

***** CAREER AND TECHNICAL EDUCATION *****

To comply with the changes in the State Board of Education (SBOE) Rules for Curriculum and the Commissioner's Rules, the Career and Technical Education (CTE) Department has endorsed the following provisions:

Prior to enrollment in a career preparation program, a student must show evidence of having successfully completed three courses or one and one-half credits in a career coherent sequence (career program of study) related to the career preparation program area in which the student wishes to participate.

According to the Texas Essential Knowledge And Skills, (TEKS) the majority of Career And Technical Education courses indicate "recommended" prerequisites. *Since funding is based on appropriate coherent sequence of courses (career program of study), a significant loss of funds may occur if prerequisites are not included as recommended by the Texas Education Agency.* If a school is unable to schedule appropriate course sequences, the Career & Technical Education department must be notified so that potential funding losses may be anticipated. Campuses choosing to change the recommended prerequisites and grade placement for Career & Technical Education courses must complete a waiver application.

The lack of coherent sequences in a student's career pathway can negatively impact a district's accreditation through an AEIS Indicator assessment. Sample coherent sequences of courses (career program of studies) have been distributed to each high school. Campus counselors should work with both academic and Career & Technical Education teachers to modify each of the career pathways to meet the needs of students pursuing specific career majors that reflect the particular campus course offerings.

All students, including women, members of minority groups, students with disabilities, disadvantaged students, and persons of limited English proficiency, shall have equal access to Career and Technical Education programs, services, and activities. Campuses wanting to add or delete Career and Technical Education courses must submit in writing these changes during the spring semester of each school year to the Career and Technical Education Department. **All Career and Technical Education courses must be approved for each campus by the Career and Technical Education Department.** Requests for courses to be offered must be selected from the TEA Code Table 22 Service IDs.

SCHEDULING

Students should not be scheduled into yearlong (one-credit or multiple-credit) Career and Technical courses at midterm. Students may enroll at midterm **only** if the campus is offering a special trailer course for students who failed the specific Career and Technical education courses. No student is to be assigned to a Level “II” course before the completion of a Level “I” course or a "B" course prior to an "A" course.

Multi-Level Course Offerings

Multi-level courses should not be offered in the same class period except for certain alternative educational settings without documented approval of the Career and Technical Education Department. For example, a Technology Education teacher may not teach Architectural Graphics IA and Technology Systems IA in the same period. Career Preparation teachers may not have first and second-year students in the same class without documented notification and approval from the Career and Technical Education Department. Approval is contingent on appropriate teacher certification.

In situations where a limited number of student requests does not justify a separate class, the teaching of two levels such as Automotive Technology I and Automotive Technology II is permissible as long as the curriculum for both courses is adequately covered and grades documented for each course.

All Career and Technical Career Preparation work-based learning experiences will substitute for Physical Education. (i.e., two or three-credits in a Career and Technical Education work-based training courses 19 TAC Chapter 74, Subchapter D 42.7.C)

Career & Technical Education for Students with Disabilities (CTED)

Transition from school to post-school activities and the inclusion of students with disabilities in Career and Technical Education is greatly impacted by the adoption of the TEKS.

Local districts are encouraged to include students with disabilities, when appropriate, into all Career and Technical Education courses. Accommodations as identified by the Admission, Review, and Dismissal (ARD) Committee should be made to facilitate student success. Students, whose disabilities, because of severity, prevent their being appropriately served in inclusive career and technical courses, even with documented modifications, may be served in specialized, self-contained Career and Technical Education for Students with Disabilities (CTED) courses. Course content, instruction, credit, and grade level, as approved by the SBOE, may be adjusted to accommodate the needs of students in specialized CTED per specifications of the ARD Committee. Because of this flexibility, separate courses for CTED were not developed. The school will use the regular PEIMS number designated for the course that is being taught in the CTED instructional arrangement. A local course catalog number will identify courses taught in a CTED instructional arrangement. Students with severe disabilities should not be placed in regular Career and Technical Education or CTED classes without going through the ARD process.

Students Identified as Educationally Disadvantaged

Students identified as educationally disadvantaged **in accordance with the provisions of the Carl D. Perkins Vocational Education Act (Public Law 101-392)**, limited English proficient, or at risk of not graduating from high school are eligible participants in Career and Technical programs when the requirements below are met. The definition of at-risk or not graduating from high school can be found in TEC §29.081.

- ◆ Assessment of career interest, aptitudes, and needs of each student with disabilities will be made prior to planning a Career and Technical Education program of study for the student.
- ◆ Students with disabilities will be served through the integration of academic and Career and Technical Education instruction to ensure that the concepts in both programs are taught.

WHAT ARE CAREER PATHWAYS?

Career Pathways are coherent, articulated sequenced of rigorous academic and career and technical courses commencing in the ninth grade and leading to an associate degree, baccalaureate degree and beyond; an industry recognized certificate, and/or licensure organized around sixteen career clusters defined by the Office of Vocational and Adult Education in 1999. These career clusters are grouped to organize the educational programs and curricula according to occupations and common knowledge and skills.

The sixteen Career Clusters that career pathways can be developed from are identified below:

| | |
|--|--|
| Agriculture, Food & Natural Resources | Architecture & Construction |
| Arts, A/V Technology & Communications | Business, Management & Administration |
| Education & Training Services | Finance |
| Government & Public Administration | Health Science |
| Hospitality & Tourism | Human Services |
| Information Technology | Law, Public Safety, Corrections & Security |
| Manufacturing | Marketing, Sales & Services |
| Science, Technology, Engineering & Mathematics | Transportation, Distribution & Logistics |

Reference www.tea.state.tx.us/cte

The development of an effective career pathway planned from a rigorous academic and career and Technical coherent sequence of courses provides students the opportunity to participate in a 4+2(+2) program of study leading to employment in an occupational field and/or continued education and training.

As educational reforms are being implemented across the district, instructional leaders are cautioned to examine labor market projections carefully when designing a program of study in career pathways, career academics and/or other smaller learning community structure.

Benefits of Career Pathways for Students

- ◆ Career pathways provide a **PLAN** for all students, regardless of their interests, abilities, talents, or desired levels of education.
- ◆ Career pathways provide all students with areas of **FOCUS**, along with **FLEXIBILITY**, and a **VARIETY** of ideas to pursue as they make decisions regarding course selection.
- ◆ Career pathways allow students to see the **RELEVANCE** of selected high school courses. Thus, students enrolled in career concentrations tend to do better in school and to stay in school.
- ◆ Career pathways support parents, counselors, and teachers in providing better **ASSISTANCE** to students as they consider career goals and select high school and/or post-secondary courses for their career plan.

TECHNOLOGY APPLICATION GRADUATION CREDIT

The following courses will qualify to satisfy the Technology Applications state requirement for graduation: (Some may require pre-requisites)

Business Education

Business Computer Information Systems I & II
Business Computer Programming
Business Image Management and Multimedia
Telecommunications and Networking

Technology Education

Technology Systems (when taught in a computer-based modular lab setting)
Computer Applications
Communication Graphics (when taught in a computer-based modular lab setting)
Computer Multimedia and Animation Technology

CAREER AND TECHNICAL EDUCATION INSTRUCTIONAL ARRANGEMENTS

Many Career and Technical Education courses may be taught in a variety of instructional arrangements such as technical or comprehensive classroom instruction, pre-employment laboratory instruction, or career preparation, a combination of coordinated technical classroom instruction and work-based training in an approved occupationally-specific training area. All program areas have an approved cooperative education “instructional arrangement” called **Career Preparation**. Career Preparation is a combination of coordinated technical classroom instruction and work-based training in an approved occupationally specific training area. Career Preparation may encompass a variety of instructional arrangements, such as, cooperative education, internship, Bureau of Apprenticeship Training (BAT) - approved apprenticeship, preceptorship, and clinical rotation. This instructional arrangement offers districts a broader array from which to choose and the flexibility to meet its community needs and resources. The program area career preparation **teacher record code number** in PEIMS refers to a teacher/student assignment and **not a course or training area**.

