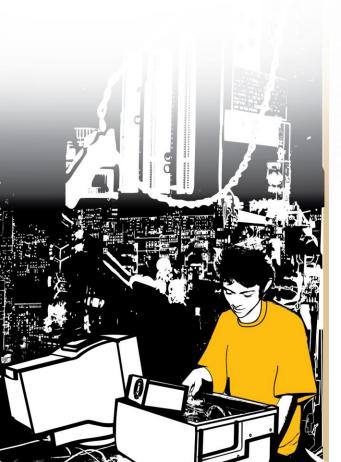# Course Outline

Job Title:
Computer Technician

Career Pathway:
Networking

Industry Sector:
Information and Communication Technologies

O*NET-SOC CODE:
49-2011.00

CBEDS Title:
Network Engineering

CBEDS No.:
4604

79-30-90

Computer Technician A+ Certification (Upgrade)

Credits: 10   **Hours:** 120

Course Description:
This competency-based course prepares students for the A+ Certification Exams in computer repair. The intent of this course is to upgrade students' existing computer repair skills. Level of instruction assumes student has an advanced working knowledge of troubleshooting, service and support skills with regard to computer repair. Areas of instruction include: advanced DOS 6.2x, advanced instruction in the different types of microprocessors used in microcomputers, support of Windows 3.1x, support of Windows networks, support of Windows '9x, the use of Windows NT and Windows 2000. Instruction also includes the support and service of ink-jet and laser printers as well as the support of laptop computers. Students are provided with simulated certification testing and test-taking strategies to prepare for the A+ Certification Exam. The competencies in this course are aligned with the California High School Academic Content Standards and the California Career Technical Education Model Curriculum Standards.

Prerequisites:
Enrollment requires a 9.0 reading comprehension level as measured by the TABE D 9/10, and math skills equivalent to Math 2 (53-03-76). Student must also have a working knowledge of troubleshooting, service and support skills with regard to computer repair. An interview with receiving instructor to evaluate student's expertise is required as well.

NOTE: For Perkins purposes this course has been designated as a **capstone** course.

This course cannot be repeated once a student receives a Certificate of Completion.

COURSE OUTLINE COMPETENCY-BASED COMPONENTS

A course outline reflects the essential intent and content of the course described. Acceptable course outlines have six components. (Education Code Section 52506). Course outlines for all apportionment classes, including those in jails, state hospitals, and convalescent hospitals, contain the six required elements:

(EC 52504; 5CCR 10508 [b]; Adult Education Handbook for California [1977], Section 100)

COURSE OUTLINE COMPONENTS   **LOCATION**

GOALS AND PURPOSES   Cover

The educational goals or purposes of every course are clearly stated and the class periods are devoted to instruction. The course should be broad enough in scope and should have sufficient educational worth to justify the expenditure of public funds.

The goals and purpose of a course are stated in the COURSE DESCRIPTION. Course descriptions state the major emphasis and content of a course, and are written to be understandable by a prospective student.

PERFORMANCE OBJECTIVES OR COMPETENCIES   pp. 7-14

Objectives should be delineated and described in terms of measurable results for the student and include the possible ways in which the objectives contribute to the student's acquisition of skills and competencies.

Performance Objectives are sequentially listed in the COMPETENCY-BASED COMPONENTS section of the course outline. Competency Areas are units of instruction based on related competencies. Competency Statements are competency area goals that together define the framework and purpose of a course. Competencies fall on a continuum between goals and performance objectives and denote the outcome of instruction.

Competency-based instruction tells a student before instruction what skills or knowledge they will demonstrate after instruction. Competency-based education provides instruction which enables each student to attain individual goals as measured against pre-stated standards.

Competency-based instruction provides immediate and continual repetition and In competency-based education the curriculum, instruction, and assessment share common characteristics based on clearly stated competencies. Curriculum, instruction and assessment in competency-based education are: explicit, known, agreed upon, integrated, performance oriented, and adaptive.

COURSE OUTLINE COMPONENTS	**LOCATION**

INSTRUCTIONAL STRATEGIES   p. 16

Instructional techniques or methods could include laboratory techniques, lecture method, small-group discussion, grouping plans, and other strategies used in the classroom.

Instructional strategies for this course are listed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructional strategies and activities for a course should be selected so that the overall teaching approach takes into account the instructional standards of a particular program, i.e., English as a Second Language, Programs for Adults with Disabilities.

