, and the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

**Career
Preparation** The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Electronics Drafting standards are addressed in this instructional sequence.

15.1300.10 **Drafting and Design Technologies Fundamentals:** This course prepares students to apply technical knowledge and skills to plan and prepare scale interpretations of engineering, design and architectural projects. It includes instruction in creating layouts and designs, blueprints and renderings and in the use of computer-assisted design programs. In addition to knowledge of drafting technologies, students will have the opportunity to place special emphasis on more specific services and/or industries in which they have an interest.

-and-

15.1300.30 **Electronics Drafting:** This course prepares students to apply technical knowledge and skills to develop working schematics and representations in support of electrical/electronic and computer engineers. Includes instruction in basic electronics, electrical systems and computer layouts, electronic circuitry and electrical systems specification interpretation.

And program may elect to add:

15.1300.75 **Drafting and Design Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience, that can be either paid or unpaid and does not necessarily require classroom instruction, that involves the application of previously developed Drafting and Design Technologies knowledge and skills.

-or-

15.1300.80 **Drafting and Design Technologies - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Drafting and Design Technologies program.

PROGRAM: Electronic Technologies

**PROGRAM
CIP CODE:** 15.0300.00

DESCRIPTION: The **Electronic Technologies** program is designed to prepare students to apply basic engineering principles and technical skills in support of electrical, electronics and communication engineers. The program includes instruction in electrical circuitry, prototype development and testing of various micro circuits and evolving nanotechnology related to circuits, systems analysis and testing, systems maintenance, instrument calibration and report preparation, in addition to technical skills, students completing this program will understand the advances in nanotechnology, energy bands along with electronic and optical properties while developing advanced critical thinking, applied academic, career development, life management, business, economic and leadership skills required for Electronic Technologies occupations. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

15.0300.10 **Electronic Technologies Core Curriculum:** Students will learn basic safety principles and practices used in electronic manufacturing industries and/or repairing electronic equipment. Students will learn how to use basic hand tools, test equipment and troubleshooting techniques. Other units of instruction include basic math through trigonometry, reading and interpreting schematic diagrams and technical drawings, soldering-desoldering techniques and other basic assembly skills.

-and-

15.0300.20 **Electricity Principles and Applications:** This course includes units of instruction in basic concepts, electrical quantities and units, basic circuits, laws and measurements, circuit components, multiple-load circuits, complex-circuit analysis, becoming familiar with the newly developed "transfer and join" technology in nanotechnology with CMOS electronics, thin-film transistors, magnetism to include the introduction of magnetic and electronic properties of magnetic nanocrystals, electron microscopy, electron defraction, alternating current and voltage, power in AC circuits, capacitance, inductance, transformers, RCL circuits, electric motors, and test equipment.

-and-

15.0300.25 **Electronic Principles and Applications:** This course includes units of instruction in semiconductors, diodes, power supplies, transistors, small-signal amplifiers, large-signal amplifiers, operational amplifiers, oscillators, communications theory, integrated circuits, silicon-controlled rectifiers, regulated power supplies and digital signal processing.

And program may elect to add:

15.0300.75 **Electronic Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Electronic Technology knowledge and skills.

-or-

15.0300.80

Electronic Technologies - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Electronic Technology program.

PROGRAM: Emergency Medical Services

**PROGRAM
CIP CODE:** 51.0900.30

DESCRIPTION: **Emergency Medical Services:** Students completing this program will be prepared to participate in teams, solve problems, think critically and implement effective solutions. The program will be designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience, leadership and personal development through the Career and Technical Student Organization, HOSA.

This program is designed to prepare high school students with a foundation in knowledge and technical skills needed to help prepare them to continue their education toward Emergency Medical Services by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes a recommended sequence of courses. At least two Carnegie Units will be earned in the Career Preparation sequence of courses.

51.0900.30 **Fundamentals of Emergency Medical Services:** This course will help prepare students to continue their education toward becoming an Emergency Medical Paramedic by completing an appropriate postsecondary program.

-and-

51.0900.35 **Emergency Medical Services - Applications:** This course will help prepare students to continue their education toward becoming an Emergency Medical Paramedic by completing an appropriate postsecondary program.

And program may elect to add:

51.0900.75 **Diagnostic & Intervention Technologies - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific option they have studied. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0900.80 **Diagnostic & Intervention Technologies - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific option they have studied.

PROGRAM: Engineering Sciences

**PROGRAM
CIP CODE:** 15.0000.00

DESCRIPTION: The **Engineering Sciences** program is designed to develop student's understanding of engineering problem solving and design practices. The program will prepare students to apply fundamental scientific and mathematical laws and principles relevant to engineering and technology. Students will learn to use systems of measurement, apply engineering technologies and tools as well as learn about the different disciplines and opportunities within the field of engineering. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

15.0000.10 **Fundamentals of Engineering Sciences:** This course will teach the basic knowledge of Engineering principles and systems such as the engineering process, system analysis and control, focusing on the application of mathematical laws and principals.

-or-

15.0000.11 **Algebra II or above Math Course:** (course may be taken simultaneously with 15.0000.20)

-and-

15.0000.20 **Applications of Problem Solving in Engineering Sciences:** This course provides an opportunity for students to apply fundamentals in the world of new technologies emerging from engineering research such as nanotechnology, chemical, environmental or mechanical engineering. This includes the use of hand machine tools, computer aided tools and measurement systems. Students will learn how to link theory to hands-on real-world applications.

-and-

15.0000.30 **Advanced Engineering Sciences:** This course prepares students to use critical thinking skills and apply formulations from pre-calculus to basic innovative engineering job functions of research, design, development, testing and analysis when preparing product. Students will apply concepts of math and science, and problem solving skills to the different systems using input, process, output and feedback. Students will further demonstrate the fundamentals of engineering and mechanics using scientific principles from materials to to construct a project with consideration to environmental factors, economics and safety. This course is modeled to university criterion covering engineering theory through a hands-on approach.

And program may elect to add:

15.0000.75 **Engineering Sciences - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction.

-or-

15.0000.80 **Engineering Sciences - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Engineering Sciences program.

PROGRAM: Entertainment Marketing

**PROGRAM
CIP CODE:** 52.180040

DESCRIPTION: The **Entertainment Marketing** program is designed to prepare students for employment in various sales, customer service, first-line supervisory positions, sports marketing, hospitality and tourism, small business ownership, advertising/promotion, public relations and/or postsecondary education related to the field of Entertainment Marketing.

An integrated approach of teaching and learning is provided as students enhance their technical knowledge and skills that are associated with functions within Entertainment Marketing occupations. In addition to the occupation related skills, students completing this program will also develop advanced critical thinking, applied academics such as math and language arts, interpersonal relations, life management, business, economic, and leadership skills required for the 21st century workplace.

The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experiences, and the Career and Technical Student Organization, DECA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Entertainment Marketing standards are addressed in this instructional sequence.

52.1800.10 **Marketing, Management and Entrepreneurship Fundamentals:** This course is designed to introduce the students to basic marketing concepts and principles as they relate to Professional Sales and Marketing, Advertising and Public Relations, Entertainment Marketing and Entrepreneurship.
-and-

52.1800.40 **Entertainment Marketing:** This course prepares students to perform marketing and management functions and tasks that can be applied to amateur or professional sports or sporting events, entertainment services, hospitality services, travel and tourism services and media relations.

And program may elect to add:

52.1800.75 **Marketing, Management and Entrepreneurship - Internship:** This course provides MME students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed MME knowledge and skills. However, the Internship does require applications directly related to the Technical Standards of the Marketing, Management and Entrepreneurship program.

-or-

52.1800.80

Marketing, Management and Entrepreneurship - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the Technical Standards identified for the Marketing, Management, and Entrepreneurship program. Students generally work a minimum of 15 hours per week.

PROGRAM: Entrepreneurship

**PROGRAM
CIP CODE:** 52.1800.50

DESCRIPTION: The **Entrepreneurship** program is designed to prepare students for employment in various sales, customer service, first-line supervisory positions, sports marketing, hospitality and tourism, small business ownership, advertising/promotion, public relations and/or postsecondary education related to the field of Entrepreneurship.

An integrated approach of teaching and learning is provided as students enhance their technical knowledge and skills that are associated with functions within Entrepreneurship occupations. In addition to the occupation related skills, students completing this program will also develop advanced critical thinking, applied academics such as math and language arts, interpersonal relations, life management, business, economic, and leadership skills required for the 21st century workplace.

. The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experiences, and the Career and Technical Student Organization, DECA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Entrepreneurship standards are addressed in this instructional sequence.

52.1800.10 **Marketing, Management and Entrepreneurship Fundamentals:** This course is designed to introduce the students to basic marketing concepts and principles as they relate to Professional Sales and Marketing, Advertising and Public Relations, Entertainment Marketing and Entrepreneurship.