Definitions of Career and Technical Education Instructional Arrangements

1. Apprenticeship

A method of instruction designed to provide education and training instruction registered with the Bureau of Apprenticeship Training BAT that is conducted or sponsored by an employer, group of employers, or a joint apprenticeship committee representing both employers and labor, and that contains all terms and conditions of the qualifications, recruitment, selection, employment, and training of apprentices.

2. CTED

A method of instruction designed for students with disabilities such that precludes integration into a regular Career and Technical Education class. CTED is a more restrictive placement for students receiving services through special education classes. Curriculum and/or equipment are modified to meet individual student needs as identified by the ARD Committee.

3. Career Preparation (also Work-Based Learning Experiences)

A method of instruction designed to provide work-based education and training, which requires a written cooperative agreement with a business/industry training sponsor. Students are provided the opportunity with pay to receive instruction as part of a coherent sequence of courses, by alternation of study in school with on-the-job training in an approved career field for paid employment. The two sites must plan and supervise work collaboratively so that each contributes to the student's education and employability skills.

4. Comprehensive

A method of instruction designed to be broad in nature and provide students with a broad exposure to an industry/business.

5. Exploratory

A broad overview of an entire discipline, which encompasses various aspects of that discipline.

6. Laboratory

A method of instruction designed to provide career specific training in a specific career/occupation. The training is provided in a school-based laboratory setting utilizing tools, equipment, and processes actually utilized in the career/occupation.

7. Research (Independent Study Courses)

Courses that help students reach advanced measures in the Distinguished Achievement Program. The interdisciplinary research project is judged and evaluated by a panel of professionals in the field that is the focus of the project; or is conducted under the direction of a monitor(s) and reported to an approved representative audience; and is related to the required curriculum set forth in the TEKS.

8. Rotation/Preceptorship/Internship

A method of instruction designed to provide work-based education and training that requires a written affiliation with business and industry whereby a student is provided the opportunity, **without pay**, to understand the functions and procedures practiced within a chosen career concentration. Students cycle through all aspects of the industry/business to acquire full appreciation of elements in the work-based environment.

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A learning experience is not subject to the Fair Labor Standards Act (FLSA), i. e., wages are not paid, the student is not employed, and federal and state child labor laws do not apply, if all of the following criteria are met:

- ▶ training, even though it includes actual operation of the facilities of the employer, *is similar to that which would be given in a vocational school*;
- ▶ *training is for the benefit of the trainees or students*;
- ▶ *the trainees, or students, do not displace regular employees, but work under their close observation*;
- ▶ *the employer that provides the training derives no immediate advantages from the activities of the trainees or students, and operations may actually be impeded*;
- ▶ *the trainees, or students, are not necessarily entitled to a job at the conclusion of the training period*; and
- ▶ *the employer and the trainees, or students, understand that the trainees, or students, are not entitled to wages for the time spent in training.*

9. Scientific

Courses that may receive science credit.

10. Technical, Technical Laboratory

A method of instruction is designed to provide a concentrated focus in an occupational or technological area.

11. Work-Based Learning Experiences

A method of instruction designed to provide work-based education and training, which includes the definition of Career Preparation. Other forms of work-based learning experiences include but are not limited to internship and externship opportunities for students to learn industry standards during school (field trip opportunities), after school and during the summer. Mentoring and/or job shadowing worked based learning experience can be conducted over a short period of time. Students are provided the opportunities to receive instruction as part of a coherent sequence of courses in an approved career field. The teacher and industry representative must plan any work-based learning experience and work collaboratively so that each contributes to the student's education and employability skills.

CAREER PREPARATION

The opportunity to participate in Career Preparation is a privilege for students. Before a student enters the workplace the student should have an **adequate background of knowledge and skills**. The recommended course sequencing would include exploratory and laboratory/technical courses. In addition, the following guidelines are to be followed:

- ◆ The TEA *Student Attendance Accounting Handbook* states, “Work-based instruction opportunities must be planned and supervised cooperatively by the local education agency and the training sponsor. Students receive instruction by participating in occupationally specific classroom instruction and work-based learning experiences” in order to become eligible to generate contact hours.
- ◆ **“Written training agreements must be on file for students participating in either paid or unpaid work-based learning opportunities**, such as Health Science Technology 'clinical rotation', Hospitality Services, and Hotel Management experiences. A student in paid work-based instruction may be counted for contact hours on the first day of enrollment, provided a training plan for the student is on file within 15 days of the student's enrollment date. **Training agreements for students participating in unpaid experiences must be filed with the Career and Technology Education Department prior to students’ participation in training at the work site.”**
- ◆ **Teachers assigned to career preparation work-based learning experiences shall visit each student work site at least six times each school year.** At least one visit during each student-grading period is required in order to earn contact hours for that reporting period. (The reporting periods for PEIMS are each six-week period.
- ◆ For a student participating in paid work-based learning experience, employment must begin within 15 days of the student's enrollment date. If a student's employment at an approved work-based training site does not begin by the 16th day after enrollment, the student may be placed at an unpaid work-based non-school training site.
- ◆ Any deviation from the above guidelines could negatively impact the contact hour funding that a campus and/or program potentially could generate. While programs may be targeted for budgetary auditing, the loss of contact hours and money generated would have an adverse effect on campus-based budget.
- ◆ **It is strongly recommended that Career Preparation be offered to students in their junior and senior year.** The purpose of Career Preparation is to provide a venue for students to transfer technical and academic skills acquired in the classroom to a work-based setting. Therefore, career preparation at the senior level only will allow the student greater opportunities to achieve a higher skill level in order to meet the expectations of business and industry.
- ◆ A student must be at least 16 years old to enroll in a career preparation course. Students enrolled in these programs may be exempt from Physical Education but are required to take one-half unit of health.

- ◆ Paid career preparation students may not be assigned to work stations on their home campus.
- ◆ Each career preparation program must consist of an average of one class period of instruction per day in addition to assignment at a training station, **and students must attend the classroom instruction portion of the training an average of 45 minutes daily for the entire school year.**
- ◆ **For three full units of credit, or one and one-half credits each semester (V3), a student must be receiving an average of one class period of career preparation Career and Technical Education instruction per day every week for the entire school year and must be assigned at least 15 hours per week, of which 10 hours must be during the school week within the instructional day. EXAMPLE: If a student attends a district which operates 180 days/36 weeks a year, then 15 hours per week x 36 weeks = 540 hours.**
- ◆ A student may be counted as an eligible student from the date of enrollment provided an approved training plan is on file with the Career and Technical Education Department within 15 instructional days after the date of enrollment. Cooperative training plans shall be developed by the Career Preparation teacher/coordinator in consultation with the person responsible for providing on-the-job training experiences to the student involved.
- ◆ **Training stations shall be in business, industry, and governmental agencies** and shall provide each student with a broad range of curriculum-related training experiences. The approved training plans shall be based on competency statements, which address the appropriate TEKS.
 - ▶ The Service ID (8-digit code) used on a student's training plan and for federal reporting must be listed in the TEA approved Code Table 22.
 - ▶ To maintain maximum accountability, the district has chosen the Six-Week Visitation Report as documentation of required teacher visitation. Verification of visitation must be acknowledged by signature of the training site sponsor. **Within five days following the last day of a six-week' period, teachers should submit the visitation report TO THE DESIGNATED CAMPUS CAREER COUNSELOR** who, after securing the principal's signature, will deliver the report to the Career and Technical Education Department for review, approval, and filing. This process is necessary to maintain a maximum accountability for audit documentation.

Portfolio Preparation and Presentation

Portfolio development is an integral part of the School-to-Careers initiative. Students enrolled in occupationally specific Career and Technical Education courses will begin portfolio preparation as part of the instructional program. This development will continue throughout enrollment in these courses. During the senior year, students will present a culminating exhibition of the portfolio content.

The expected student benefits of this portfolio include:

- ▶ to prepare students for the business world, and
- ▶ to complete significant, viable research projects for community use and post-secondary entrance.

CAREER & TECHNICAL EDUCATION CAREER CLUSTERS AND PATHWAYS

Agriculture, Food & Natural Resources

Agriculture, Food & Natural Resources Cluster is committed to preparing students for careers and life skills through education and training in processing, production, distribution, financing, and development of agricultural commodities and natural resources.