UNITS OF STUDY, WITH APPROXIMATE HOURS ALLOTTED FOR EACH UNIT   Cover

The approximate time devoted to each instructional unit within the course, as well as the total hours for   pp. 7-14
the course, is indicated. The time in class is consistent with the needs of the student, and the length of the class should be that it ensures the student will learn at an optimum level.

Units of study, with approximate hours allotted for each unit are listed in the COMPETENCY AREA STATEMENT(S) of the course outline. The total hours of the course, including work-based learning hours (community classroom and cooperative vocational education) is listed on the cover of every CBE course outline. Each Competency Area listed within a CBE outline is assigned hours of instruction per unit.

EVALUATION PROCEDURES   pp. 16-17

The evaluation describes measurable evaluation criteria clearly within the reach of the student. The evaluation indicates anticipated improvement in performances as well as anticipated skills and competencies to be achieved.

Evaluation procedures are detailed in the TEACHING STRATEGIES AND EVALUATION section of the course outline. Instructors monitor students' progress on a continuing basis, assessing students on attainment of objectives identified in the course outline through a variety of formal and informal tests (applied performance procedures, observations, and simulations), paper and pencil exams, and standardized tests.

REPETITION POLICY THAT PREVENTS PERPETUATION OF STUDENT ENROLLMENT   Cover

After a student has completed all the objectives of the course, he or she should not be allowed to reenroll in the course. There is, therefore, a need for a statement about the conditions for possible repetition of a course to prevent perpetuation of students in a particular program for an indefinite period of time.

ACKNOWLEDGMENTS

Thanks to GONZALO PEREZ and BRENDA VELA for developing and editing this curriculum. Acknowledgment is also given to ERICA ROSARIO for designing the original artwork for the course covers.

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APPROVED:

JOE STARK
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Division of Adult and Career Education

1.0 Academics
Analyze and apply appropriate academic standards required for successful industry sector pathway completion leading to postsecondary education and employment. Refer to the Information and Communication Technologies academic alignment matrix for identification of standards.

2.0 Communications
Acquire and accurately use Information and Communication Technologies sector terminology and protocols at the career and college readiness level for communicating effectively in oral, written, and multimedia formats.

3.0 Career Planning and Management
Integrate multiple sources of career information from diverse formats to make informed career decisions, solve problems, and manage personal career plans.

4.0 Technology
Use existing and emerging technology, to investigate, research, and produce products and services, including new information, as required in the Information and Communication Technologies sector workplace environment.

5.0 Problem Solving and Critical Thinking
Conduct short, as well as more sustained, research to create alternative solutions to answer a question or solve a problem unique to the Information and Communication Technologies sector using critical and creative thinking, logical reasoning, analysis, inquiry, and problem-solving techniques.

6.0 Health and Safety
Demonstrate health and safety procedures, regulations, and personal health practices and determine the meaning of symbols, key terms, and domain-specific words and phrases as related to the Information and Communication Technologies sector workplace environment.

7.0 Responsibility and Flexibility
Initiate, and participate in, a range of collaborations demonstrating behaviors that reflect personal and professional responsibility, flexibility, and respect in the Information and Communication Technologies sector workplace environment and community settings.

8.0 Ethics and Legal Responsibilities
Practice professional, ethical, and legal behavior, responding thoughtfully to diverse perspectives and resolving contradictions when possible, consistent with applicable laws, regulations, and organizational norms.

9.0 Leadership and Teamwork
Work with peers to promote divergent and creative perspectives, effective leadership, group dynamics, team and individual decision making, benefits of workforce diversity, and conflict resolution such as those practiced in the Future Business Leaders of America and SkillsUSA career technical student organization.

10.0 Technical Knowledge and Skills
Apply essential technical knowledge and skills common to all pathways in the Information and Communication Technologies sector, following procedures when carrying out experiments or performing technical tasks.

11.0 Demonstration and Application
Demonstrate and apply the knowledge and skills contained in the Information and Communication Technologies anchor standards, pathway standards, and performance indicators in classroom, laboratory, and workplace settings, and through career technical student organizations such as Future Business Leaders of America and SkillsUSA.

B. Networking Pathway

Students in the Networking pathway prepare for careers that involve network analysis, planning, and implementation, including the design, installation, maintenance, and management of network systems. The successful establishment, maintenance, and securing of information and communication technologies infrastructure is critical to the success of every twenty-first century organization. Employment continues to grow for persons with expertise in networking.

