

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT

Introduction to Career Technical Education

DATE: January 2011

SUBJECT AREA: Career Technical Education

PROPOSED GRADE LEVEL(S): 9th

COURSE LENGTH: One Year

GRADING: A-F

NUMBER OF CREDITS: 10 per semester

SUBJECT AREA CREDIT: Elective

PREREQUISITES: None

COURSE DESCRIPTION:

Introduction to Career Technical Education offers freshman a variety of research, writing and hands-on explorations into the following industry sectors: (1) Agriculture and Natural Resources, (2) Arts, Media and Entertainment, (3) Energy and Utilities, (3) Green Technology, (4) Transportation, (4) Engineering and Design, (6) Hospitality, Tourism and Recreation, (7) Information Technology, (8) Public Services, and (9) Health Science and Medical Technology. Students will complete a variety of skills inventory assessments to help them find careers matching their personality and interests. The students will work with a team of career technology teachers who bring years of industry experience into the classroom.

GENERAL GOALS/PURPOSES:

Students will be given the opportunity to develop career skills that may include the following areas:

- 1. Agriculture and Natural Resources Industry Sector**
 - a. Will engage students in agricultural related career awareness and the importance of natural resource management
- 2. Arts, Media and Entertainment Industry Sector**
 - a. Will provide students with an overview of the careers in the music industry and performing arts
 - b. Beginning music theory will be introduced
- 3. Energy and Utilities Industry Sector, Green Technology, and Transportation Industry Sector**
 - a. Will provide students with an overview with the environmental impact of non-renewable and renewable resources as well as alternative fuel technologies
- 4. Engineering and Design Industry Sector**
 - a. Will introduce students to Engineering fields, robotics and Computer Aided Design, using hands on projects that develop teamwork, problem solving and communication skills
- 5. Hospitality, Tourism and Recreation Industry Sector**
 - a. Will prepare students for careers in the food service industry
- 6. Information Technology Industry Sector**
 - a. Will prepare students to enter the job force through development of resumes, interview skills, and presentation marketing
 - b. Will review and expand the knowledge of MLA format and the Microsoft Office software package
- 7. Public Services Industry Sector, and Health Science and Medical Technology Industry Sector**
 - a. Will introduce students to careers in public safety such as law enforcement, fire fighting, and EMT
 - b. Beginning first aid concepts will be introduced
 - c. Will provide students with an opportunity to explore careers in health and medical sciences, public safety and protective services including basic skills necessary for these jobs

8. Road Trip Nation

- a. will engage students in innovative project based learning with an emphasis on critical thinking and technological, oral and writing communication skills

STUDENT READING COMPONENTS:

Foundation Standards 2.1 Reading, including but not limited to:

- (2.1) Analyze the structure and format of functional workplace documents, including the graphics and headers and explain how authors use the features to achieve their purposes.
- (2.2) Prepare a bibliography of reference materials for a report using a variety of consumer, workplace and public documents.

STUDENT WRITING COMPONENT:

Foundation Standards 2.2 Writing, including but not limited to:

- (1.3) Use clear research questions and suitable research methods (e.g., library, electronic media, personal interview) to elicit and present evidence from primary and secondary sources.
- (1.4) Plan and conduct multiple-step information searches by using computer networks and modems.
- (1.7) Use appropriate conventions for documentation in the text, notes, and bibliographies by adhering to those in style manuals (Ex. MLA, Chicago).
- (1.9) Revise writing to improve the logic and coherence of the organization and controlling perspective, the precision of word choice and the tone by taking into consideration the audience, purpose, and formality of the context.
- (2.5) Write documents related to career development, including simple business letters and job applications.
- (2.6) Write technical documents and deliver a multimedia presentation. (e.g. manual on rules, procedures, and minutes of a meeting). Components a through d. (Student portfolios, journaling/recording of work done in class).

STUDENT ORAL COMPONENT:

Foundation Standards 2.3 Listening and Speaking, including but not limited to:

- (2.4) Understand the importance of effective nonverbal, oral, and written communication skills in obtaining and keeping a job.
- (2.5) Use appropriate communication skills, appropriate vocabulary and the specialized terminology of the industry.