-and-

52.1800.50 **Entrepreneurship:** This course prepares students for small business ownership through the development of a business plan, marketing strategies and a financial plan while also gaining an understanding of HR and Management functions within a small business.

And program may elect to add:

52.1800.75 **Marketing, Management and Entrepreneurship - Internship:** This course provides MME students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed MME knowledge and skills. However, the Internship does require applications directly related to the Technical Standards of the Marketing, Management and Entrepreneurship program.

-or-

52.1800.80

Marketing, Management and Entrepreneurship - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the Technical Standards identified for the Marketing, Management, and Entrepreneurship program. Students generally work a minimum of 15 hours per week.

PROGRAM: Environmental Service Systems - Agricultural Business Management

**PROGRAM
CIP CODE:** 01.0100.00

DESCRIPTION: The **Environmental Service Systems - Agricultural Business Management** program is designed to prepare students for employment in the Agriculture, Food and Natural Resources career cluster as defined by the USDE Office of Vocational and Adult Education. Students completing this program will possess the appropriate cluster technical knowledge and skills associated with the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, applied academic, and life management skills. The program utilizes a delivery system made up of three essential and required components: formal instruction, experiential education through Supervised Agricultural Experiences (SAE), leadership and personal development through the Career and Technical Student Organization, FFA. A model for this delivery system appears in the approved Curriculum Framework booklet.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Agricultural Business Management - Agriscience standards are addressed in this instructional sequence.

01.0100.10 **Agricultural Business Management - Introduction to Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.12 **Agricultural Business Management - Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.14 **Agricultural Business Management - Agriscience:** These Standards are designed to deliver the lab science standards associated with the Agriculture, Food and Natural Resources career cluster. Lab science credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is recommended that these standards be covered in course sequences during the 10th through 12th grades. This specific course is the 11th grade course.

-and-

01.0100.00 **Environmental Service Systems:** Prepares students for careers in Pollution Prevention, Water & Air Quality, Hazardous Materials, Solid Waste Management, Health & Safety Sanitation, etc.

And program may elect to add:

01.0100.75 **Agricultural Business Management - Agriscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Agricultural Business Management - Agriscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid. This is part of the student's SAE component.

-or-

01.0100.80 **Agricultural Business Management - Agriscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Agricultural Business Management - Agriscience program.

PROGRAM: Fashion Design and Merchandising

**PROGRAM
CIP CODE:** 52.1900.20

DESCRIPTION: The **Fashion Design and Merchandising** program is designed to prepare students for employment or advanced postsecondary coursework in fashion design production, apparel sales, custom fashion design, supervisory positions in apparel manufacturing, and as buyers for retail establishments. A student completing this program will possess the technical knowledge and skills associated with fashion design, production and selection, wholesale purchasing, sales and promotion. In addition to technical skills, students completing this program will also develop advanced critical thinking, career development, applied academic skills, employability skills, basic business practices and leadership skills required for entry into fashion design and merchandising occupations. The program utilizes a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience and the Career and Technical Student Organization, FCCLA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation

The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the state-designated Fashion Design and Merchandising standards are addressed in this instructional sequence.

52.1900.10 **Fundamentals of Design and Merchandising:** This course introduces students to the technical knowledge and skills associated with design principles, production, selection, marketing principles, display, purchase, sales, promotion, construction, textile science, and business practices.

-and-

52.1900.20 **Fashion Design and Merchandising Applications:** This course is designed for students to apply advanced occupational skills in fashion design, production, selection, marketing, display, purchase, sales, promotion, and materials selection.

And program may elect to add:

52.1900.75 **Design and Merchandising - Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Fashion Design and Merchandising program.

-or-

52.1900.80 **Design and Merchandising - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Film & TV

PROGRAM CIP CODE: 10.0200.90

DESCRIPTION: The **FILM & TV** instructional program prepares the students to work in a variety of positions within the broadcast news, film, and television arenas. Broadcast news, Television and Movie Production is an elaborate process with seemingly endless details to contend with. Everyone in the production works to produce the best product possible. The students will gain a tremendous amount of skill and knowledge starting in pre-production and running through the entire process of presenting the product. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Film & TV while also having a strong portfolio to support their knowledge and skill. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organizations are: FBLA (Future Business Leaders of America) or SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry validated skills for initial employment or continued related education. All the state-designated Communication Media Technologies Core Standards and Film & TV Technical Standards are addressed in this instructional sequence.

10.0200.10 **Communication Media Technologies Fundamentals:** This course is an introduction to technical skills and knowledge for one specific program area within CMT or a mixture of CMT program areas that are reflected at each school. The focus of the coursework will be in line with the specific industry(ies) that are available and relevant to the student's future plans for post-secondary and/or business & Industry. Instruction will include:

- Analyzing the media industry, business practices and its role in the economy.
- Investigating the Intellectual Property Law and Rights Management.
- Demonstrating verbal and nonverbal communication skills required by the media industry.
- Demonstrating written communication skills within the media industry.
- Utilizing computer applications to manage media.
- Applying knowledge of data capture and manipulation.

Two of the following Career Preparation Programs will be included as part of the instructional sequence for this program. These Standards are to be included in the instructional emphasis for the entire program for the option selected:

-and-

10.0200.90 **Film & TV I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Film & TV.

-and-

10.0200.95 **Film & TV II:** This course will be the development of a portfolio with the following projects:

- Classroom
- School
- Community
- Business & Industry

related to Film & TV.

-or-

10.0200.20 **Digital Printing I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Printing

-or-

10.0200.30 **Graphic/Web Design I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Graphic/Web Design.

-or-

10.0200.40 **Journalism I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Journalism.

-or-

10.0200.50 **Digital Photography I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Photography.

-or-

10.0200.60 **Animation I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Animation.

-or-

10.0200.00 **Music & Audio Productions I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Music & Audio Productions.

And program may elect to add:

10.0200.75 **Communication Media Technologies- Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Interior Design and Merchandising program.

-or-

10.0200.80

Communication Media Technologies- Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Financial Services

**PROGRAM
CIP CODE:** 52.0800.00

DESCRIPTION: The **Financial Services** instructional program prepares students to provide a wide variety of customer services and technical support in investments and securities, financial planning, credit management, insurance, real estate and banking and other financial related areas. Development of leadership skills is integral to the students' success in the program. Students who complete this program will be prepared to participate in teams to solve problems and think critically about managing their personal finances and those of a business organization. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Financial Services. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organization, FBLA (Future Business Leaders of America).

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation

The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment continued or continued related education. All Career Preparation state-designated Financial Services standards are addressed in the instructional sequence.

Schools with ADE approved Financial Services programs will utilize all of the industry-validated state standards and measurement criteria for this program in the design and delivery of the following recommended sequence of courses.

52.0800.10 **Introduction to Business and Financial Services:** Students enrolled in this course will receive instruction in a variety of customer services provided by banks, insurance agencies, investment brokers, credit unions and related enterprises. General knowledge of budgeting and credit management are outcomes of this course. A computer with business applications software is used by students to perform business and finance related tasks.

-and-

52.0800.20 **Advanced Financial Services:** Students enrolled in this course will receive instruction in principles of economics and accounting, financial instruments, economic and monetary systems. The outcomes of this course are integrated into learning experiences allowing students to demonstrate their knowledge and skills in the full range of Financial Services State standards through projects and simulations. A computer with business applications software is used by students to perform basic financial management tasks.

And program may elect to add:

52.0800.75 **Financial Services - Internship:** This course provides students an opportunity to apply previously developed financial services knowledge and skills while participating in a structured work experience. Students may be paid or unpaid for their work experience.

-or-

52.0800.80

Financial Services - Cooperative Education: This course is designed to provide students with both school-based and work-based learning. Training plans and training agreements are based on previously developed financial services knowledge and skills. Students generally work a minimum of 15 hours a week.

PROGRAM: Fire Service

**PROGRAM
CIP CODE:** 43.0200.00

DESCRIPTION: The **Fire Service** program prepares students to perform technical services involved with planning, organizing, researching, directing and controlling functions and processes related to the provision of Fire Service. An integrated approach to teaching and learning is provided as students develop interpersonal relations, career development skills and technical knowledge, and skills associated with careers in this field. Students completing this program will be prepared to participate in teams, solve problems, think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All of the Career Preparation state-designated Fire Service standards are addressed in this instructional sequence.

43.0200.10 **Fundamentals of Fire Service:** This course introduces students to careers in Fire Service and prepares students to apply academic, employability and technical knowledge and skills related to common industry standards and practices of Fire Service.

-and-

43.0200.20 **Fire Service - Advanced Applications:** This course prepares students to apply advanced academic and technical knowledge and skills in a variety of settings within Fire Service.