Sample occupations associated with this pathway:
♦   Computer Security Specialist
♦   Network Technician
♦   Network Engineer
♦   Network Administrator
♦   Telecommunication Specialist

B1.0   Identify and describe the principles of networking and the technologies, models, and protocols used in a network.

B2.0   Identify, describe, and implement network media and physical topologies.

B3.0   Install, configure, and differentiate between common network devices.

B4.0   Demonstrate proper network administration and management skills.

B5.0   Demonstrate how to communicate and interpret information clearly in industry-standard visual and written formats.

B6.0   Use and assess network communication applications and infrastructure.

B7.0   Analyze a customer's organizational needs and requirements to identify networking needs.

B8.0   Identify security threats to a network and describe general methods to mitigate those threats.

COMPETENCY-BASED COMPONENTS
for the <u>Computer Technician: A+ Certification (Upgrade)</u> Course

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
A. ORIENTATION AND SAFETY Know the skills and safety regulations required for employment in the service and support technician fields. (3 hours)	1. Describe qualifications and prerequisites for this trade. 2. Describe working conditions and opportunities. 3. Describe CompTIA's Certification Exams. 4. Describe Emergency Procedures. 5. Describe classroom "shop" policies and procedures. 6. Pass the designated safety test with 100% accuracy.	**Career Ready Practice:** 1, 2, 3, 4 **CTE Anchor:** Communications: 2.4 Career Planning and Management: 3.2 Technology: 4.3, 4.6 Health and Safety: 6.4 Technical Knowledge and Skills: 10.11, 10.13 **CTE Pathway:** B1.2
B. ADVANCED DOS 6.2x Understand AUTOEXEC.BAT and CONFIG.SYS and memory management.	1. Explain the AUTOEXEC.BAT file. 2. Define Conventional and Reserved Memory. 3. Define Extended/XMS Memory. 4. Define Expanded/LIM/EMS Memory. 5. Define High Memory/HMA and Upper Memory/UMB. 6. Explain DOS Device Drivers. 7. Explain the CONFIG.SYS file. 8. Explain the relationship between the AUTOEXEC.BAT and CONFIG.SYS files. 9. Explain commands used in AUTOEXEC.BAT and CONFIG.SYS files. 10. Demonstrate the use of F5 and F8 function keys. 11. Pass a written Advanced DOS Exam.	**Career Ready Practice:** 1, 2, 3, 4, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(5 hours)		**CTE Pathway:** B1.1
C. THE SYSTEMBOARD Understand the motherboard and the different buses. (4 hours)	1. Describe the Universal Serial Bus. 2. Describe the Firewire Bus. 3. Describe Bus Mastering. 4. Explain the importance and the various methods of obtaining documentation. 5. Describe AT and ATX boards. 6. Describe microprocessor socket numbers. 7. Pass a written Motherboards and Buses Exam.	**Career Ready Practice:** 1, 2, 3, 4, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1
D. MICROPROCESSORS Understand the different kinds of microprocessor. (10 hours)	1. Describe the Intel 8086/8088 microprocessor. 2. Describe the Intel 80286 microprocessor. 3. Describe the Intel 80386 microprocessors. 4. Describe the Intel 80486 microprocessors. 5. Describe the Intel Pentium microprocessors. 6. Describe the Intel Pentium Pro microprocessors. 7. Describe the Intel Pentium MMX microprocessors. 8. Describe the Intel Pentium II microprocessors. 9. Describe the Intel Pentium III microprocessors. 10. Describe any new additions to the Intel family of microprocessors. 11. Describe the AMD K6 microprocessors. 12. Describe the AMD K6 2 microprocessors. 13. Describe any new additions to the AMD family of microprocessors. 14. Describe the IBM MI microprocessors. 15. Describe the IBM MII microprocessors. 16. Describe any new additions to the IBM family of microprocessors. 17. Describe all new competitors' microprocessors. 18. Define Word Size. 19. Define Data Path. 20. Describe Wait States. 21. Define internal and external cache. 22. Describe the different levels of cache: L1, L2, L3. 23. Describe PCI to ISA bridge. 24. Pass a Microprocessors Exam.	**Career Ready Practice:** 1, 2, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