The seven career pathways in this career cluster:

- Food Production and Processing Systems
- Plant Systems
- Animal Systems
- Power, Structural & Technical Systems
- Natural Resources Systems
- Environmental Service Systems
- Agribusiness Systems

Courses identified under these career pathways are:

| Introductory, Middle School | Grade(s) Offered |
|---|-------------------------|
| Introductory Agricultural Mechanics | 7-8 |
| Introductory Horticulture | 7-8 |
| | |
| Comprehensive, High School | |
| Introduction to World Agricultural Science and Technology** (1/2credit) | 9-12 |
| Applied Agricultural Science and Technology (1/2 credit) | 9-12 |
| | |
| Exploratory, High School | |
| Energy and Environmental Technology (1/2 credit) | 9-12 |
| Exploring Aquaculture (1/2 credit) | 9-12 |
| Food Technology (1/2 credit) | 9-12 |
| Introduction to Agricultural Mechanics (1/2 credit) | 9-12 |
| Introduction to Horticultural Science (1/2 credit) | 9-12 |
| Plant and Animal Production (1/2 credit) | 9-12 |
| | |
| Technical, High School | |
| Advanced Agribusiness Management & Marketing (1/2 credit) (P) | 9-12 |
| Advanced Animal Science (1/2 credit) (P) | 9-12 |
| Advanced Floral Design (1/2 credit) (P) | 9-12 |
| Advanced Plant and Soil Science (1/2 credit) (P) | 9-12 |
| Agribusiness Management & Marketing (1/2 credit) | 9-12 |
| Agricultural Biotechnology (1/2 credit) | 9-12 |
| Agricultural Communications (1/2 credit) | 9-12 |
| Agricultural Electronics (1/2 credit) | 9-12 |
| Agricultural Metal Fabrication Technology (1/2 credit) | 9-12 |
| Agricultural Power Technology (1/2 credit) | 9-12 |
| Agricultural Science and Technology Independent Study * (1/2 credit) | 11-12 |

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| | Grade(s) Offered |
|--|-------------------------|
| Agricultural Structures Technology (1/2 credit) | 9-12 |
| Animal Science (1/2 credit) | 9-12 |
| Applied Entomology (1/2 credit) | 9-12 |
| Entrepreneurship in Agriculture (1/2 credit) | 9-12 |
| Environmental Technology (1/2 credit) | 9-12 |
| Floral Design & Interior Landscape Management (1/2 credit) | 9-12 |
| Forestry & Wood Technology (1/2 credit) | 9-12 |
| Fruit, Nut, & Vegetable Production (1/2 credit) | 9-12 |
| Horticultural Plant Production (1/2 credit) | 9-12 |
| Landscape Design, Construction, & Maintenance (1/2 credit) | 9-12 |
| Personal Skills Development in Agriculture (1/2 credit) | 9-12 |
| Plant and Soil Science (1/2 credit) | 9-12 |
| Range Management & Ecology (1/2 credit) | 9-12 |
| Specialty Agriculture (1/2 credit) | 9-12 |
| Wildlife & Recreation Management (1/2 credit) | 9-12 |
| Agricultural Industry, High School | |
| Agricultural Mechanics (1-3 credits) | 11-12 |
| Agricultural Power and Machinery (1-3 credits) | 11-12 |
| Agricultural Resources (1-3 credits) | 11-12 |
| Animal Production (1-3 credits) | 11-12 |
| Aquaculture Production (1-3 credits) | 11-12 |
| Horticulture (1-3 credits) | 11-12 |
| Meats Processing (1-3 credits) | 11-12 |
| Work-based Learning, High School (Career Preparation) | |
| Agricultural Science and Technology Education Career Preparation I (2-3 credits) | 11-12 |
| Agricultural Science and Technology Education Career Preparation II (2-3 credits) | 11-12 |
| Agricultural Science and Technology Education Career Preparation III (2-3 credits) | 11-12 |
| Training Station Codes (for training plans) | |
| WBL/Agriculture/Agribusiness (2-3 credits) | |
| WBL/Leadership Development (2-3 credits) | |
| WBL/Mechanized Agriculture (2-3 credits) | |
| WBL/Food and fiber production (2-3 credits) | |
| WBL/Value-added and food processing (2-3 credits) | |
| WBL/Horticulture (2-3 credits) | |
| WBL/Agribusiness marketing and management (2-3 credits) | |
| WBL/Environmental and natural resources (2-3 credits) | |

* Must have approval from Director of Career & Technical Education, or designee. This course requires program area prerequisites.

** Course can be offered at the 8th grade level for high school credit.

P Instructional area prerequisite(s) required.

Architecture & Construction

The Architecture & Construction Cluster focuses on careers in designing, planning, managing, building and maintaining the built environment.

The three career pathways in this career cluster:

- Design/Pre-Construction
- Construction
- Maintenance/Operations

Courses identified under these career pathways are:

| Middle School | Grade(s) Offered |
|---|-------------------------|
| Exploring Construction Technology (recommended 1 semester) | 7-8 |
| Exploratory, High School | |
| Home Maintenance and Improvement (1/2 credit) | 9-12 |
| Construction Systems (P) (1/2—1 credit) | 9-12 |
| Introduction to Construction Careers (1/2-1 credit) | 9-12 |
| Technical, High School | |
| Architectural Construction (P) (1/2—1 credit) | 10-12 |
| Interior Design (1/2 credit) (P) | 10-12 |
| Construction-Maintenance Systems, High School | |
| Building Maintenance I, II (P) (2-3 credits) | 10-12 |
| Building Trades I, II, III (P) (2-3 credits) | 10-12 |
| Concrete Laying and Finishing (P) (2-3 credits) | 10-12 |
| Painting and Decorating (P) (2-3 credits) | 10-12 |
| Heating, Ventilation, Air-Conditioning and Refrigeration I, II, III (P) (2-3 credits) | 10-12 |
| Bricklaying/Stone Masonry I, II (P) (2-3 credits) | 10-12 |
| Mill and Cabinetmaking I, II (P) (2-3 credits) | 10-12 |
| Piping Trades/Plumbing I, II, III (P) (2-3 credits) | 10-12 |
| Architectural Drafting I, II, III (P) (2-3 credits) | 10-12 |
| Architectural Blueprints and Specifications (P) (1/2-1 credit) | 11-12 |
| Architectural Materials (P) (1/2-1 credit) | 11-12 |
| Career Preparation Teacher Assignment (for scheduling) | |
| Trade and Industrial Education Career Preparation (2-3 credits) | 11-12 |
| Career Preparation Training System Codes (for Training Plans) | |
| WBL/Construction –Maintenance Systems (2-3 credits) | |

P Instructional area prerequisite(s) required.

Arts, Audio/Video Technology & Communication

The Arts, A/V Technology & Communications Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

The six career pathways in this career cluster:

- Audio and Video Technology and Film
- Printing Technology
- Visual Arts
- Performing Arts
- Journalism and Broadcasting
- Telecommunications

Courses identified under these career pathways are:

| Middle School | Grade(s) Offered |
|---|-------------------------|
| Exploring Communication Technology (recommended 1 semester) | 7-8 |
| Exploratory, High School | |
| Communication Systems (P) (1/2—1 credit) | 9-12 |
| Introduction to Graphic Communications Careers (1/2-1 credit) | 9-12 |
| Introduction to Visual Communication Processes (P) (1/2-1 credit) | 9-12 |
| Introduction to Media Technology (P) (1/2-1 credit) | 9-12 |
| Technical, High School | |
| Textile and Apparel Design (1/2 credit) (P) | 10-12 |
| Communication Graphics (P) (<i>Modular Computer Lab Based</i>) (1/2 - 1 credit)♣ | 10-12 |
| Computer Multimedia and Animation Technology (1 credit)♣ | 10-12 |
| Communications and Media Systems, High School | |
| Introduction to Advertising (1/2-1 credit) | 10-12 |
| Advertising Design I, II, III (P) (2-3 credits) | 10-12 |
| Commercial Photography I, II (P) (2-3 credits) | 10-12 |
| Animation I, II, III (P) (1-2 credits) | 11-12 |
| Computerized Typesetting (P) (2 credits) | 10-12 |
| Graphic Arts I, II (P) (2-3 credits) | 10-12 |
| Technical Introduction to Desktop Publishing (P) (1/2-1 credit) | 11-12 |
| Desktop Design (P) (1/2-1 credit) | 11-12 |
| Media Technology I, II (P) (2-3 credits) | 11-12 |
| Technology Communications, Art, and Design (P) (1/2-1 credit) | 10-12 |
| Career Preparation Teacher Assignment (for scheduling) | |
| Trade and Industrial Education Career Preparation (2-3 credits) | 11-12 |
| Career Preparation Training System Codes (for Training Plans) | |
| WBL/Communications and Media Systems (2-3 credits) | |

P Instructional area prerequisite(s) required.