43.0200.75 **Fire Service - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific option they have studied. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

43.0200.80 **Fire Service - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific option they have studied.

PROGRAM: Food Products and Processing Systems - Agricultural Business Management

**PROGRAM
CIP CODE:** 01.0100.20

DESCRIPTION: The **Food Products and Processing Systems - Agricultural Business Management** program is designed to prepare students for employment in the Agriculture, Food and Natural Resources career cluster as defined by the USDE Office of Vocational and Adult Education. Students completing this program will possess the appropriate cluster technical knowledge and skills associated with the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, applied academic, and life management skills. The program utilizes a delivery system made up of three essential and required components: formal instruction, experiential education through Supervised Agricultural Experiences (SAE), leadership and personal development through the Career and Technical Student Organization, FFA. A model for this delivery system appears in the approved Curriculum Framework booklet.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Agricultural Business Management - Agriscience standards are addressed in this instructional sequence.

01.0100.10 **Agricultural Business Management - Introduction to Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.12 **Agricultural Business Management - Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.14 **Agricultural Business Management - Agriscience:** These Standards are designed to deliver the lab science standards associated with the Agriculture, Food and Natural Resources career cluster. Lab science credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is recommended that these standards be covered in course sequences during the 10th through 12th grades. This specific course is the 11th grade course.

-and-

01.0100.20 **Food Products and Processing Systems:** Prepares students for careers in food processing and preserving, packaging, distribution, government monitoring & regulation.

And program may elect to add:

01.0100.75 **Agricultural Business Management - Agriscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Agricultural Business Management - Agriscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid. This is part of the student's SAE component.

-or-

01.0100.80 **Agricultural Business Management - Agriscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Agricultural Business Management - Agriscience program.

PROGRAM: Graphic /Web Design

**PROGRAM
CIP CODE:** 10.0200.30

DESCRIPTION: The **Graphic/Web Design** instructional program prepares the students to create two-dimensional printed works, or images using graphic design principles and elements as well as creating Web Designs which are a craft and sub-set of graphic design. Graphic designers work with drawn, painted, photographed, or computer-generated images, but they also design the letterforms that make up various typefaces found in movie credits and TV ads; in books, magazines, and menus; and even on computer screens. Graphic/Web Design is undertaken to convey a specific message(s) to a targeted audience, usually from a specific client. The students will learn to develop images and websites that inspire emotion and/or reaction. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Graphic/Web Design while also having a strong portfolio to support their knowledge and skill. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organizations are: FBLA (Future Business Leaders of America) or SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry validated skills for initial employment or continued related education. All the state-designated Communication Media Technologies Core Standards and Film & TV Technical Standards are addressed in this instructional sequence.

10.0200.10 **Communication Media Technologies Fundamentals.** This course is an introduction to technical skills and knowledge for one specific program area within CMT or a mixture of CMT program areas that are reflected at each school. The focus of the coursework will be in line with the specific industry(ies) that are available and relevant to the student's future plans for post-secondary and/or business & Industry. Instruction will include:

- Analyzing the media industry, business practices and its role in the economy.
- Investigating the Intellectual Property Law and Rights Management.
- Demonstrating verbal and nonverbal communication skills required by the media industry.
- Demonstrating written communication skills within the media industry.
- Utilizing computer applications to manage media.
- Applying knowledge of data capture and manipulation.

Two of the following Career Preparation Programs will be included as part of the instructional sequence for this program. These Standards are to be included in the instructional emphasis for the entire program for the option selected:

-and-

10.0200.30 **Graphic/Web Design I.** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Graphic/Web Design.

-and

10.0200.35 **Graphic/Web Design II.** This course will be the development of a portfolio with the following projects:

- Classroom
- School
- Community
- Business & Industry

Related to Graphic/Web Design.

-or-

10.0200.20 **Digital Printing I.** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Printing.

-or-

10.0200.40 **Journalism I.** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Journalism.

-or-

10.0200.50 **Digital Photography I.** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Photography.

10.0200.60 **Animation I.** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Animation.

-or-

10.0200.90 **Film & TV I.** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Film & TV.

-or-

10.0200.00 **Music & Audio Productions I.** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Music & Audio Productions.

And program may elect to add:

10.0200.75 **Communication Media Technologies- Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Interior Design and Merchandising program.

-or-

10.0200.80 **Communication Media Technologies- Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Heating, Ventilation and Air Conditioning

**PROGRAM
CIP CODE:** 47.0200.00

DESCRIPTION: The **Heating, Ventilation and Air Conditioning** program prepares students to apply technical knowledge and skills to repair, install, service and maintain the operating conditions of heating and air conditioning systems. Includes instruction in diagnostic techniques, the use of testing equipment and the principles of mechanics, electricity and electronics as they relate to the repair of heating and air conditioning systems. The Career and Technical Student Organization is SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

47.0200.10 **Heating, Ventilation and Air Conditioning I:** This course will prepare students to use a wide variety of tools and equipment and maintain a safe work environment. The student will develop an understanding of construction math, financial operations, reading blueprints, basic rigging and basic layout techniques. The student will develop skills in oral and written communication as they relate to the industry. This course is designed to help students develop an enhanced understanding of teamwork, employability skills and career opportunities in the field.

-and-

47.0200.20 **Heating, Ventilation and Air Conditioning II:** This course prepares the individual to apply and demonstrate advanced technical knowledge and skills in the industry. This lab based course will provide the students an opportunity to participate in the planning, design and completion of project based activities.

And program may elect to add:

47.0200.75 **Heating, Ventilation and Air Conditioning - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Heating, Ventilation and Air Conditioning knowledge and skills.

-or-

47.0200.80 **Heating, Ventilation and Air Conditioning - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences, directly related to the standards identified for the Heating, Ventilation and Air Conditioning program.

PROGRAM: Heavy Equipment Operations

**PROGRAM
CIP CODE:** 49.0200.00

DESCRIPTION: The **Heavy Equipment Operations** program prepares students to apply technical knowledge and skills to operate and maintain a variety of heavy equipment such as a crawler tractor, motor graders and scrapers, shovels, rigging devices, hoists, and jacks. Includes instruction in digging, ditching, sloping, stripping, grading and backfilling, clearing and excavating. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

49.0200.10 **Heavy Equipment Operations I:** This foundation course will prepare students to use a wide variety of construction tools and equipment and maintain a safe work environment. The student will develop an understanding of construction math, financial operations, reading blueprints, basic rigging and basic construction techniques. The student will develop skills in oral and written communication as they relate to the construction industry. This course is designed to help students develop an enhanced understanding of teamwork, employability skills and career opportunities in the construction field.

-and-

49.0200.20 **Heavy Equipment Operations II:** This course prepares the individual to apply and demonstrate advanced technical knowledge and skills in various types of construction. This lab based course will provide the students an opportunity to participate in the planning, design and completion of project based activities.

And program may elect to add:

49.0200.75 **Heavy Equipment Operations - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Heavy Equipment Operations knowledge and skills.

-or-

49.0200.80 **Heavy Equipment Operations - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences, directly related to the standards identified for the Heavy Equipment Operations program.

PROGRAM: Heavy / Industrial Equipment Maintenance Technologies

**PROGRAM
CIP CODE:** 47.0300.00

DESCRIPTION: The Heavy / Industrial Equipment Maintenance Technologies program description and certification requirements are under development.

Questions: Jan Brite
Director of Career Pathways Team
602-542-4365
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RECOMMENDED PROGRAM SEQUENCE OF COURSES:

47.0300.10 Heavy / Industrial Equipment Maintenance Tech Core Curriculum: This course is under development.

-and-

47.0300.20 Heavy / Industrial Equipment Maintenance Tech I: This course is under development.

-and-

47.0300.25 Heavy / Industrial Equipment Maintenance Tech II: This course is under development.

And program may elect to add:

47.0300.75 Heavy / Industrial Equipment Maintenance Tech - Internship: This course is under development.

-or-

47.0300.80 Heavy / Industrial Equipment Maintenance Tech - Cooperative Education: This course is under development.

PROGRAM: Hospitality Management

**PROGRAM
CIP CODE:** 52.0900.00

DESCRIPTION: The **Hospitality Management** program is designed to prepare students for employment in positions that provide customer-focused services in such facilities as hotels, resorts, convention centers, National parks, travel agencies and cruise lines. A student completing this program will possess the knowledge and skills associated with reservations and front desk operations, meeting and banquet room support services, food and beverage support services, housekeeping, laundry operations, supervisory functions, and environmental functions. In addition to these skills, students will develop advanced employability skills including critical and conceptual thinking, communications, applied academics and technology. This program utilizes a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience, and the Career and Technical Student Organizations, FCCLA and DECA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes a recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All of the state-designated Hospitality Management standards are addressed in this instructional sequence.