STUDENT MATH COMPONENT:

Foundation Standards 1.1. Mathematics, including but not limited to:

- (1.3) Convert fractions to decimals and percents and use these representations in estimations, computations and applications.
- (13.0) Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.
- (24.2) Students identify the hypothesis and conclusion in logical deduction.
- (8.0) Students know, derive, and solve problems involving the perimeter, circumference, volume, lateral, and surface area of common geometric figures

DETAILED UNITS OF INSTRUCTION:

Detailed Units of Instruction for the Career Opportunities Segment:

The goal is to research job descriptions, required education and training, and opportunities and salaries in several career fields. Students will use the internet, PowerPoint and Microsoft Publisher to create presentations and projects. Students will be able to research any career opportunity, but the curriculum will focus on some main career fields, such as Health Safety, Law and Public Safety, Business, Civil Engineering and Green

Technologies. The student's final project is to create a PowerPoint and poster board on a career, stating what they have learned, including a mock resume.

1. Agriculture and Natural Resources Industry Sector:

a. Agriculture

Students will learn the importance of the Agricultural industry to the economy of the State of California. In addition, students will explore the multitude of jobs related to this viable industry. Students study modern agriculture technologies, including GIS and Agricultural education.

b. Natural Resources

Students will explore the importance of California's natural resources and the integrated ecological and physical science cycles, including water, carbon, and nitrogen. Students will understand the basics of wildlife and natural habitats management.

2. Arts, Media, and Entertainment Industry Sector:

a. Music Business

Students will study the music industry and the many careers it offers, such as managers, lawyers, agents, producers. Students will also study the legal issues of the business such as recording contracts and copyright laws.

b. Theatre

Students will develop their communication skills through the performance of short speeches and monologues. Students will understand the differing roles of creators, performers, and others involved in production and presentation.

c. Music

Students will become familiar with the piano keyboard, which will aid their learning of music fundamentals, such as music notation, rhythm, and pitch.

3. Energy and Utilities Industry Sector, Green Technology, and Transportation Industry Sector:

a. Energy Sources

Students will learn the difference between renewable and non-renewable energy sources such as wind, solar, biofuels, biomass, geothermal, hydroelectric, hydrocarbons, and natural gas.

b. Green Technology

Students will learn about current technology to harness renewable energy sources and practically apply them to California's technology challenges.

c. Alternative Transportation

Students will learn about current transportation challenges to incorporate green technology into the auto, aeronautical, and locomotive industries. Students will study the environmental impact as well as the current laws and regulations pertaining to the transportation industry.

4. Engineering and Design Industry Sector:

a. Electronic Portfolio

The students will maintain an electronic portfolio with their CAD files, presentations, and programs developed during the segment.

b. Graphic Design & Sketching

The students will be introduced to a 3-dimensional computer-aided-design program. They will learn how to create 3-dimensional drawings of various parts of an object and design their own objects. The students may have an opportunity to physically create their new object. Working in teams, the students will design or redesign an object to solve a problem of their choice. They will present their design to the class. The class will analyze each design.

c. Robotics

The students will learn to build and program a robot using. Working in teams, the students will design a robot to solve a particular problem. A competition will be held between the teams using their final designs. Teamwork, planning, progress reports, and a post-competition presentation will also be part of the project.

5. Hospitality, Tourism, and Recreation Industry Sector:

a. Culinary

Students will study the food guide pyramid (My Pyramid) and healthy food choices. Students will participate in a food lab and learn to properly use culinary equipment and food ingredients. Students will study career paths in the Hospitality, Recreation, and Tourism industries

6. Information Technology Industry Sector:

a. Keyboarding

Students will learn how to properly type using all ten fingers, apply safe ergonomic principles for posture, positioning. Students will use Microtype software to learn basic skills.

b. Microsoft Office – Word, PowerPoint, Excel

Students will learn how to set up a business letter, MLA formatted reports in Microsoft Word. PowerPoint will be taught through research projects related to careers, personal interests, geography, etc. Students will learn to create spreadsheets using Excel with simple formulas and basic charts.

7. Public Services Industry Sector, and Health Science and Medical Technology Industry Sector:

a. Careers in Law Enforcement, Fire Technology, and EMT.

Students will learn about various public safety careers such as law enforcement, fire technology, emergency medical technician through a series of lectures and guest speakers. Personal safety lessons will also be incorporated in this unit.

b. Introduction to First Aid

Students will learn how to do a patient assessment based on the ABC's – airway, breathing, circulation. Students will learn to plan for emergencies in their home and neighborhood. Disasters such as earthquakes, fire, flood, etc will be discussed.

c. Health and Medical Careers

Students will learn about careers involving multiple levels of education and training requirements in diverse medical fields ranging from pathologist to musical therapists. Students will learn basic understanding of Human Anatomy and Physiology through interactive activities along with basic diagnostic skills.