♣ Qualifies for Technology Applications credit.

Business, Management & Administration

The Business Management and Administration Careers Cluster encompasses planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Business Management and Administrative career opportunities are available in every sector of the economy.

The six career pathways in this career cluster:

- Management
- Business Financial Management & Accounting
- Human Resources
- Business Analysis
- Marketing
- Administrative & Information Support

Courses identified under these career pathways are:

| Middle School | Grade(s) Offered |
|---|-------------------------|
| Business Venture | 6-8 |
| Exploratory, High School | |
| Business Support Systems (1/2 - 1 credit) (P) | 9-10 |
| Introduction to Business (1/2 - 1 credit) | 9-10 |
| Technical, High School | |
| Business Communications (1/2 - 1 credit) (P) | 10-12 |
| Business Law (1/2 - 1 credit) (P) | 11-12 |
| Business Management (1/2 credit) | 10-12 |
| Business Ownership (1/2 credit) | 10-12 |
| Comprehensive or Work-Based, High School | |
| Administrative Procedures, I, II **** (1 - 3 credits) (P) | 11-12 |
| International Business **** (1/2 - 3 credits) (P) | 11-12 |
| Research Based, High School | |
| Business Education Independent Study * (P) | 12 |
| Training Station Codes (for training plans) | |
| WBL/Administrative Procedures (2-3 credits) | |
| WBL/International Business (2-3 credits) | |
| WBL/Business, Other (2-3 credits) | |

* Must have approval from Director of CTE, or designee. This course requires program area prerequisites.

**** Course may be offered for ½ - 1 credit when taught as a comprehensive course in a regular one-hour period, as well as for 1 - 2 credits when taught as a laboratory course, or 2 - 3 credits when taught as a career preparation course in multiple periods. Comprehensive courses should not be repeated as a 1st year pre-employment laboratory. When taken only as a pre-employment laboratory, it can be taken as a 1st year pre-lab course. If used as the content for work-based learning, the course is used with a training area code.

P Instructional area prerequisite(s) required.

Education & Training

The Education and Training cluster focuses on planning, managing and providing education and training services, and related learning support services.

The three career pathways in this career cluster:

- Administration and Administrative Support
- Professional Support Services
- Teaching/Training

Courses identified under these career pathways are:

| Introductory, Middle School | Grade(s) Offered |
|---|-------------------------|
| Career Investigation | 7-8 |
| | |
| Exploratory, High School | |
| Career Connections | 9-10 |
| Exploring Education Careers (Innovative) | |
| | |
| Child Development, Education, and Services, High School | |
| Child Development (1/2 credit) | 10-12 |
| Child Development (1/2 credit) – Tech Prep | 10-12 |
| Ready, Set, Teach I, II (Innovative) (1-3 credits) | 11-12 |
| Child Care and Guidance, Management, and Services I, II ** (2 - 3 credits) (P) | 11-12 |
| Child Care and Guidance, Management, and Services I ** (2 – 3 credits) – Tech Prep | 11-12 |
| Introduction to Apprenticeship Training (2-3 credits) | 11-12 |
| | |
| Career Preparation Teacher (for scheduling) | |
| Consumer and Family Science Career Preparation (2-3 credits) | 11-12 |
| | |
| Career Preparation Training Station Codes | |
| WBL/Child Care and Guidance, Management and Services (2-3 credits) | |

** Instruction may be delivered through school-based pre-employment laboratory training or through Family and Consumer Science Career Preparation, which includes delivery arrangements with a coordinated work-based learning component, such as cooperative education, internships, mentorships, apprenticeships, and job shadowing.

P Instructional area prerequisite(s) required

Finance

The Finance Careers Cluster encompasses planning, services for financial and investment planning, banking, insurance and business financial management.

The four career pathways in this career cluster:

- Financial & Investment Planning
- Business Financial Management
- Banking & Related Services
- Insurance Services

Courses identified under this pathway are:

| Exploratory, High School | Grade(s) Offered |
|--|-------------------------|
| Recordkeeping (1/2 - 1 credit) | 9-10 |
| Technical, High School | |
| Accounting I (1/2 - 1 credit) | 10-12 |
| Banking and Financial Systems (1/2 credit) | 11-12 |
| Comprehensive or Work-Based, High School | |
| Accounting II (1/2 - 3 credits) (P) | 11-12 |
| Work-based Learning, High School (Career Preparation) | |
| Business Education Career Preparation (2-3credits) | 11-12 |
| Training Station Codes (for training plans) | |
| WBL/Accounting II (2-3 credits) | |

- ◆ Accounting is offered in the 10th through 12th grades. Students who have already received credit in Accounting cannot receive credit in Recordkeeping. Accounting I is a prerequisite to enrollment in Accounting II.

Health Science

The Health Science Cluster focuses on careers in planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

The five career pathways in this career cluster:

- Therapeutic Services
- Diagnostic Services
- Health Informatics
- Support Services
- Biotechnology Research and Development

Course identified under these career pathways are:

| Coherent Sequences, High School | Grade(s) Offered |
|--|-------------------------|
| Introduction to Health Science Technology | 9-12 |
| Health Science Technology I (P) | 9-12 |
| Health Science Technology II (P) | 11-12 |
| Health Science Technology II (P) | 11-12 |
| | |
| Scientific, High School | |
| Scientific Research and Design I, II, III** (1 science credit) (P) | 11-12 |
| Anatomy and Physiology of Human Systems ** (1 science credit) (P) | 11-12 |
| Medical Microbiology (1/2 science credit) ** (P) | 11-12 |
| Pathophysiology (1/2 science credit) ** (P) | 11-12 |
| | |
| Integrated Occupational, High School | |
| Medical Terminology (1/2 credit) | 9-12 |
| Gerontology (1/2 credit) (P) | 10-12 |
| Clinical Nutrition (1/2 credit) (P) | 11-12 |
| Pharmacology (1/2 credit) (P) | 11-12 |
| Mental Health (1/2 credit) (P) | 11-12 |
| | |
| Research, High School | |
| Health Science Technology Independent Study * (1/2-1 credit) (P) | 12 |
| | |
| Work-Based Learning Experience | |
| Health Science Technology Career Preparation I (2-4 credits) | 11-12 |
| Health Science Technology Career Preparation II (2-4 credits) | 11-12 |
| | |
| Training Station Codes (for training plans) | |
| WBL/Therapeutic Services (2-4 credits) | |
| WBL/Diagnostic Services (2-4 credits) | |
| WBL/Health Informatics(2-4 credits) | |
| WBL/Support Services (2-4 credits) | |
| WBL/Biotechnology/Research (2-4 credits) | |
| WBL/Clinical rotations (2-4 credits) | |

** Courses listed for science credit may be taught by a certified Health Science Teacher or by an appropriately certified science teacher.

P Instructional area prerequisite(s) required.

Hospitality & Tourism

The Hospitality & Tourism Cluster encompasses the management, marketing and operations of restaurants and other food services, lodging, attractions, recreation events and travel related services.