52.0900.10 **Fundamentals of Hospitality Management:** This course prepares students for occupations in a variety of hospitality services and facilities including: hotels, resorts, convention centers, National parks, travel agencies and cruise lines. The course focuses on principles of operations in the travel and tourism industries, hotel and lodging facilities, food services, recreation, hospitality planning, and business operations. Emphasis is placed on critical thinking, practical problem solving, and entrepreneurship opportunities within the field of hospitality. Core academic application of math, science, and language arts are emphasized as appropriate in the hospitality industry.

-and-

52.0900.20 **Hospitality Management Applications:** The outcomes of this course are integrated into learning projects and simulations to demonstrate the full range of Hospitality Management standards. Work-based learning activities such as internships, school-based enterprises, or job shadowing are considered a component of Hospitality Management application activities. This course provides the opportunity for real-life application of core academic content.

And program may elect to add:

52.0900.75 **Hospitality Management - Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience. The work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Hospitality Management program.

-or-

52.0900.80

Hospitality Management - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Hospitality Management program. The core academic principles of math, science, and language arts are emphasized as applicable to skills necessary in the hospitality industry.

PROGRAM: Industrial Electrician

**PROGRAM
CIP CODE:** 46.0300.30

DESCRIPTION: The **Industrial Electrician** program prepares individuals to apply technical knowledge and skills to install indoor and outdoor commercial and industrial electrical systems and associated power transmission lines. Includes instruction in electricity, safety procedures, wiring, insulation and grounding, schematic blueprint interpretation, equipment operation and maintenance, and applicable codes and standards. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

46.0300.10 **Electrical Fundamentals:** This foundation course will prepare students to use a wide variety of tools and equipment and maintain a safe work environment. The student will develop an understanding of construction math, reading blueprints, install, operate, repair electric apparatus and systems such as residential, commercial and industrial electric power wiring; DC and AC motors controls, electrical distribution panels, and techniques. The student will develop skills in oral and written communication as they relate to the electrical industry. This course is designed to help students develop an enhanced understanding of teamwork, employability skills and career opportunities in the electrical field.

-and-

46.0300.30 **Industrial Electrician:** This course prepares the individual to apply and demonstrate advanced technical knowledge and skills. This lab based course will provide the students an opportunity to participate in maintaining and repairing local, long distance and rural electric power cables and communication lines, erect and construct pole and tower lines; install underground lines and cables, which will include installation and repair, fibre-optic technology, trenching, mobile equipment and crane operation, high voltage installations, maintenance and inspection, safety, remote communications, and applicable codes and standards. The planning, design and completion of project based activities. This course prepares students for advanced technical knowledge and skills using a variety of techniques and equipment.

And program may elect to add:

46.0300.75 **Electrical and Power Transmission Technology - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Electrical and Power Transmission Technology knowledge and skills.

-or-

46.0300.80

Electrical and Power Transmission Technology - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences, directly related to the standards identified for the Electrical and Power Transmission Technology program.

PROGRAM: Interior Design and Merchandising

**PROGRAM
CIP CODE:** 52.1900.30

DESCRIPTION: The **Interior Design and Merchandising** program is designed to prepare students for employment or advanced postsecondary coursework in applied sciences for design production, commercial or home furnishings sales, custom interior design, supervisory positions in furnishings manufacturing, and as buyers for retail establishments. A student completing this program will possess the technical knowledge and skills associated with interior design/production and selection, wholesale purchasing, sales, and promotion. In addition to technical skills, students completing this program will also develop advanced critical thinking, career development, applied academic skills, employability skills, basic business practices, and leadership skills required for entry into interior design and merchandising occupations. The program utilizes a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience and the Career and Technical Student Organization, FCCLA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation

The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All of the state-designated Interior Design and Merchandising standards are addressed in this instructional sequence.

52.1900.10 **Fundamentals of Design and Merchandising:** This course introduces students to the technical knowledge and skills associated with design principles, production, selection, marketing principles, display, purchase, sales, promotion, construction, textile science and business practices.

-and-

52.1900.30 **Interior Design and Merchandising Applications:** This course is designed for students to apply advanced occupational skills in interior design plans and drawings, furnishings and materials selection, marketing, display, purchasing, sales, promotion and business practices.

And program may elect to add:

52.1900.75 **Design and Merchandising - Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Interior Design and Merchandising program.

-or-

52.1900.80 **Design and Merchandising - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Journalism

**PROGRAM
CIP CODE:** 10.0200.40

DESCRIPTION: The **Journalism** instructional program prepares the students to collect, write, edit and present the news utilizing a variety of mediums i.e. newspaper, magazine, yearbook, blog, etc. Journalism is a form of writing that tells people about the things that really happened, but that they might not have known about already. People who write journalism are called "Journalists". They might work for newspapers, magazines, websites, TV or Radio. Journalists gather, analyze and disseminate socially relevant information in a consistent, transparent and honest way. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Journalism while also having a strong portfolio to support their knowledge and skill. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry validated skills for initial employment or continued related education. All the state-designated Communication Media Technologies Core Standards and Film & TV Technical Standards are addressed in this instructional sequence.

- 10.0200.10 **Communication Media Technologies Fundamentals:** This course is an introduction to technical skills and knowledge for one specific program area within CMT or a mixture of CMT program areas that are reflected at each school. The focus of the coursework will be in line with the specific industry(ies) that are available and relevant to the student's future plans for post-secondary and/or business & Industry. Instruction will include:
- Analyzing the media industry, business practices and its role in the economy.
 - Investigating the Intellectual Property Law and Rights Management.
 - Demonstrating verbal and nonverbal communication skills required by the media industry.
 - Demonstrating written communication skills within the media industry.
 - Utilizing computer applications to manage media.
 - Applying knowledge of data capture and manipulation.

Two of the following Career Preparation Programs will be included as part of the instructional sequence for this program. These Standards are to be included in the instructional emphasis for the entire program for the option selected:

-and-

- 10.0200.40 **Journalism I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Journalism.

-and

10.0200.45 **Journalism II:** This course will be the development of a portfolio with the following projects:

- Classroom
- School
- Community
- Business & Industry

related to Graphic/Web Design.

-or-

10.0200.20 **Digital Printing I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Printing.

-or-

10.0200.30 **Graphic/Web Design I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Graphic/Web Design.

-or-

10.0200.50 **Digital Photography I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Photography.

-or-

10.0200.60 **Animation I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Animation.

-or-

10.0200.90 **Film & TV I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Film & TV.

-or-

10.0200.00 **Music & Audio Productions I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Music & Audio Productions.

And program may elect to add:

10.0200.75 **Communication Media Technologies- Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Interior Design and Merchandising program.

-or-

10.0200.80

Communication Media Technologies- Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Laboratory Assisting

**PROGRAM
CIP CODE:** 51.0800.30

DESCRIPTION: The **Laboratory Assisting** instructional program prepares students to participate in teams, solve problems, think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience, leadership and personal development through the Career and Technical Student Organization known as HOSA (Health Occupations Students of America).

This program is designed to prepare high school students with foundations in knowledge and technical skill needed to help them to continue their education in the field of Laboratory Assisting by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education.

51.0800.10 **Fundamentals of Allied Health** : This course will teach students' the basic knowledge and skills needed for Laboratory Assisting in a clinical, medical or retail setting or to continue to postsecondary education.

-and-

51.0800.30 **Laboratory Assisting- Advanced Applications:** This course will enhance the students' knowledge and skills to continue their education for in becoming a Laboratory Assistant in a clinical, medical or retail setting or to continue to postsecondary education.
And program may elect to add:

51.0800.75 **Allied Health - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program they have studied. This work experience does not necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0800.80 **Allied Health- Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program of studies.

PROGRAM: Law, Public Safety and Security

**PROGRAM
CIP CODE:** 43.0100.00

DESCRIPTION: The **Law, Public Safety and Security** instructional program prepares students to perform technical services involved with planning, organizing, researching, directing and controlling functions and processes related to the provision of Law, Public Safety and Security services. An integrated approach to teaching and learning is provided as students develop interpersonal relations, career development skills and technical knowledge and skills associated with careers in this growing field. Students completing this program will be prepared to participate in teams, solve problems, think critically, and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, experiential learning, supervised occupational experience, and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All Career Preparation state-designated Law, Public Safety and Security standards are addressed in this instructional sequence.

43.0100.10 **Fundamentals of Law, Public Safety and Security:** This course introduces students to careers in Law, Public Safety and Security and prepares students to apply academic and technical knowledge and skills related to common industry standards and practices.

-and-

43.0100.20 **Law, Public Safety and Security - Advanced Applications:** This course prepares students to apply advanced academic and technical knowledge and skills to a variety of settings within Law, Public Safety and Security.

And program may elect to add:

43.0100.75 **Law, Public Safety & Security - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program they have studied. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

43.0100.80 **Law, Public Safety and Security - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program of studies.