8. Road Trip Nation:

a. Exposure

Students will have access to stories of community leaders broken into core education themes. Students will have exposure to a variety of different options for post high school life paths.

b. Self-Construction

Students will experience a process of introspection and self-reflection. Students will explore the Road Trip Nation archive of interviews based on their own interests. Students' own ambitions will guide them during this process.

c. Hit the Road

Students will develop their own local road trips. They will work through the Road Trip Nation framework, which involves interviews with community leaders and a detailed plan to explore their life paths.

Interactive Journal:

Students will respond to prompts in a journal on a weekly basis. Students will develop insight into the course's career focus. Students will improve their skills in writing, analysis, and comprehension.

Student Portfolio:

Students will create a working portfolio for work samples, project reflections and a grade-tracking sheet. A careers portion of the portfolio will help students to build information on professional skills and career paths in the industry sectors studied.

Career Research Project:

Each quarter, students will research a career of interest in the industry sector studied in that quarter. Students will reflect on the career they have researched and will demonstrate their knowledge from their findings through a presentation or research report.

THIS COURSE WILL PREPARE STUDENTS FOR THE CAHSEE AND/OR THE CSTs:

Writing, Reading, Language Arts, Math, Social Science and Science

LAB FEE, IF REQUIRED:**SUBJECT AREA CONTENT STANDARDS TO BE ADDRESSED:**

Foundation Standards included but not limited to:

Academics 1.4 (Visual and Performing Arts): (5.3); Career Planning and Management: 3.1, 3.3, 3.4, 3.5; Technology: 4.1 – 4.4; Problem Solving and Critical Thinking: 5.2, 5.3; Health and Safety: 6.2; Responsibility and Flexibility: 7.1 – 7.4; Ethics and Legal Responsibilities: 8.2, 8.3; Leadership and Teamwork: 9.1 – 9.5; Technical Knowledge and Skills (Consumer and Family Studies): 10.1 – 10.12; Demonstration and Application 11.0

Agriculture and Natural Resources Industry Sector – Pathway Standards

The standards addressed include but are not limited to:

- A6.0 Students understand the role and value of agricultural organizations.
- C1.0 Students understand the role of agriculture in the California economy.
- C2.0 Students understand the interrelationship between agriculture and the environment.
- D8.0 Students understand the challenges associated with animal waste management.
- E2.0 Students understand air and water use, management practices, and conservation strategies.

Arts, Media, and Entertainment Industry Sector - Pathway Standards

The standards addressed include but are not limited to:

- B2.3 Make acting choices, using script analysis, character research, reflection, and revision through the rehearsal process.
- B3.3 Perform, design, or direct theatre pieces in specific theatrical styles, including classics by such playwrights as Sophocles, Shakespeare, Lope de Vega, Aphra Behn, Moliere, and Chekhov.
- B6.4 Understand how stage sets, costumes, lighting, musical instruments, props, and other effects support a performance.
- B6.5 Understand the differing roles of creators, performers, and others involved in the production and presentation of the performing arts.

Energy and Utilities Industry Sector, Green Technology, and Transportation Industry Sector - Pathway Standards

The standards addressed include but are not limited to:

- A1.2 Know the advantages and disadvantages of energy resources used in the industry and the effects of those resources on the environment.

- A1.3 Understand the generation waste gases, emissions, and other environmentally destructive gasses and substances and the effect of such substance on the environment.
- A1.4 Understand the advantages and disadvantages of aviation and aerospace transportation systems and the effects of those systems on the environment.
- B2.5 Understand the basic principles of basic energy systems: chemical, hydraulic, pneumatic, electrical, solar, wind, nuclear, and geothermal.

Engineering and Design Industry Sector - Pathway Standards

The standards addressed include but are not limited to:

- C2.0 Students understand the effective use of engineering design equipment.
- C5.0 Students know various object-editing techniques and CADD programs.
- C6.0 Students understand and apply proper dimensioning to drawings.
- C10.0 Students understand the sketching process used in concept development.
- C11.0 Students understand the methods of creating both written and digital portfolios.
- D5.0 Students understand the design process and how to solve analysis and design problems.
- D9.0 Students understand fundamental automation modules and are able to develop systems that complete preprogrammed tasks.
- D11.0 Students understand the effective use of engineering technology equipment.