The four career pathways in this career cluster:

- Restaurants and Food/Beverage Services
- Lodging
- Travel & Tourism
- Recreation, Amusements & Attractions

Courses identified under these pathways are:

| Hospitality, High School | Grade(s) Offered |
|---|-------------------------|
| Food Production, Management, and Services I, II ** (2-3 credits) (P) | 11-12 |
| Hospitality Services I, II ** (2-3 credits) (P) | 11-12 |
| Institutional Maintenance Management and Services I, II ** (2-3 credits) (P) | 11-12 |
| | |
| Specialized, High School | |
| Hotel Management ** (1/2-3 credits) | 10-12 |
| Restaurant Management ** (1/2-3 credits) | 10-12 |
| Travel and Tourism Marketing ** (1/2-3 credits) | 10-12 |
| | |
| Innovative | |
| Introduction to Culinary Arts and Entrepreneurial Principles (1 credit) | 9-12 |
| Culinary Arts I, II (2-3 credits) | 10-12 |
| | |
| Career Preparation Teacher (for scheduling) | |
| Consumer and Family Science Career Preparation (2-3 credits) | 11-12 |
| | |
| Work-Based Learning (for scheduling) | |
| Marketing Education Career Preparation I (2—3 credits) | 11-12 |
| Marketing Education Career Preparation II (2—3 credits) | 11-12 |
| | |
| Career Preparation Training Station Codes | |
| WBL/Food Production, Management & Services (2-3 credits) | |
| WBL Hospitality Services (2-3 credits) | |
| WBL/Institutional Maintenance Management Services (2-3 credits) | |
| WBL/Hotel Management (2-3 credits) | |
| WBL/Restaurant Management (2-3 credits) | |
| WBL/Travel and Tourism (2-3 credits) | |

** Course may be offered for 1/2-1 credit when taught as a comprehensive course in a regular 1-hour period, as well as for 1-3 credits when taught as a laboratory or work-based course in multiple periods.

P Instructional area prerequisite(s) required

Human Services

The Human Services Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs.

The five career pathways in this career cluster:

- Early Childhood Development & Services
- Counseling & Mental Health Services
- Family & Community Services
- Personal Care Services
- Consumer Services

Courses identified under these career pathways are:

| Family and Consumer Science Foundations, Middle School | Grade(s) Offered |
|---|-------------------------|
| Skills for Living | 7-8 |
| | |
| Family and Consumer Science Foundations, High School | |
| Personal and Family Development (1 credit) | 9-12 |
| Career Studies (1/2—1 credit) | 10-12 |
| Family and Career Management (1/2 credit) | 11-12 |
| | |
| Family Studies and Human Services, High School | |
| Individual and Family Life (1/2 credit) | 10-12 |
| Family Health Needs (1/2 credit) | 10-12 |
| Services for Older Adults I, II ** (2—3 credits) (P) | 11-12 |
| | |
| Child Development, Education, and Services, High School | |
| Preparation for Parenting (1/2 credit) | 10-12 |
| | |
| Nutrition and Wellness, Food Science and Technology, High School | |
| Nutrition and Food Science (1/2 credit) | 10-12 |
| Food Science and Technology (1/2 credit) (P) | 10-12 |
| | |
| Consumer and Resource Management, High School | |
| Management (1/2 credit) | 10-12 |
| Consumer and Family Economics (1/2 credit) | 10-12 |
| | |
| Textiles and Apparel, High School | |
| Apparel (1/2 credit) | 10-12 |
| Textile and Apparel Production, Management, and Services I, II ** (2 - 3 credits) (P) | 11-12 |
| | |
| Environmental Design, High School | |
| Housing (1/2 credit) | 10-12 |
| Housing, Furnishings, and Equipment Production, Management, and Services I, II** (2 - 3 credits) (P) | 11-12 |

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| Personal and Protective Service Systems, High School | Grade(s) Offered |
|--|-------------------------|
| Introduction to Cosmetology (1/2-1 credit) | 9-12 |
| Cosmetology I, II (P) (2-3 credits) | 10-12 |
| | |
| Research, High School | |
| Independent Study in Family and Consumer Science * (1/2 - 1 credit) (P) | 12 |
| | |
| Other Provisions, High School | |
| Family and Consumer Science Production, Management, and Services I, II** (2 - 3 credits) (P) | 11-12 |
| | |
| Career Preparation Teacher (for scheduling) | |
| Consumer and Family Science Career Preparation (2-3 credits) | 11-12 |
| Salon Entrepreneurship Career Preparation (P) (2-3 credits) | 12 |
| | |
| Career Preparation Training Station Codes | |
| WBL/Services for Older Adults (2-3 credits) | |
| WBL/Textile and Apparel Production, Management and Services (2-3 credits) | |
| WBL/Housing, Furnishings, and Equipment Production, Management and Services (2-3 credits) | |
| WBL/Family and Consumer Sciences Production, Management & Services (2-3 credits) | |

* Must have approval from Director of CTE, or designee. This course requires program area prerequisites.

** Instruction may be delivered through school-based pre-employment laboratory training or through Family and Consumer Science Career Preparation, which includes delivery arrangements with a coordinated work-based learning component, such as cooperative education, internships, mentorships, apprenticeships, and job shadowing.

P Instructional area prerequisite(s) required

Information Technology

The Information Technology Careers Cluster encompass entry level, technical, and professional careers related to the design, development, support and management of hardware, software, multimedia, and systems integration services.

The four career pathways in this career cluster:

- Network Systems
- Information Support and Services
- Interactive Media
- Programming and Software Development

Courses identified under these career pathways are:

| Middle School | Grade(s) Offered |
|---|-------------------------|
| Introduction to Keyboarding | 6-8 |
| Introduction to Business Support Systems | 7-8 |
| Exploring Computer Applications | 7-8 |
| | |
| Exploratory, High School | |
| Computer Applications in Agriculture (1/2 credit) | 9-12 |
| Business Computer Information Systems I *** (1/2 - 1 credit) (P) | 9-10 |
| Keyboarding (1/2 - 1 credit) | 9-10 |
| Computer Applications (1 credit)♣ | 9-12 |
| | |
| Technical, High School | |
| Business Image Management and Multimedia (1/2 - 1 credit) (P) ♣ | 10-12 |
| Telecommunications and Networking (1/2 - 1 credit) (P) ♣ | 10-12 |
| Word Processing Applications (1/2 - 1 credit) (P) | 10-12 |
| | |
| Electrical-Electronics Systems, High School | |
| Computer Cabling and Design (P) (2-3 credits) | 10-12 |
| Introduction to Computer Maintenance I, II (P) (1/2-1 credit) | 9-12 |
| Computer Maintenance Technician (P) (2-3 credits) | 10-12 |
| Fundamentals of Telecommunications (P) (1/2-1 credit) | 10-12 |
| Telecommunications Technology I, II, III, IV (P) (1 credit) | 10-12 |
| | |
| Innovative | |
| Database Fundamentals (1/2 – 2 credits) ORACLE | 10-12 |
| Database Programming (1/2 – 2 credits) ORACLE | 10-12 |
| Internetworking Technologies I, II(1/2 – 2 credits) CISCO | 10-12 |
| Geographic Information Systems I (1 credit) | 10-12 |
| | |
| Comprehensive or Work-Based, High School *** | |
| Business Computer Information Systems II **** (1/2 - 3 credits) ♣ | 11-12 |
| Business Computer Programming I, II**** (1/2 - 3 credits) (P) | 11-12 |
| | |
| Training Station Codes (for training plans) | |
| WBL/Business Computer Information Systems II(2-3 credits) | |
| WBL/Business Computer Programming(2-3 credits) | |

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- *** When 1/2 credit of Keyboarding is required, an equivalency option is available for students who indicate they have acquired the same competencies through informal keyboard instruction. A district-developed proficiency test for placement purposes may be used to determine if their level of competency is the equivalent of a semester of Keyboarding.
- **** Course may be offered for ½ - 1 credit when taught as a comprehensive course in a regular one-hour period, as well as for 1 - 2 credits when taught as a laboratory course, or 2 - 3 credits when taught as a career preparation course in multiple periods. Comprehensive courses should not be repeated as a 1st year pre-employment laboratory. When taken only as a pre-employment laboratory, it can be taken as a 1st year pre-lab course. If used as the content for work-based learning, the course is used with a training area code.
- P** Instructional area prerequisite(s) required.
- ♣ Qualifies for Technology Applications credit.

◆ **Keyboarding:**

Middle School Keyboarding taught in the 8th for high school credit (BUS8217) may be used to fulfill the prerequisites for Business Computer Information (BCIS), providing the following conditions are met.