PROGRAM: Mechanical Drafting

PROGRAM CIP CODE: 15.1300.40

DESCRIPTION: The **Mechanical Drafting** program is designed to prepare students to apply technical skills via computer assisted design and drafting to create two-dimensional and three-dimensional engineering designs using BIM (Building Information Models) type programs. It includes instruction in specification interpretation, dimensioning techniques, drafting calculations, material estimation, technical communications, and computer applications. In addition to the occupation related skills, students completing this program will develop advanced critical thinking, applied academics, interpersonal relations, life management, and business, economic, and leadership skills required for the 21st century workplace. The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience, and the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Drafting and Design Technologies standards are addressed in this instructional sequence.

15.1300.10 **Drafting and Design Technologies Fundamentals:** This course prepares students to apply technical knowledge and skills to plan and prepare scale interpretations of engineering, design and architectural projects. It includes instruction in creating layouts and designs, blueprints and renderings and in the use of computer-assisted design programs. In addition to knowledge of drafting technologies, students will have the opportunity to place special emphasis on more specific services and/or industries in which they have an interest.

-and-

15.1300.40 **Mechanical Drafting:** This course prepares students to apply technical knowledge and skills to develop working drawings and electronic simulations in support of mechanical and industrial engineers. Includes instruction in manufacturing materials and processes, mechanical drafting, basic metallurgy, geometric dimensioning and tolerance, blueprint reading and technical communications.

And program may elect to add:

15.1300.75 **Drafting and Design Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience, that can be either paid or unpaid and does not necessarily require classroom instruction, that involves the application of previously developed Drafting and Design Technologies knowledge and skills.

-or-

15.1300.80 **Drafting and Design Technologies - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Drafting and Design Technologies program.

PROGRAM: Medical Assisting Services

**PROGRAM
CIP CODE:** 51.0800.60

DESCRIPTION: The **Medical Assisting Services** program prepares students to participate in teams, solve problems, think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience, leadership and personal development through the Career and Technical Student Organization known as HOSA (Health Occupations Students of America).

This program is designed to prepare high school students with foundations in knowledge and technical skill needed to help them to continue their education in the field of Medical Assisting Services by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation

The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education.

51.0800.10 **Fundamentals of Allied Health:** This course will teach students' the basic knowledge and skills needed for Medical Assisting Services in a clinical, medical or retail setting or to continue to postsecondary education.

-and-

51.0800.60 **Medical Assisting Services -Advanced Applications:** This course will enhance the students' knowledge and skills to continue their education in Medical Assisting Services in a clinical, medical or retail setting or to continue to postsecondary education.

And program may elect to add:

51.0800.75 **Allied Health - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program they have studied. This work experience does not necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0800.80 **Allied Health - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program of studies.

PROGRAM: Medical Imaging and Support Services

**PROGRAM
CIP CODE:** 51.0800.40

DESCRIPTION: The **Medical Imaging and Support Services** instructional program prepares students to participate in teams, solve problems, think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience, leadership and personal development through the Career and Technical Student Organization known as HOSA (Health Occupations Students of America).

This program is designed to prepare high school students with foundations in knowledge and technical skill needed to help them to continue their education in the field of Medical Imaging and Support Services by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education.

51.0800.10 **Fundamentals of Allied Health:** This course will teach students' the basic knowledge and skills needed for Medical Imaging and Support Services in a clinical, medical or retail setting or to continue to postsecondary education.

-and-

51.0800.40 **Medical Imaging and Support Services- Advanced Applications:** This course will enhance the students' knowledge and skills to continue their education for Medical Imaging and Support Services in a clinical, medical or retail setting or to continue to postsecondary education

And program may elect to add:

51.0800.75 **Allied Health- Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program they have studied. This work experience does not necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0800.80 **Allied Health - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program of studies.

PROGRAM: Mental and Social Health Services

**PROGRAM
CIP CODE:** 51.1500.00

DESCRIPTION: The **Mental and Social Health Services** program prepares students to participate in teams, solve problems, think critically and implement effective solutions. The program will be designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised clinical experience, leadership and personal development through the Career and Technical Student Organization, HOSA.

This program will be designed to prepare high school students with the foundations in knowledge and technical skills needed to help prepare them to continue their education by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses yet to be developed that will help prepare students to successfully complete a postsecondary program in mental and social health services.

51.1500.10 **Fundamentals of Mental and Social Health Services:** This course, when developed, will help prepare students to continue their education toward becoming Mental and Social Health Services personnel by completing an appropriate postsecondary program.

-and-

51.1500.20 **Mental and Social Health Services - Advanced Applications:** This course, when developed, will help prepare students to continue their education toward becoming Mental and Social Health Services personnel by completing an appropriate postsecondary program.

And program may elect to add:

51.1500.75 **Mental and Social Health Services - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program they have studied. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.1500.80 **Mental and Social Health Services - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program they have studied.

PROGRAM: Music / Audio Production

PROGRAM CIP CODE: 10.0200.00

DESCRIPTION: The **Music / Audio Productions** instructional program prepares the students to work in the new world of music and audio production, which is now computer-oriented and drives today's business of sound. The students will be concerned with the recording, manipulation, mixing and reproduction of sound. They will creatively use technologies to produce sound for film, radio, television, music, electronic products and computer games. This field concerns the creative and practical aspects of sounds including speech and music. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills, Workplace Employability Skills and technical knowledge and skills. Students completing this program will be prepared to enter the workforce and/or Post-secondary where they will be able to apply the skills necessary to be in Music & Audio Productions while also having a strong portfolio to support their knowledge and skill. The program is designed and delivered as a coherent sequence of school-based and work-based supervised learning. Students learn leadership skills and develop their leadership abilities through participation in the state-recognized Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry validated skills for initial employment or continued related education. All the state-designated Communication Media Technologies Core Standards and Film & TV Technical Standards are addressed in this instructional sequence.

- 10.0200.10 **Communication Media Technologies Fundamentals:** This course is an introduction to technical skills and knowledge for one specific program area within CMT or a mixture of CMT program areas that are reflected at each school. The focus of the coursework will be in line with the specific industry(ies) that are available and relevant to the student's future plans for post-secondary and/or business & Industry. Instruction will include:
- Analyzing the media industry, business practices and its role in the economy.
 - Investigating the Intellectual Property Law and Rights Management.
 - Demonstrating verbal and nonverbal communication skills required by the media industry.
 - Demonstrating written communication skills within the media industry.
 - Utilizing computer applications to manage media.
 - Applying knowledge of data capture and manipulation.

Two of the following Career Preparation Programs will be included as part of the instructional sequence for this program. These Standards are to be included in the instructional emphasis for the entire program for the option selected:

-and-

- 10.0200.00 **Music / Audio Productions I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Music & Audio Productions.

-and

10.0200.05 **Music / Production II:** This course will be the development of a portfolio with the following projects:

- Classroom
- School
- Community
- Business & Industry

related to Music & Production.

-or-

10.0200.20 **Digital Printing I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Printing.

-or-

10.0200.30 **Graphic / Web Design I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Graphic/Web Design.

-or-

10.0200.40 **Journalism I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Journalism.

-or-

10.0200.50 **Digital Photography I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Digital Photography.

-or-

10.0200.60 **Animation I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Animation.

-or-

10.0200.90 **Film & TV I:** This course will prepare the student to integrate pre-production, production, post-production, Deliver/Distribute, Quality Assurance, and Presentation phases of Film & TV.

And program may elect to add:

10.0200.75 **Communication Media Technologies- Internship:** This course provides students an opportunity to apply previously developed knowledge and skills into a structured work experience within the specific option they have studied. This work experience may or may not require classroom instruction, may be paid or unpaid, and is available for 12th graders who have completed at least one Carnegie unit of study in the Interior Design and Merchandising program.

-or-

10.0200.80

Communication Media Technologies- Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Design and Merchandising program option.

PROGRAM: Natural Renewable Resources Systems - Agricultural Business Management

PROGRAM CIP CODE: 01.0100.50

DESCRIPTION: The **Natural Renewable Resources Systems - Agricultural Business Management** program is designed to prepare students for employment in the Agriculture, Food and Natural Resources career cluster as defined by the USDE Office of Vocational and Adult Education. Students completing this program will possess the appropriate cluster technical knowledge and skills associated with the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, applied academic, and life management skills. The program utilizes a delivery system made up of three essential and required components: formal instruction, experiential education through Supervised Agricultural Experiences (SAE), leadership and personal development through the Career and Technical Student Organization, FFA. A model for this delivery system appears in the approved Curriculum Framework booklet.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Agricultural Business Management - Agriscience standards are addressed in this instructional sequence.

