



Foundations of Information Technology

COURSE DESCRIPTION:

This is the entry-level class for more advanced courses in computer-related technology. Upon completion of this class, the student will be able to identify and perform basic installation of computer components and peripheral devices; install and configure an operating system and software; use basic Internet functions; identify networking and programming tasks and design basic strategies to accomplish desired results.

COURSE INFORMATION:

Prerequisite: None
 Dress Requirement and Grooming: Industry standard
 Course Length: 90 hours
 Curriculum Outline Revision Date:

CAREER TECHNICAL EDUCATION INDUSTRY SECTOR:

- **Information Technology**

STATE AND FEDERAL DESIGNATIONS	
System	Designation
California Basic Educational Data System Code (CBEDS)	5598
California Department of Education (CDE) Industry Sector	E-5
US Department of Education (USDOE) Career Cluster	Information Technology
US Department of Labor Dictionary of Occupational Titles (DOT)	Technical Support Specialist 033.162.018

INFORMATION ABOUT COMPETENCY-BASED COURSES

A course description states the scope and content of a course.

Competency is a skill attainment.

Competency is the minimum level of skill a student has to demonstrate to achieve success.

Competency-based instruction measures student success by demonstration of competency and program seat time.

Competency-based instruction targets academic and career technical education to better prepare the individual for transition to either employment and/or higher education.

CALIFORNIA CTE FOUNDATION STANDARDS

The Foundation Standards include general competencies that all students need to master to be successful in the workplace in addition to the competencies listed in the curriculum specific to the occupational area. The Foundation Standards are similar to the competencies identified in the U.S. Department of Labor, Secretary's Commission on Achieving Necessary Skills (SCANS) Report. Subcomponents (not listed here) provide further detail about each Foundation Standard. The complete document California Career Technical Education Model Curriculum Standards, Grades Seven Through Twelve, is available at www.cde.gov.

1.0 Academics

Students understand the academic content required for entry into postsecondary education and employment in the Information Technology sector.

2.0 Communications

Students understand the principles of effective oral, written, and multimedia communication in a variety of formats and contexts.

3.0 Career Planning and Management

Students understand how to make effective decisions, use career information, and manage personal career plans.

4.0 Technology

Students know how to use contemporary and emerging technological resources in diverse and changing personal, community, and workplace environments.

5.0 Problem Solving and Critical Thinking

Students understand how to create alternative solutions by using critical and creative thinking skills, such as logical reasoning, analytical thinking, and problem-solving techniques.

6.0 Health and Safety

Students understand health and safety policies, procedures, regulations, and practices, including the use of equipment and handling of hazardous materials.

7.0 Responsibility and Flexibility

Students know the behaviors associated with the demonstration of responsibility and flexibility in personal, workplace, and community settings.

8.0 Ethics and Legal Responsibilities

Students understand professional, ethical, and legal behavior consistent with applicable laws, regulations, and organizational norms.

9.0 Leadership and Teamwork

Students understand effective leadership styles, key concepts of group dynamics, team and individual decision-making, the benefits of workforce diversity, and conflict resolution.

10.0 Technical Knowledge and Skills

Students understand the essential knowledge and skills common to all pathways in the Information Technology sector.

11.0 Demonstration and Application

Students demonstrate and apply the concepts contained in the foundation and pathway standards.

STUDENT LEARNING GOALS

In order to function as productive, involved members of society, San Bernardino County ROP students will:

1. Demonstrate personal skills that promote success and growth in the workplace

- a. Know the policies, procedures, and regulations regarding health and safety
- b. Understand the importance of responsibility and accountability
- c. Understand the role of ethical behavior
- d. Understand how to work as a member of a team as well as independently

2. Demonstrate career planning that leads to postsecondary education and/or employment

- a. Know the specific requirements in a career pathway for postsecondary education, certification, and/or licensure
- b. Apply effective strategies for self-promotion in the hiring process

3. Demonstrate appropriate application of academic skills and concepts necessary for entry into postsecondary education and/or employment

- a. Apply the principles of effective oral, written, and multimedia communication in a variety of formats and contexts
- b. Perform mathematical computations required for industry-specific applications

4. Demonstrate problem solving and critical thinking skills

- a. Use critical thinking skills to make informed decisions and solve problems
- b. Apply appropriate problem solving strategies and critical thinking skills to work-related issues and tasks

5. Demonstrate the use of appropriate technology used in the 21st Century

- a. Identify, analyze and integrate past, present and future technological resources for application in personal, workplace and community environments
- b. Utilize technological skills to enhance personal and career development