- ▶ Approved curriculum (TEKS) for the credit course is used in delivering instruction.
- ▶ Teacher has Business Composite Degree or a Business Administration Degree with Keyboarding documented for credit on college transcript, and teacher has attended a two-hour instructional training seminar prior to teaching keyboarding for high school credit.
- ▶ Computer Literacy teachers who are eligible to teach keyboarding as a result of passing the EXCET Business examination must attend 30 hours of instructional training prior to teaching keyboarding for high school credit.
- ▶ Students passing the keyboarding course with a score of 80% or higher at the end of the semester will be awarded high school credit **if the appropriate curriculum was used.**
- ▶ When Keyboarding is **not taught for high school credit** on the middle school level, it may not be used as a prerequisite for BCIS I.
- ▶ Use of appropriate course numbers (BUS8217) from the HISD Master Catalog will ensure the proper credit designation on report cards, AAR gummed labels and in the students' Historical File

High School Keyboarding:

- ▶ Any students taking the Keyboarding Equivalency Test must score a grade of 85 % or higher to be exempted from the prerequisite for BCIS I. **No credit will be awarded.**
- ▶ Keyboarding (1/2 credit) or an 85% or above on the Keyboarding Equivalency Test is a prerequisite for Business Communications, which is offered at grades 10-12.

Law, Public Safety, Corrections & Security

The Law, Public Safety, Corrections, & Security Cluster focuses on careers in planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services

The five career pathways in this career cluster:

- Corrective Services
- Emergency and Fire Management Services
- Security & Protective Services
- Law Enforcement Services
- Legal Services

Courses identified under these career pathways are:

| Personal and Protective Service Systems, High School | Grade(s) Offered |
|--|-------------------------|
| Basic County Corrections Offices (P) (1/2-1 credit) | 11-12 |
| Correctional Systems and Practices (P) (1/2-1 credit) | 10-12 |
| Courts and Criminal Procedure (P) (1/2-1 credit) | 11-12 |
| Crime in America (Concurrent with Intro. to Criminal Justice) (1/2-1 credit) | 11-12 |
| Criminal Investigation (P) (1/2-1 credit) | 12 |
| Emergency Communications (P) (1/2-1 credit) | 11-12 |
| Fundamentals of Criminal Law (P) (1/2-1 credit) | 11-12 |
| Technical Introduction to Criminal Justice (P) (1/2-1 credit) | 11-12 |
| Introduction to Security Services (1/2-1 credit) | 9-12 |
| Security Services (1/2-1 credit) | 10-12 |
| Career Preparation Teacher Assignment (for scheduling) | |
| Trade and Industrial Education Career Preparation (2-3 credits) | 11-12 |
| Career Preparation Training System Codes (for Training Plans) | |
| WBL/Personal and Protective Service (2-3 credits) | |

P Instructional area prerequisite(s) required

Manufacturing

The Manufacturing Cluster focuses on planning, and managing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.

The six career pathways in this career cluster:

- Production
- Manufacturing Production Process Development
- Maintenance, Installation & Repair
- Quality Assurance
- Logistics & Inventory Control
- Health, Safety and Environmental Assurance

Courses identified under these career pathways are:

| Middle School | Grade(s) Offered |
|--|-------------------------|
| Technology Education (recommended 1 year) | 6-8 |
| Exploring Manufacturing Technology (recommended 1 semester) | 7-8 |
| | |
| Overview, High School | |
| Technology Systems (1 credit) | 9-12 |
| Technology Systems (<i>Modular Computer Lab Based</i>) (1 credit)♣ | 9-12 |
| | |
| Exploratory, High School | |
| Manufacturing Systems (P) (1/2 - 1 credit) | 9-12 |
| | |
| Technical, High School | |
| Manufacturing Technology (P) (1/2 - 1 credit) | 10-12 |
| | |
| Electrical-Electronics Systems, High School | |
| Business Machine Repair I, II (P) (2-3 credits) | 10-12 |
| Major Appliance Service Technology I, II(P) (2-3 credits) | 10-12 |
| | |
| Industrial and Manufacturing Systems, High School | |
| Industrial Ceramics (2-3 credits) | 11-12 |
| Foundry Operations (P) (1-2 credits) | 12 |
| Hydraulics and Pneumatics (1-2 credits) | 10-12 |
| Petrochemical Laboratory Technician (2-3 credits) | 11-12 |
| Petrochemical Process Technology (1/2-1 credit) | 11-12 |
| Plant Maintenance (P) (2-3 credits) | 10-12 |
| Plant Processes (P) (2-3 credits) | 11-12 |
| Vocational Plastics I, II, III (2-3 credits) | 10-12 |
| Power Technology (1/2-1 credit) | 11-12 |
| Quality Control I, II (P) (2-3 credits) | 10-12 |

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| Metal Technology Systems High School | Grade(s) Offered |
|---|-------------------------|
| Introduction to Precision Metals Manufacturing Careers (1/2-1 credit) | 9-12 |
| Machine Shop I, II (P) (2-3 credits) | 10-12 |
| Metal Trades I, II (P) (2-3 credits) | 10-12 |
| Sheet Metal I, II, III (P) (2-3 credits) | 10-12 |
| Welding I, II (P) (2-3 credits) | 10-12 |
| | |
| Personal and Protective Service Systems, High School | |
| Leather Trades (2 – 3 credits) | 9-12 |
| Introduction to Upholstery/Furniture Repair (1/2-1 credit) | 9-12 |
| Upholstery/Furniture Repair I, II (P) (2-3 credits) | 10-12 |
| | |
| Research, High School | |
| Trade and Industrial Education Independent Study* (1/2 credit) | 12 |
| | |
| Career Preparation Teacher Assignment (for scheduling) | |
| Trade and Industrial Education Career Preparation (2-3 credits) | 11-12 |
| | |
| Career Preparation Training System Codes (for Training Plans) | |
| WBL/Industrial and Manufacturing Systems (2-3 credits) | |
| WBL/Metal Technology Systems (2-3 credits) | |

- ♣ Meets Technology Applications graduation credit requirement. Must have approval from Director of CTE. This course requires program area prerequisites.
- P** Instructional area prerequisite(s) required

Marketing, Sales & Services

The Marketing, Sales & Services Careers Cluster focuses on the study of how the marketing process seeks to determine and satisfy the needs and wants of people who buy goods, services, and ideas. Businesses of all types and sizes, including not-for-profit organizations, use marketing in their local, regional, national, and global operations to direct the flow of products from the manufacturer to the ultimate consumer.

The seven career pathways in this career cluster:

- Management and Entrepreneurship
- Professional Sales and Marketing
- Buying and Merchandising
- Marketing Communications and Promotion
- Marketing Information Management and Research
- Distribution and Logistics
- E-Marketing

Courses identified under these career pathways are:

| Introductory, High School | Grade(s) Offered |
|--|-------------------------|
| Marketing Yourself (1/2 credit) | 9-12 |
| | |
| Exploratory, High School | |
| Entrepreneurship (1/2 - 1 credit) | 9-12 |
| Principles of Marketing (1/2 - 1 credit) | 9-12 |
| Retailing (1/2 - 1 credit) | 9-12 |
| | |
| Technical, High School | |
| Advertising (1/2 - 1 credit) | 10-12 |
| International Marketing (P) (1/2 - 1 credit) | 10-12 |
| Professional Selling (1/2 - 1 credit) | 10-12 |
| Technology in Marketing (1/2 - 1 credit) | 10-12 |
| | |
| Comprehensive, High School | |
| Marketing Dynamics ** (1 - 3 credits) | 11-12 |
| Marketing Management ** (P) (1 - 3 credits) | 11-12 |
| | |
| Specialized, High School | |
| Fashion Marketing ** (1/2 - 3 credits) | 10-12 |
| Food Marketing ** (1/2 - 3 credits) | 10-12 |
| Services Marketing ** (1/2 - 3 credits) | 10-12 |
| | |
| Innovative | |
| Sports Entertainment and Marketing Management (1/2 – 1 credit) | 10-12 |
| | |
| Research, High School | |
| Marketing Education Independent Study * (1/2 - 1 credit) | 11-12 |
| | |
| Work-Based Learning (for scheduling) | |
| Marketing Education Career Preparation I (2 -3 credits) | 11-12 |
| Marketing Education Career Preparation II (2 - 3 credits) | 11-12 |

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Training Station Code Numbers

- WBL/Fashion Marketing (2-3 credits)
- WBL/Food Marketing (2-3 credits)
- WBL/Services Marketing (2-3 credits)
- WBL/General Merchandising (2-3 credits)
- WBL/Marketing, other (2-3 credits)

- * Must have approval from Director of CTE, or designee. This course requires program area prerequisites.
 - ** Course may be offered for 1/2-1 credit when taught as a comprehensive course in a regular 1-hour period, as well as for 1-3 credits when taught as a laboratory or work-based course in multiple periods.
- P** Instructional area prerequisite(s) required

Science, Technology, Engineering & Mathematics

The Science, Technology, Engineering, & Mathematics Cluster focuses on planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

The two career pathways in this career cluster:

Engineering and Technology

Project Lead the Way is a coherent sequence of study that supports this career cluster.