01.0100.10 **Agricultural Business Management - Introduction to Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.12 **Agricultural Business Management - Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.14 **Agricultural Business Management - Agriscience:** These Standards are designed to deliver the lab science standards associated with the Agriculture, Food and Natural Resources career cluster. Lab science credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is recommended that these standards be covered in course sequences during the 10th through 12th grades. This specific course is the 11th grade course.

-and-

01.0100.50 **Natural Resources Systems:** Prepares students for careers in Habitat Conservation, Forest Products, Parks and Recreation, Mining, Environmental Services, Fisheries, Soil Conservation, etc.

And program may elect to add:

01.0100.75 **Agricultural Business Management - Agriscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Agricultural Business Management - Agriscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid. This is part of the student's SAE component.

-or-

01.0100.80 **Agricultural Business Management - Agriscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Agricultural Business Management - Agriscience program.

PROGRAM: Network Technologies

**PROGRAM
CIP CODE:** 15.1200.30

DESCRIPTION: The **Network Technologies** program is designed to prepare students for employment/postsecondary education related to the design, development, installation, implementation, use and management of computers and networks. The program prepares students for employment in various positions such as Hardware Technician/Engineer, Help Desk Technician/Manager, Information Architect, IT Designer, Network Administrator/Analyst/Technician, PC Technician, Program Analyst Systems Analyst, Systems Operations Specialist, Technical Sales Representative, Technical Support Technician/Manager, Training Manager, and Wireless Network Specialist.

An integrated approach of teaching and learning is provided as students enhance their technical knowledge and skills that are associated with functions within Network Technologies occupations. In addition to the occupation related skills, students completing this program will also develop advanced critical thinking, applied academic, interpersonal relations, life management, business, economic, and leadership skills. as well as, required workplace employability skills.

The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experiences, and the Career and Technical Student Organization, FBLA and/or SkillUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation

The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Network Technologies standards are addressed in this instructional sequence.

15.1200.10 **Information Technologies Fundamentals:** This course introduces principles of computers with an emphasis on basic concepts of computer maintenance, network technologies, software development and web page development. While also providing an understanding of the IT industry, computer mathematics and the evolution of the computer.

-and-

15.1200.30 **Network Technologies:** This course prepares students to apply technical knowledge and skills to install, configure and troubleshoot basic networking hardware, protocols, and services. This course will offer the skills necessary to competently perform in the industrial environment, as well as pass the necessary exams to obtain certification.

And program may elect to add:

15.1200.75 **Information Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Information Technologies knowledge and skills.

-or-

15.1200.80

Information Technologies - Cooperative Education: This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Information Technologies program.

PROGRAM: Nursing Services

**PROGRAM
CIP CODE:** 51.3900.00

DESCRIPTION: The **Nursing Services** instructional program prepares students to perform technical services involved with planning, organizing, researching, directing and controlling functions and processes related to the provision of nursing assisting services. The Arizona State Board of Nursing must approve Nursing Assistant Training programs and the licensed Registered Nurse as the instructor. An integrated approach to teaching and learning is provided as students develop interpersonal relations, career development skills and technical knowledge and skills associated with nursing assisting and the pathway into other careers in nursing. Students completing this program will have the opportunity to take the Arizona examination to become a Certified Nursing Assistant (I), and be prepared to participate in teams, solve problems, think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization known as HOSA (Health Occupations Students of America).

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Nursing Services standards are addressed in this instructional sequence and must be taught by the AZ State Board of Nursing approved training site program Registered Nurse.

51.3900.10 **Fundamentals of Nursing Services:** This course prepares students to apply academic, employability and technical knowledge and skills related to common industry standards and practices of nursing assisting within the nursing profession.

-and-

51.3900.20 **Nursing Services - Advanced Applications:** This course prepares students to apply advanced academic and technical knowledge and skills related to nursing assisting in a variety of settings within the nursing profession.
And program may elect to add:

51.3900.75 **Nursing Services - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program they have studied. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.3900.80 **Nursing Services - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program of studies.

PROGRAM: Pharmacy Support Services

PROGRAM CIP CODE: 51.0800.20

DESCRIPTION: The **Pharmacy Support Services** instructional program prepares students to participate in teams, solve problems, think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience, leadership and personal development through the Career and Technical Student Organization known as HOSA (Health Occupations Students of America).

This program is designed to prepare high school students with foundations in knowledge and technical skill needed to help them to continue their education in pharmacy support by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education.

51.0800.10 **Fundamentals of Allied Health:** This course will teach students' the basic knowledge and skills needed for a Pharmacy Technician in a clinical, medical or retail setting or to continue to postsecondary education.

-and-

51.0800.20 **Pharmacy Support Services- Advanced Applications:** This course will enhance the students' knowledge and skills to continue their education for in becoming a Pharmacy Technician in a clinical, medical or retail setting or to continue to postsecondary education.

And program may elect to add:

51.0800.75 **Allied Health- Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program they have studied. This work experience does not necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0800.80 **Allied Health - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program of studies.

PROGRAM: Plant Systems - Agricultural Business Management

PROGRAM CIP CODE: 01.0100.30

DESCRIPTION: The **Plant Systems - Agricultural Business Management** program is designed to prepare students for employment in the Agriculture, Food and Natural Resources career cluster as defined by the USDE Office of Vocational and Adult Education. Students completing this program will possess the appropriate cluster technical knowledge and skills associated with the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, applied academic, and life management skills. The program utilizes a delivery system made up of three essential and required components: formal instruction, experiential education through Supervised Agricultural Experiences (SAE), leadership and personal development through the Career and Technical Student Organization, FFA. A model for this delivery system appears in the approved Curriculum Framework booklet.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Agricultural Business Management - Agriscience standards are addressed in this instructional sequence.

01.0100.10 **Agricultural Business Management - Introduction to Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.12 **Agricultural Business Management - Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.14 **Agricultural Business Management - Agriscience:** These Standards are designed to deliver the lab science standards associated with the Agriculture, Food and Natural Resources career cluster. Lab science credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is recommended that these standards be covered in course sequences during the 10th through 12th grades. This specific course is the 11th grade course.

-and-

01.0100.30 **Plant Systems:** Prepares students for careers in Agronomic, Horticulture, Forestry, Turf, Viticulture, Soils, etc.

And program may elect to add:

01.0100.75 **Agricultural Business Management - Agriscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Agricultural Business Management - Agriscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid. This is part of the student's SAE component.

-or-

01.0100.80 **Agricultural Business Management - Agriscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Agricultural Business Management - Agriscience program.

PROGRAM: Power, Structural, and technical Systems –
Agricultural Business Management

**PROGRAM
CIP CODE:** 01.0100.60

DESCRIPTION: The **Agricultural Business Management - Agriscience** program is designed to prepare students for employment in the Agriculture, Food and Natural Resources career cluster as defined by the USDE Office of Vocational and Adult Education. Students completing this program will possess the appropriate cluster technical knowledge and skills associated with the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources. In addition to the required technical skills, students will also develop leadership, advanced employability, critical thinking, applied academic, and life management skills. The program utilizes a delivery system made up of three essential and required components: formal instruction, experiential education through Supervised Agricultural Experiences (SAE), leadership and personal development through the Career and Technical Student Organization, FFA. A model for this delivery system appears in the approved Curriculum Framework booklet.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended Career Preparation courses developed from industry-validated skills for initial employment or continued related education. All the state-designated Agricultural Business Management - Agriscience standards are addressed in this instructional sequence.

01.0100.10 **Agricultural Business Management - Introduction to Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.12 **Agricultural Business Management - Applied Biological Systems:** Students must attain these Standards in a coherent sequence of courses 01.0100.10 and 01.0100.12. Biology credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is required that these standards are covered in a two-course sequence during the 9th and 10th grades.

-and-

01.0100.14 **Agricultural Business Management - Agriscience:** These Standards are designed to deliver the lab science standards associated with the Agriculture, Food and Natural Resources career cluster. Lab science credit for college entrance and secondary graduation is available if these standards are met and a Program Review has been completed. It is recommended that these standards be covered in course sequences during the 10th through 12th grades. This specific course is the 11th grade course.

-and-

01.0100.60 **Power, Structural and Technical Systems:** Power, Structures, Controls, Geospatial Technology, Computer Systems, Electronics, Hydraulics, Pneumatics, etc.

And program may elect to add:

01.0100.75 **Agricultural Business Management - Agriscience - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill in Agricultural Business Management - Agriscience into a structured work experience within the same field of study. This work experience doesn't necessarily require classroom instruction and may be paid or unpaid. This is part of the student's SAE component.

-or-

01.0100.80 **Agricultural Business Management - Agriscience - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Agricultural Business Management - Agriscience program.