MAJOR INSTRUCTIONAL UNITS	CL Hours	CC Hours	CA Academic Content Standards	HSEE	Activity/Assessment
<p>I. Introduction Unit objective: Review the course description and objectives, expectations of teacher and students, industry occupations and ESLRs Unit Competencies:</p> <ul style="list-style-type: none"> A. Describe course, objectives and requirements B. Explain grading, rules, competencies and objectives C. Discuss occupations in information technology D. Identify and discuss the SLGs 	2		LA: grades 9/10 Reading 2.0, 2.1 Listening & Speaking 1.0	✓	Distribute a syllabus containing all of the needed information. Read and discuss with students./Follow with a Q&A session to check for understanding. Students and parents will read, sign and return the following day.
<p>II. Basic Terminology Unit objective: Identify and use basic terminology Unit Competencies:</p> <ul style="list-style-type: none"> A. Describe hardware and software B. Explain networking C. Discuss programming 	5		LA: grades 9/10 Reading 1.1 Writing 1.8 Listening & Speaking 1.0	✓	Distribute a handout to students listing basic computer-related terminology. Discuss and explain each term./Give students an exam.
<p>III. Hardware Unit objective: Demonstrate the use of appropriate components and peripherals Unit Competencies:</p> <ul style="list-style-type: none"> A. Identify basic components, such as CPU, memory and ports, and storage devices B. Discuss input/output devices, such as monitor, keyboard and mouse C. Demonstrate installation of basic components and peripherals, such as hard drive and network interface cards (NICs) 	15		LA: grades 9/10 Reading 2.0 Writing 1.0	✓ ✓	Taking older equipment not being used in the lab, pull open the case, show the components, and describe the purpose of each part. Pass the components around so that all students get to handle them. Students will search the Internet to find proper definitions of each and write them out./Teacher will review the written description of components, which will lead to

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 CC = Community Classroom (worksite learning)
 LA = Language Arts Standards
 MA = Math Standards
 SC = Science Standards
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					<i>an exam.</i>
IV. Software Unit objective: Demonstrate the use of appropriate software, operating systems, and drivers Unit Competencies: <ul style="list-style-type: none"> A. Discuss operating systems, such as Mac OS, Windows, Linux, and emerging systems B. Identify applications, such as Office, multimedia and databases C. Demonstrate installation of operating systems, applications and device drivers 	25		LA: grades 9/10 Writing 1.0 Writing 1.0, 2.6	✓ ✓	Demonstrate multiple operating systems, both old and new, including the history of each./Identify properties of different operating systems through an exam. Demonstrate database managers. Ask students to create a database./Teacher review of the database.
V. Internet Unit objective: Use basic Internet functions Unit Competencies: <ul style="list-style-type: none"> A. Describe physical connections, including dedicated and non-dedicated, and logical connections, such as ISP and LAN B. Identify applications, including browsers, email, and groupware C. Demonstrate how to correctly search the Internet, including Boolean functions D. Discuss business policies and procedures including ethics, legalities, netiquette and security 	14		LA: grades 9/10 Writing 1.0 Writing 1.0 Writing 1.0	✓ ✓ ✓	Discuss home-based networks, such as DSL and dial-up, and provide definitions of each./Give students a written test. Demonstrate different browsers and email clients. Describe the characteristics of each./Give students an oral exam. Discuss how to do a Boolean search and assign students search exercises./Review the student work.
VI. Networks Unit objective: Identify networking tasks and design basic strategies to accomplish desired results Unit Competencies:	14		LA: grades 9/10 Writing 1.0	✓	Build a basic network on paper./Teacher review of student work.

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A. Discuss purpose and design, including project task and flow chart B. Describe types of networks C. Identify basic connections			Writing 1.0	✓	Demonstrate types of networks and define terms./Give students a written exam.
VII. Programming Unit objective: Identify programming tasks and design basic strategies to accomplish desired results Unit Competencies: A. Discuss purpose and design, including project task and flow chart B. Describe types of programming and languages C. Discuss simple program	10		LA: grades 9/10 Writing 1.0, 2.6 Writing 1.0, 2.6	✓ ✓	Discuss purpose and design. Ask students to write a purpose statement and design a basic flow chart./Teacher review of student work. Discuss simple programs. Ask students to write a macro in a word processing program./Teacher review of student work.
VIII. Job Search Skills Unit objective: Identify occupations in information technology and job search and retention techniques Unit Competencies: A. Correctly complete an application B. Word process a traditional résumé and discuss online résumé websites C. Practice mock interviewing D. Describe job retention techniques	5		LA: grades 9/10 Writing 1.0, 1.1	✓	Demonstrate navigation of online résumé websites. Students will word process an error-free professional résumé./Review student work.

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