Science & Math

Courses identified under these career pathways are:

| Overview, High School | Grade(s) Offered |
|--|-------------------------|
| Engineering Principles (1 credit) | 9-12 |
| | |
| Exploratory, High School | |
| Bio-related Technology Systems (P) (1/2 - 1 credit) | 9-12 |
| | |
| Technical, High School | |
| Architectural Graphics (P) (1/2 - 1 credit) | 10-12 |
| Engineering Graphics (P) (1/2 - 1 credit) | 10-12 |
| Electricity/Electronics Technology (P) (1/2 - 1 credit) | 10-12 |
| | |
| Scientific, High School | |
| Principles of Technology I (P) (1 Science Credit) * | 10-12 |
| (Must have completed one course in science and Algebra I) | |
| Principles of Technology II (P) (1 Science Credit) * | 11-12 |
| | |
| Research, High School | |
| Research, Design, and Development I, II (P) (1/2 - 1 credit) | 11-12 |
| Problems and Solutions in Technology I, II (P) (1/2 - 1 credit) | 11-12 |
| | |
| Communications and Media Systems, High School | |
| Engineering and Architectural Drafting (P) (2 credits) | 11-12 |
| Engineering Computer-Aided Drafting I, II (P) (2-3 credits) | 11-12 |
| Advanced Computer-Aided Drafting (P) (2-3 credits) | 11-12 |
| Computer Graphics and Machine Drafting (P) (2 credits) | 12 |
| Technical Introduction to Computer-Aided Drafting (P) (1/2-1 credit) | 11-12 |
| Drafting I, II (P) (2-3 credits) | 10-12 |
| | |
| Construction-Maintenance Systems, High School | |
| Electrical Trades I, II, III (P) (2-3 credits) | 10-12 |

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| Electrical-Electronics Systems, High School | Grade(s) Offered |
|--|-------------------------|
| Introduction to Electrical/Electronics Careers (P) (1/2-1 credit) | 9-12 |
| Electronics I, II, III (P) (2-3 credits) | 10-12 |
| AC/DC Electronics/Computer Systems (P) (2 credits) | 12 |
| AC/DC Electronics/Digital Logic Functions (P) (2 credits) | 11-12 |
| Alternating Current Electronics (P) (2 credits) | 11-12 |
| Digital Logic Circuits (P) (2 credits) | 11-12 |
| Digital Logic Electronic Circuit Technology (P) (2 credits) | 11-12 |
| Direct Current Electronics (P) (2 credits) | 11-12 |
| Semiconductor Electronics Technology (P) (2-3 credits) | 11-12 |
| Solid State Devices and Analog Circuit Technology (P) (2-3 credits) | 11-12 |
| | |
| Industrial and Manufacturing Systems, High School | |
| Technical Introduction to Instrumentation (1/2-1 credit) | 11-12 |
| Instrumentation I, II (P) (1/2-1 credit) | 10-12 |
| Physics of Instrumentation (P) (1/2-1 credit) | 11-12 |
| | |
| Project Lead the Way | |
| Gateway to Technology (1 credit) | 7-8 |
| Introduction to Engineering Design (1 credit) | 9 |
| Digital Electronics (1 credit) | 10 |
| Principles of Engineering (1 credit) | 11-12 |
| Computer Integrated Manufacturing (1 credit) | 11-12 |
| Engineering Design and Development (1 credit) | 12 |
| | |
| The Infinity Project | |
| Engineering: The Digital Future (1/2 – 1 credit) | 9-12 |
| | |
| Career Preparation Teacher Assignment (for scheduling) | |
| Trade and Industrial Education Career Preparation (2-3 credits) | 11-12 |
| | |
| Career Preparation Training System Codes (for Training Plans) | |
| WBL/Electrical-Electronic Systems (2-3 credits) | |

* To receive credit in science, students must meet the 40 % laboratory and fieldwork requirement identified in TAC §74.3(b)(2)(C) (relating to Description of a Required Secondary Curriculum.)

P Instructional area prerequisite(s) required

Transportation, Distribution & Logistics

The Transportation, Distribution, and Logistics Cluster focuses on careers in the planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

The seven career pathways in this career cluster:

- Transportation Operations
- Logistics Planning and Management Services
- Warehouse and Distribution Center Operations
- Facility and Mobile Equipment Maintenance
- Transportation Systems/Infrastructure Planning, Management and Regulation
- Health, Safety and Environmental Management
- Sales and Service

Courses identified under these career pathways are:

| Middle School | Grade(s) Offered |
|---|-------------------------|
| Exploring Energy, Power, and Transportation Technology | 7-8 |
| | |
| Exploratory, High School | |
| Energy, Power, and Transportation Systems (P) (1/2 - 1 credit) | 9-12 |
| Hydraulics and Pneumatics (1-2 credits) | 10-12 |
| | |
| Transportation Systems, High School | |
| Aerospace Aviation Technology I, II (P) (1/2-1 credit) | 11-12 |
| Aircraft Mechanics I, II, III (P) (2-3 credits) | 10-12 |
| Automotive Specialization (P) (1-2 credits) | 11-12 |
| Automotive Technician I, II, III (P) (2-3 credits) | 10-12 |
| Introduction to Transportation Services Careers (1/2-1 credit) | 10-12 |
| Transportation Service Technician (2-3 credits) | 11-12 |
| Automotive Collision Repair and Refinishing Technology I, II, III (P) (2-3 credits) | 10-12 |
| Diesel Mechanics I, II, III (P) (2-3 credits) | 10-12 |
| Marine Engine Repair I, II (P) (2-3 credits) | 10-12 |
| Marine Related Occupations (P) (2-3 credits) | 10-12 |
| Small Engine Repair I, II (P) (2-3 credits) | 10-12 |
| | |
| Career Preparation Teacher Assignment (for scheduling) | |
| Trade and Industrial Education Career Preparation (2-3 credits) | 11-12 |
| | |
| Career Preparation Training System Codes (for Training Plans) | |
| WBL/Transportation Systems (2-3 credits) | |

P Instructional area prerequisite(s) required.

◆ **Student Leadership Organizations**

FFA activities are an integral part of the Agricultural Science and Technology education program. Opportunities for developing skills in leadership, cooperation, and citizenship are provided through extension of classroom/laboratory learning experiences by membership and participation in this student leadership organization.

Two student organizations for those enrolled in Business Education, **Business Professionals of America**, and **Future Business Leaders of America** contribute to the advancement of leadership, citizenship, personal growth, academic, and technological skills. These two organizations serve as a cohesive agent in the worldwide networking of education, business, and industry. Competitive events enhance career/job preparation, workplace competencies, self-confidence, and the instructional program.

Opportunities for leadership and citizenship development are available through membership and participation in **Health Occupations Students of America (HOSA)**. This student professional organization provides opportunities for leadership development, knowledge and skills recognition through the competitive events program, and community service projects. By networking with health care professionals, students receive guidance in selecting and pursuing a health careers.

Family, Consumer and Community Leaders of America (FCCLA) is the student organization that provides opportunities for personal growth and leadership development through Family and Consumer Sciences Education. Focusing on the multiple roles of family member, wage earner, and community leader, FCCLA members develop skills for life through personal development, creative and critical thinking, interpersonal communications, practical knowledge, and career preparation.

Students have opportunities to develop leadership, social, civic, and career skills in marketing through their participation in **DECA**, the student organization for Marketing Education. DECA provides well-planned activities that can be integrated into the curriculum and projects that promote occupational competence for students. DECA is committed to building relationships between education and the business community that will enhance the career and education development of students.