E. HARD DRIVES Understand hard drives. (5 hours)	1. Explain interleaving. 2. Explain skewing. 3. Define zone-bit recording. 4. Describe Logical block Addressing. 5. Describe FAT16. 6. Describe FAT32. 7. Describe VFAT. 8. Explain MBR and DBR. 9. Explain seek time. 10. Explain rotational latency period. 11. Describe access time. 12. Describe SCSI technology. 13. Describe data recovery. 14. Pass a written Hard Drives Exam.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1
F. PRINTERS Understand the support and service of printers. (4 hours)	1. Describe the various types of printers available. 2. Describe resolution. 3. Explain how an ink-jet printer works. 4. Explain the importance of using the correct paper. 5. Explain how to clean an ink-jet printer. 6. Identify the parts of a laser printer. 7. Explain the six steps of the electro-photographic process. 8. Explain how to clean a laser printer. 9. Describe preventive maintenance. 10. Pass a written Printers Exam.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1
G. SUPPORTING WINDOWS 3.1x Understand and support Windows 3.1x.	1. Explain Standard Mode. 2. Explain Enhanced Mode. 3. Describe 386PART.PAR and SPART.PAR files. 4. Describe WIN386.SWP file. 5. Describe GDI.EXE file. 6. Explain INI Files and their structure. 7. Demonstrate the use of SYSEDIT.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(6 hours)	8. Explain swap files used for virtual memory. 9. Describe problems associated with swap files and disk compression. 10. Explain how WIN.COM determines which mode Windows runs in. 11. Describe DOSX.EXE. 12. Describe KRNL286.EXE and KRNL386.EXE. 13. Describe WSWAP.EXE and DSWAP.EXE. 14. Describe WIN386.EXE. 15. Describe Object Linking and Embedding. 16. Describe Dynamic Data Exchange. 17. Define dynamic link library. 18. Pass a written Windows 3.1x Exam.	Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1
H. NETWORKING Understand and support Windows networks. (10 hours)	1. Define network. 2. Describe server-client networks. 3. Describe peer-to-peer networks. 4. Define topology. 5. Describe different types of cabling. 6. Explain media access control schemes. 7. Explain the OSI Layer Network Model. 8. Define protocol. 9. Describe PPP. 10. Describe TCP/IP. 11. Describe NetBEUI. 12. Describe SMTP. 13. Describe HTTP. 14. Describe FTP. 15. Describe hubs and intelligent hubs. 16. Describe routers, bridges, and gateways. 17. Explain Dial-Up Networking. 18. Describe TAPI. 19. Demonstrate sharing files/folders. 20. Describe IFSHLP.SYS file. 21. Describe ping command. 22. Pass a written Networking Exam.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1, B1.2, B3.1, B3.3
I. MONITORS Understand the features and functions of the different components of monitors.	1. Define pixel. 2. Define raster. 3. Define bitmap. 4. Define font. 5. Define typeface. 6. Define bitmapped font. 7. Define vector/outline font. 8. Describe the difference between font and typeface. 9. Describe scalable fonts. 10. Describe True Type fonts.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
(3 hours)	11. Define resolution in monitors. 12. Describe refresh rates. 13. Describe interlaced and non-interlaced monitors. 14. Describe dot pitch. 15. Explain green monitors. 16. Describe upgrading VRAM. 17. Describe the resolutions of various video adapters. 18. Pass a written Monitors and Fonts Exam.	Demonstration and Application: 11.2 **CTE Pathway:** B1.1, B1.3
J. MULTIMEDIA/PERIPHERALS Learn the features and functions of the installation, maintenance and troubleshooting peripherals. (10 hours)	1. Demonstrate installation of FDD. 2. Demonstrate installation of CD-ROMs. 3. Demonstrate installation of sound cards. 4. Describe resolution in sound cards. 5. Demonstrate installation of scanners. 6. Demonstrate installation of various other peripherals.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1, B1.2
K. MODEMS Understand and support modems. (5 hours)	1. Describe communications layers. 2. Explain the UART chips. 3. Define Modulate and Demodulate. 4. Describe RS232c standard. 5. Describe modem speeds. 6. Describe handshaking. 7. Demonstrate installing a modem. 8. Demonstrate configuring a modem. 9. Describe the Hayes AT Command Set. 10. Pass a written Modems Exam and demonstrate the ability to configure internal modems.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1, B1.5