Hospitality, Tourism, And Recreation Industry Sector – Pathway Standards

The standards addressed include but are not limited to:

- A3.0 The primary standards and regulations for safe food handling and sanitation practices.
- B1.0 Major concepts of the food service and hospitality industry.
- B6.0 The basics of food preparation.
- B10.0 Basic nutritional concepts in meal planning and food preparation.

Information Technology Industry Sector - Pathway Standards

The standards addressed include but are not limited to:

- A7.0 Students understand software applications and life-cycle phases.
- A7.1 Know common industry-standard software and its applications.
- A7.3 Know a variety of sources for reference materials.
- B2.0 Students understand the elements and purpose of a business plan.
- D1.0 Students understand the concepts of professional sales and marketing.
- D1.1 Know the characteristics of a successful salesperson.
- D3.3 Research consumers’ needs and wants to develop, maintain, or improve a product or service.

Public Services Industry Sector, and Health Science and Medical Technology Industry Sector - Pathway Standards

The standards addressed include but are not limited to:

- C2.0 Students develop team building and leadership skills.
- C3.0 Students understand the safety, health, and environmental responsibilities of those in the protective services pathway.
- C6.0 Students understand appropriate level of nutrition, fitness, and agility required by the protective services career field.
- C9.0 Students know the skills and equipment needed to deal with the most protective service situations, from local emergencies to area-wide incidents.
- E1.0 Students know how to communicate procedures and goals to patients and clients and members of the health care team by using a variety of strategies.
- A1.0 Students know the role of the biotechnology industry and biotechnology product development in curing diseases.
- A6.0 Students understand the ethical, moral, legal and cultural issues related to the use of biotechnological research and product development.

B4.2 Use active listening skills (ex. Reflection, restatement and clarification techniques) to provide information to patients and clients and to address their concerns in an appropriate and positive manner.

DISTRICT ESLRs TO BE ADDRESSED

Self-Directed Learners who will:

- Accept responsibility for their own learning by their choice of progressive projects.
- Be able to identify their needs and apply appropriate learning strategies to be successful in the completion of their chosen work.
- Be able to apply learn garment construction and pattern instruction interpretation to real world situations.
- Be able to demonstrate the ability to transfer knowledge obtained in the Clothing Design Classroom to new situations.

Effective Communicators who will:

- Learn to express ideas clearly using correct Clothing Design terminology.
- Actively use verbal, written, artistic, and technological forms of communication.
- Successfully convey messages, ideas, creative thoughts, feelings, and opinions to instructor and peers.
- Listen and respond in a positive manner to analyzing from instructor and peers.

Quality Producers/Performers who:

- Learn to perceive, define, and accomplish intended results.
- Learn to use appropriate resources, tools, and technology to complete Clothing Design projects.
- Create projects that will reflect originality, creativity, and pride in final outcome of workmanship.
- Continually assess, evaluate, and adjust personal work on projects to maintain high individual standards.
- Demonstrate the ability to work not only with their peers but independently as well.

Constructive Thinkers who will:

- Learn to understand, building on the completion of each project, using prior knowledge and information, the techniques necessary to be successful in Clothing Design and Construction.
- Learn to question, analyze, synthesize, and evaluate information, as presented in a variety of media, including but not limited to classroom instruction, hands on application, internet, and video and guest speaker presentation.
- Select appropriate resources to gather information.
- Successfully select and adjust problem-solving strategies.

Collaborative Workers who will:

- Successfully and effectively, work within a culturally diverse setting.
- Cooperate with others to initiate, plan and evaluate individual projects.
- Be able to cooperatively identify problems and reach consensus and provide adequate solutions.
- Contribute time, energy, and positive ideas to the classroom as a whole.
- Actively and politely listen to others' opinions, ideas and suggested solutions.

Responsible Citizens who will:

- Contribute positive time, energy, and talent to improve the welfare of themselves and others.
- Abide by classroom, school, and community rules, laws, and regulations.
- Promote and model effective communication between all instructors and peers of varying backgrounds, lifestyles, and cultures.
- Develop and demonstrate habits of personal wellness and safety, while developing a sense of self-discipline.
- Demonstrate care, respect, and pride for themselves, their peers, their classroom, their school, and their community.