Technology Student Association (TSA) is the student leadership organization Technology Education.

Skills USA is the student leadership organization for Trade and Industrial Arts students

CAREER & TECHNICAL EDUCATION

The **age appropriate placement** provision has been removed from the Carl Perkins Act. All students enrolled in a course with a career preparation instructional arrangement must be 16 years of age to comply with the standards of the U. S. Department of Labor.

ARD COMMITTEE PARTICIPATION FOR CAREER & TECHNICAL EDUCATION

During the ARD/IEP process and Section 504 committee meetings, when CTE is proposed or discussed it is mandatory that the Career & Technical Education teacher who is to provide the instruction and who is knowledgeable of the CTE curriculum be a member of the committee as required by IDEA and Section 504 of the Rehabilitation Act of 1973.

A student with a disability is an eligible participant in Career and Technical Education when the following requirements are met:

- (1) The ARD/IEP or 504 committee shall include a representative from Career and Technical Education, preferably the teacher, when considering initial or continued placement of a student in Career and Technical education.
- (2) Instruction being provided for students with disabilities in Career and Technical Education classes is consistent with the IEPs/504 plan developed for the students.
- (3) If a student is unable to receive a free appropriate public education (educational benefit) in a regular Career and Technical Education program, using supplementary aids and services, the student may be served in separate programs designed to address the student's occupational/training needs, such as Career and Technical Education for students with disabilities (CTED) programs.
- (4) The ARD/IEP or 504 committee determines supplementary services that each student with a disability requires to complete successfully a Career and Technical Education program, such as curriculum modification, equipment modification, classroom modification, support personnel, and instructional aids and devices.
- (5) The ARD/IEP or 504 committee shall consider a student's graduation plan, the content of the individual transition plan and the IEP, and classroom supports to identify the appropriate coherent sequence of courses.
- (6) Enrollment numbers should not create a harmful effect on student learning for a student with or without disabilities.

CAREER & TECHNICAL EDUCATION GENERAL INFORMATION

“Empowering students with marketable academic and technical skills needed to strengthen the social and economic foundation of Houston and beyond.”

◆ Opening and Closing of Career & Technical Education Programs

The request for opening of Career & Technical Education programs must be discussed with, and approved by, the Career & Technical Education Department Head, or his designee, due to the implications of availability of certified personnel and funds for instructional materials and equipment for the enhancement of quality programs. This includes all courses under the Career & Technical Education umbrella.

Likewise, **all requests for closing** of Career & Technical Education programs must be channeled through the Career & Technical Education Department Chair, or his designee for review and approval.

◆ Career & Technical Education Campus Administrators/ Counselors

The **Career & Technical Education Campus Administrators/Counselors** for each high school is an integral part of the Career and Technical Education program. The TEA Student Attendance Accounting Handbook indicates, “in no case should attendance personnel be responsible for determining a student’s career and Technical code. Thus, the district has determined that the career counselor holds the position as the best qualified professional staff person to determine all relevant information regarding Career & Technical Education students. Additionally, it is the role of the career counselor to ensure that coherent sequences are appropriately prepared for the campus-based on course offerings, that the feeder middle school parents and students are made aware of the sequences, and that students are following the proper sequences for their selected career major.

◆ Inventory/Transfer of Equipment

An inventory of all equipment purchased with Career & Technical Education funds must be properly maintained. Therefore, the transfer of any equipment from an HISD campus, or within an HISD campus, must be documented on the appropriate PC-2 form with signatures of the building principal and the Assistant Superintendent, Career & Technical Education or his designee. All teachers are to submit an inventory, on the appropriate forms, prior to the end of school each year. These forms will be sent from the Career & Technical Education office in time for completion and return to the Career & Technical Education Department before teachers’ end the school year.

◆ **Continuous Improvement in Career and Technical Education**

Continuous progress in Texas secondary Career and Technical Education programs, as in other program areas, is largely a matter of local control. The state steps in only if a school system clearly is failing at educating its students. Texas evaluates year-to-year improvement in its Career and Technical Education programs through several avenues:

- ▶ Student performance on the Texas Assessment of Knowledge and Skills (TAKS) tests;
- ▶ The Academic Excellence Indicator System (AEIS);
- ▶ Performance Based Monitoring Analysis System;
- ▶ End of course examinations;
- ▶ The Automated Student and Adult Learner Follow-up System; and
- ▶ The Core Indicators of Performance, established under the Carl Perkins Act, III.

The Core Indicators of Performance, adopted by TEA, will help Texas evaluate whether its Career and Technical Education programs are meeting the needs of Texas students, while holding them to the same high standards of academic performance to which all Texas students are held.

◆ **Building Capacity for Improving Student Achievement: Strategies, Activities, and Resources**

- ▶ Publication of the **State Plan for Career and Technical Education** which was developed as a guide to assist school districts in their efforts to offer effective Career and Technical Education programs that prepare students for further education and eventual employment.
- ▶ Development of the Texas Essential Knowledge and Skills (TEKS), the framework for curriculum in Texas schools. The career and Technical TEKS integrate technology into all courses and demand high academic achievement from students. The TEKS are designed to improve the academic and technical skills of students, as well as to ensure that career and Technical students will be prepared for all aspects of the industry they choose to pursue.
- ▶ Building coherent sequences of courses that include rigorous academic courses to support business and industry expectations.

◆ **Withdrawal Procedure for DAEP**

(3-3) Career & Technical Education contact hours may not be claimed when districts place the student in a disciplinary setting without Career and Technical services being provided for more than five consecutive days. On the sixth day of placement in a disciplinary setting without Career and Technical services being provided, the student should be removed from the program back to the first day of placement in the disciplinary setting.

◆ **Assignment of Career and Technical Education Teachers**

Career and Technical Education teachers new to the district will not be placed in full-time assignments until all required documents to secure proper permits are submitted to the Human Resource Department. These program areas/positions include:

Career Investigation/Connections
Agriculture Science Technology
Business Education
Family and Consumer Science Education
Technology Education
Health Science Technology
Marketing Education
Trade and Industrial Education

State Board of Educator Certification guidelines provide a short timeline for submission of documents needed to obtain appropriate permits. Failure to submit the permit application on a timely basis means that the teacher is not legally serving in the classroom. Such deficiency could have a negative impact on contact hour funding.

Written notification to the Career and Technical Education Department is still required in order for a teacher under the Career & Technical Education umbrella to be placed in a Career & Technical Education position. This includes those positions for which Human Resources is responsible, i.e., Agriculture, Business Education, Family and Consumer Sciences, and Technical Education.

◆ **Budget Allocations**

Budget allocations for Career & Technical Education teachers have been decentralized to the building principals with recommended allotments to individual programs. Teacher requests for instructional materials and supplies should be funded at the campus level from the teacher's allocation.

TECH PREP – STATEWIDE ARTICULATION (ADVANCE TECHNICAL CREDIT)

The Texas Education Agency and the Texas Higher Education Coordinating Board have been the impetus behind the preparation and implementation of statewide articulation for selected Career and Technical Education courses. This program will provide a vehicle for students completing selected Career & Technical Education courses at the high school level to receive articulated credit at any community college in Texas participating in the Plan.

A state-approved staff development requirement, both at the high school and at the community college faculty levels, must be completed, however, in order for students to be eligible for the articulated credit described in the Statewide Articulation Program.

Specific Service ID numbers have been included in the PEIMS Code Table C022 to designate courses eligible for local or statewide articulation. These Career & Technical Education courses must provide college-equivalent course content in order to be eligible for statewide articulation. Strategies for providing this enriched curriculum content are part of the required state-approved staff development.

A complete manual and course crosswalk table have been prepared through a collaborative effort between Texas high school representatives and community college representatives. This manual and crosswalk may be accessed and downloaded from the following website: www.techpreptexas.org

The Gulf Coast Education That Works consortium also has a website (www.gulfcoastetw.org) that is an excellent resource on Tech Prep, both locally and statewide. If additional information is needed, please contact the Manager, Personnel Support Services, Career & Technical Education or Supervisor, Curriculum Development, Career & Technical Education.