PROGRAM: Precision Machining

**PROGRAM
CIP CODE:** 48.0500.30

DESCRIPTION: The **Precision Machining** program is designed to introduce students to basic precision manufacturing principals and technical skills. Students will be prepared in the following instructional areas: manufacturing systems, production planning and quality control, documentation, technical problem-solving, management information systems, predictive/preventive maintenance and automated manufacturing. Students will have the opportunity to earn an industry recognized Industry recognized certifications such as NIMS level 1 certification. The program is comprised of two core courses and a course in Precision Machining. The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experience, and the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

48.0500.10 **Fundamentals of Precision Manufacturing:** This course includes units of instruction in computer control and power systems used in manufacturing. Units also include set up and change-over techniques, using industrial instruments and utilizing technical skills. Instruction also includes careers opportunities in manufacturing, communications skills, work-based learning experiences, teamwork, safety, creative thinking and problem solving.

-and-

48.0500.12 **Applications of Precision Manufacturing:** This course includes units of instruction in computer control and power systems used in manufacturing. Units also include set up and change-over techniques, using industrial instruments and utilizing technical skills. Instruction also includes careers opportunities in manufacturing, communications skills, work-based learning experiences, teamwork, safety, creative thinking and problem solving.

-or-

48.0500.30 **Precision Machining:** In this course students develop a clear understanding of mechanical systems including engines, pumps, medical devices; as well as the need for highly accurate parts via modern CAD-CAM systems to produce 3-D developed components. Students will learn how tighter tolerances require ultrahigh precision machining to be competitive in the aerospace industry. Students will have the opportunity to earn an industry recognized certificate verifying the student's practice of machine geometry, motion control and machining strategy.

And program may elect to add:

48.0500.75 **Precision Manufacturing - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Precision Manufacturing knowledge and skills.

-or-

48.0500.80

Precision Manufacturing - Cooperative Education: This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Precision Manufacturing program.

PROGRAM: Professional Sales and Marketing

**PROGRAM
CIP CODE:** 52.1800.20

DESCRIPTION: The **Professional Sales and Marketing** program is designed to prepare students for employment in various sales, customer service, first-line supervisory positions, sports marketing, hospitality and tourism, small business ownership, advertising/promotion, public relations and/or postsecondary education related to the field of Professional Sales and Marketing,

An integrated approach of teaching and learning is provided as students enhance their technical knowledge and skills that are associated with functions within Professional Sales and Marketing. In addition to the occupation related skills, students completing this program will also develop advanced critical thinking, applied academics such as math and language arts, interpersonal relations, life management, business, economic, and leadership skills required for the 21st century workplace.

The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experiences, and the Career and Technical Student Organization, DECA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Professional Sales and Marketing standards are addressed in this instructional sequence.

52.1800.10 **Marketing, Management and Entrepreneurship Fundamentals:** This course is designed to introduce the students to basic marketing concepts and principles as they relate to Professional Sales and Marketing, Advertising and Public Relations, Entertainment Marketing and Entrepreneurship.

-and-

52.1800.20 **Professional Sales and Marketing:** This course prepares students to perform marketing functions and tasks as they relate to selling and retailing. (This code is appropriate for courses utilizing a marketing lab/student-operated store.)

And program may elect to add:

52.1800.75 **Marketing, Management and Entrepreneurship - Internship:** This course provides MME students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed MME knowledge and skills. However, the Internship does require applications directly related to the Technical Standards of the Marketing, Management and Entrepreneurship program.

-or-

52.1800.80

Marketing, Management and Entrepreneurship - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the Technical Standards identified for the Marketing, Management, and Entrepreneurship program. Students generally work a minimum of 15 hours per week.

PROGRAM: Residential Electrician

**PROGRAM
CIP CODE:** 46.0300.20

DESCRIPTION: The **Residential Electrician** program prepares individuals to apply technical knowledge and skills to install indoor and outdoor residential, electrical systems and associated power transmission lines. Includes instruction in electricity, safety procedures, wiring, insulation and grounding, schematic blueprint interpretation, equipment operation and maintenance, and applicable codes and standards. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

46.0300.10 **Electrical Fundamentals:** This foundation course will prepare students to use a wide variety of tools and equipment and maintain a safe work environment. The student will develop an understanding of construction math, reading blueprints, install, operate, repair electric apparatus and systems such as residential, commercial and industrial electric power wiring; DC and AC motors controls, electrical distribution panels, and techniques. The student will develop skills in oral and written communication as they relate to the electrical industry. This course is designed to help students develop an enhanced understanding of teamwork, employability skills and career opportunities in the electrical field.

-and-

46.0300.20 **Residential Electrician:** This course prepares the individual to apply and demonstrate advanced technical knowledge and skills to install, operate, maintain and repair electrical apparatus and systems such as residential electric power wiring; AC and DC motors, controls and electrical distribution panels. Includes instruction in principles of electronics and electrical systems, wiring, power transmission, safety, job estimation, electrical testing and inspection and applicable codes and standards.

And program may elect to add:

46.0300.75 **Electrical and Power Transmission Technology - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Electrical and Power Transmission Technology knowledge and skills.

-or-

46.0300.80

Electrical and Power Transmission Technology - Cooperative Education: This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences, directly related to the standards identified for the Electrical and Power Transmission Technology program.

PROGRAM: Respiratory Therapy Technician

**PROGRAM
CIP CODE:** 51.0900.20

DESCRIPTION: **Respiratory Therapy Technician:** Students completing this program will be prepared to participate in teams, solve problems, think critically and implement effective solutions. The program will be designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience, leadership and personal development through the Career and Technical Student Organization, HOSA.

This program is designed to prepare high school students with a foundation in knowledge and technical skills needed to help prepare them to continue their education toward Respiratory Therapy Technician by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes a recommended sequence of courses. At least two Carnegie Units will be earned in the Career Preparation sequence of courses.

51.0900.20 **Fundamentals of Respiratory Therapy Technician:** This course will teach students the basic knowledge and skills needed toward becoming a Respiratory Therapy Technician by completing an appropriate postsecondary program.

-and-

51.0900.25 **Respiratory Therapy Technician - Applications:** This course will enhance the students' knowledge and skills to continue their education toward becoming a Respiratory Therapy Technician by completing an appropriate postsecondary program.

And program may elect to add:

51.0900.75 **Respiratory Therapy Technician - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific option they have studied. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0900.80 **Respiratory Therapy Technician - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific option they have studied.

PROGRAM: Software Development

**PROGRAM
CIP CODE:** 15.1200.40

DESCRIPTION: The **Software Development** program is designed to prepare students for employment/postsecondary education related to the design, development, installation, implementation, use and management of computers. The program prepares students for employment in various positions such as Help Desk Technican/Manager, Information Architect, IT Designer, PC Technician, Program Analyst Systems Analyst, Systems Operations Specialist, Technical Sales Representative, Technical Support Technican/Manager.

An integrated approach of teaching and learning is provided as students enhance their technical knowledge and skills that are associated with functions within Software Development occupations. In addition to the occupation related skills, students completing this program will also develop advanced critical thinking, applied academic, interpersonal relations, life management, business, economic, and leadership skills. as well as, required workplace employability skills.

The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experiences, and the Career and Technical Student Organization, FBLA and/or SkillUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Software Development standards are addressed in this instructional sequence.

15.1200.10 **Information Technologies Fundamentals:** This course introduces principles of computers with an emphasis on basic concepts of computer maintenance, network technologies, software development and web page development. While also providing an understanding of the IT industry, computer mathematics and the evolution of the computer.

-and-

15.1200.40 **Software Development:** This course prepares students to apply software theory and programming methods to the solutions of business data problems. This course will offer the skills necessary to competently perform in the industrial environment, as well as pass the necessary exams to obtain certification.

And program may elect to add:

15.1200.75 **Information Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Information Technologies knowledge and skills.

-or-

15.1200.80

Information Technologies - Cooperative Education: This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Information Technologies program.

PROGRAM: Sports Medicine and Rehabilitation Services

**PROGRAM
CIP CODE:** 51.0800.50

DESCRIPTION: The **Sports Medicine and Rehabilitation Services** program prepares students to participate in teams, solve problems, think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience, leadership and personal development through the Career and Technical Student Organization known as HOSA (Health Occupations Students of America).

This program is designed to prepare high school students with foundations in knowledge and technical skill needed to help them to continue their education in the field of Sports Medicine and Rehabilitation Services by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education.

51.0800.10 **Fundamentals of Sports Medicine and Rehabilitation Services:** This course will teach students' the basic knowledge and skills needed for Sports Medicine and Rehabilitation Services in a clinical, medical or retail setting or to continue to postsecondary education.

-and-

51.0800.50 **Sports Medicine and Rehabilitation Services -Advanced Applications:** This course will enhance the students' knowledge and skills to continue their education in Sports Medicine and Rehabilitation Services in a clinical, medical or retail setting or to continue to postsecondary education.
And program may elect to add:

51.0800.75 **Sports Medicine and Rehabilitation Services- Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program they have studied. This work experience does not necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0800.80 **Sports Medicine and Rehabilitation Services- Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific program of studies.

PROGRAM: Surgical Technician

**PROGRAM
CIP CODE:** 51.0900.40

DESCRIPTION: **Surgical Technician:** Students completing this program will be prepared to participate in teams, solve problems, think critically and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience, leadership and personal development through the Career and Technical Student Organization, HOSA.

This program is designed to prepare high school students with a foundation in knowledge and technical skills needed to help prepare them to continue their education toward becoming a Surgical Technician by successfully completing an appropriate postsecondary program. Affiliations with local community college programs can provide high school students with dual or concurrent credit that can be applied toward their postsecondary certificate or degree.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes a recommended sequence of courses. At least two Carnegie Units will be earned in the Career Preparation sequence of courses.

51.0900.40 **Fundamentals of Surgical Technician:** This course will teach students the basic knowledge and skills needed toward becoming a Surgical Technician by completing an appropriate postsecondary program.

-and-

51.0900.45 **Surgical Technician - Applications:** This course will enhance the students' knowledge and skills to continue their education toward becoming a Surgical Technician by completing an appropriate postsecondary program.

And program may elect to add:

51.0900.75 **Surgical Technician - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific option they have studied. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.0900.80 **Surgical Technician - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning identified for students within the specific option they have studied.

PROGRAM: Technical Theatre

**PROGRAM
CIP CODE:** 50.0500.20

DESCRIPTION: The **Technical Theatre** instructional program prepares students to participate in the technical and management areas of the performing arts and entertainment industry. In addition, students will possess the foundation skills needed for postsecondary studies in technical theatre. An integrated approach to teaching and learning is recommended as students develop interpersonal relations, career development skills and technical knowledge and skills associated with the performing arts and entertainment industry.

Leadership skills are developed through the state recognized Career and Technical Student Organizations, Skills USA. Technical Theatre students are also encouraged to be active members of the Arizona State Thespians.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education.

Technical Theatre pathway for students interested in helping place art on the stage.

50.0500.20 **Fundamentals of Performing Arts and Entertainment Industry - Technical Theatre:** This course prepares students to apply knowledge and skills to artistic, technical, and dramatic principles to communicate through theatrical methods. This program includes instruction in set design, lighting design, sound design and audio engineering, make-up design, scene painting, property management, production management, video design, costume design, technical direction and production, and digital applications.

A recommended pre-requisite of a fine arts class in theatre, music or dance is not funded through CTE.

-and-

50.0500.25 **Performing Arts and Entertainment Industry - Technical Theatre I:** Prepares individuals to manage the planning, design, preparation, and application of theatrical production as described above.

And program may elect to add:

50.0500.26 **Performing Arts and Entertainment Industry -Technical Theatre II:** This third optional course continues the work of Technical Theatre I, with students managing the planning, design, preparation and application of theatrical production as described above.

-and-

50.0500.35 **Performing Arts and Entertainment Industry - Arts Management I:** Prepares individuals to manage the planning, preparation, and application of arts management practices to performing arts and entertainment businesses as described above.

And program may elect to add:

50.0500.75 **Performing Arts and Entertainment Industry - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Performing Arts and Entertainment Industry knowledge and skills.

-or-

50.0500.80 **Performing Arts and Entertainment Industry - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based learning and supervised work-based learning experiences directly related to the standards for the Performing Arts and Entertainment Industry program.

PROGRAM: Therapeutic Massage

**PROGRAM
CIP CODE:** 51.3500.00

DESCRIPTION: The **Therapeutic Massage** instructional program prepares students to perform technical and clinical services involved with planning, organizing, researching, directing and controlling functions and processes related to the provision of therapeutic massage. An integrated approach to teaching and learning is provided as students develop interpersonal relations, career development skills and technical knowledge and skills associated with careers in this growing field. Students completing this program will be prepared to participate in teams, solve problems, think critically, and implement effective solutions. The program is designed and delivered as a coherent sequence of experiences using technical instruction, experiential learning, supervised clinical experience, and leadership and personal development through the Career and Technical Student Organization, HOSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended sequence of courses developed from industry-validated skills necessary for employment or continued related education.

51.3500.10 **Fundamentals of Therapeutic Massage:** This course prepares students to apply academic and technical knowledge and skill of the Therapeutic Masseuse in a clinical, medical or retail setting or to continue into postsecondary education.

-and-

51.3500.20 **Therapeutic Massage - Advanced Applications:** This course prepares students to apply academic, technical knowledge and skills of the Therapeutic Masseuse in a clinical, medical or retail setting or to continue into postsecondary education.

And program may elect to add:

51.3500.75 **Therapeutic Massage - Internship:** This course provides students an opportunity to apply previously developed knowledge and skill into a structured work experience within the specific program of study they have completed. This work experience doesn't necessarily require classroom instruction, may be paid or unpaid, and is available for 12th graders.

-or-

51.3500.80 **Therapeutic Massage - Cooperative Education:** This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for students within the specific program they have studied.

PROGRAM: Web Page Development

**PROGRAM
CIP CODE:** 15.1200.50

DESCRIPTION: The **Web Page Development** program is designed to prepare students for employment/postsecondary education related to the design, development, implementation, use and management of computers and websites. The program prepares students for employment in various positions such as Information Architect, IT Designer, Technical Sales Representative, Technical Support Technican/Manager, and web page developer.

An integrated approach of teaching and learning is provided as students enhance their technical knowledge and skills that are associated with functions within Web Page Development occupations. In addition to the occupation related skills, students completing this program will also develop advanced critical thinking, applied academic, interpersonal relations, life management, business, economic, and leadership skills. as well as, required workplace employability skills.

The program uses a delivery system made up of four integral parts: formal/technical instruction, experiential learning, supervised occupational experiences, and the Career and Technical Student Organization, FBLA and/or SkillUSA.

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation

The following describes the recommended sequence of courses developed from industry-validated skills necessary for initial employment or continued related education. All the Career Preparation state-designated Web Page Development standards are addressed in this instructional sequence.

15.1200.10 **Information Technologies Fundamentals:** This course introduces principles of computers with an emphasis on basic concepts of computer maintenance, network technologies, software development and web page development. While also providing an understanding of the IT industry, computer mathematics and the evolution of the computer.

-and-

15.1200.50 **Web Page Development:** This course prepares students to become familiar with the foundational and basic skills of Internet Technologies, writing code manually, using graphical user interface authoring tools and learning basic infrastructure networking. This course will offer the skills necessary to competently perform in the industrial I environment, as well as pass the necessary exams to obtain certification.

And program may elect to add:

15.1200.75 **Information Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can be either paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Information Technologies knowledge and skills.

-or-

15.1200.80

Information Technologies - Cooperative Education: This course utilizes cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Information Technologies program.

PROGRAM: Welding Technologies

**PROGRAM
CIP CODE:** 48.0508.00

DESCRIPTION: The **Welding Technologies** program is designed to prepare students for employment in the welding industry. The curriculum provides individuals with critical thinking, career development, life management, business, economic and leadership skills required for Welding Technologies occupations. Welding Technologies prepares individuals to apply technical knowledge and skills to join or cut metal surfaces. Includes instruction in arc welding, resistance welding, brazing and soldering, cutting, high-energy beam welding and cutting, solid state welding, ferrous and non-ferrous materials, oxidation-reduction reactions, welding metallurgy, welding processes and heat treating, structural design, safety, and applicable codes and standards. The program is designed and delivered as a coherent sequence of experiences using technical instruction, academic foundations, experiential learning, supervised occupational experience and leadership and personal development through the Career and Technical Student Organization, SkillsUSA

RECOMMENDED PROGRAM SEQUENCE OF COURSES:

Career Preparation The following describes the recommended courses developed from industry-validated skills necessary for initial employment or continued related education.

48.0508.10 **Welding Technologies Core Curriculum:** Instruction includes career planning, preparing for employment, work-based learning, oral and written communication skills, understanding the role of small businesses and financial management, workplace leadership styles and leadership development.

-and-

48.0508.20 **Welding Technologies:** Prepares individuals to apply basic technical knowledge and skills to join or cut metal surfaces. Includes instruction in blueprint reading, arc welding, brazing soldering, cutting, safety, and applicable codes and standards.

And program may elect to add:

48.0508.75 **Welding Technologies - Internship:** This course provides CTE students an opportunity to engage in learning through participation in a structured work experience that can either be paid or unpaid and does not necessarily require classroom instruction that involves the application of previously developed Welding Technologies knowledge and skills.

-or-

48.0508.80 **Welding Technologies - Cooperative Education:** This course utilizes a cooperative education methodology to combine school-based and supervised work-based learning experiences directly related to the standards identified for the Welding Technologies program.