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
L. WINDOWS 9x Know the use Windows 9x without a mouse. (15 hours)	1. Demonstrate keystrokes needed to move around Windows without a mouse. 2. Demonstrate the use of the Windows keys for right clicking/alternate clicking. 3. Define shortcuts. 4. Define applet. 5. Demonstrate the use of folders. 6. Demonstrate the use of long file names. 7. Describe the desktop. 8. Demonstrate customizing the desktop. 9. Demonstrate how to manage files with explorer. 10. Describe the Start button. 11. Describe the Taskbar. 12. Describe the Control Panel Applets. 13. Describe the My Computer icon and its contents. 14. Demonstrate use of The Print Manager. 15. Demonstrate creating a dial-up connection. 16. Demonstrate adding/removing components after installation. 17. Demonstrate how to exit Windows properly. 18. Pass a written Windows 9x exam and demonstrate the ability to move around Windows without a mouse.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1
M. SUPPORTING WINDOWS 9x Learn the basics of supporting Windows 9x. (5 hours)	1. Describe minimum hardware requirements. 2. Describe recommended hardware requirements. 3. Describe optimal hardware requirements. 4. Demonstrate installation of Windows 95. 5. Demonstrate installation of Windows 98. 6. Describe the difference between the full and upgrade versions of Windows. 7. Demonstrate installation of Win 9x over DOS to make the system dual booting. 8. Describe the difference between the diskette and CD-ROM editions of Win 95. 9. Describe the differences among the Windows 95 A, B, and C editions. 10. Describe CAB files. 11. Demonstrate copying CABs to hard drive to run setup. 12. Describe custom installations. 13. Describe various problems that may arise during installation and how to resolve them. 14. Describe USER.EXE file. 15. Explain PIFs. 16. Explain property sheets. 17. Demonstrate the ability to support Windows 9x system.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1, B1.5

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
N. THE INTERNET Understand the features and functions of the internet. (5 hours)	1. Define internet. 2. Define intranet. 3. Describe the WWW or internet. 4. Define browser. 5. Define ISP. 6. Define IP address. 7. Define URL. 8. Describe TCP/IP. 9. Demonstrate connecting to the Internet using Win 3.1x. 10. Demonstrate connecting to the Internet using Win 9x. 11. Demonstrate downloading drives from the internet. 12. Demonstrate downloading documentation for various boards from the internet. 13. Demonstrate the use of the internet for keeping up with technology. 14. Demonstrate using the internet as a resource for reference material. 15. Pass a written Internet Exam.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1, B1.2, B1.5
O. TROUBLESHOOTING SKILLS Know the diagnostic and service procedures for microcomputers and printers. (25 hours)	1. Describe the importance of backing up a system. 2. Explain how to approach the problem logically. 3. Explain how to approach the problem systematically. 4. Describe the importance of researching. 5. Describe the importance of talking to the user. 6. Describe how to talk to the user to acquire information. 7. Role-play listening to a user, providing feedback, and diagnosis. 8. Describe copyright laws and piracy. 9. Define *intermittent problems*. 10. Explain the importance of problem isolation. 11. List a variety of diagnostic software and their uses. 12. Demonstrate how to use diagnostic software. 13. Define the steps of problem determination. 14. Define the steps of problem verification. 15. Describe the use of diagnostic hardware. 16. Describe alternate operating systems. 17. Demonstrate the ability to troubleshoot by successfully diagnosing system problems and resolving them.	**Career Ready Practice:** 1, 2, 10, 11 **CTE Anchor:** Communications: 2.4 Technology: 4.3 Problem Solving and Critical Thinking: 5.1, 5.3 Technical Knowledge and Skills: 10.1, 10.5, 10.13 Demonstration and Application: 11.2 **CTE Pathway:** B1.1, B2.2, B3.7, B4.1, B4.2, B4.5

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
P. EMPLOYABILITY SKILLS Understand, apply, and evaluate the employability skills required in the A+ Certification field. (5 hours)	1. Describe employment requirements. 2. Know how to apply learned skills when seeking employment. 3. Design sample résumés. 4. Describe job specifics for various positions. 5. Describe qualifications needed for employment. 6. Describe plans for seeking employment. 7. Identify potential employers. 8. Describe requirements of filling out a job application such legibility, correctness, and completeness. 9. Complete sample job application forms correctly. 10. Describe the importance of punctuality in a job interview. 11. Describe the importance of a positive attitude in a job interview. 12. Describe the importance of enthusiasm in a job interview. 13. Describe the importance of appropriate appearance on the job interview. 14. Describe the importance of cleanliness and neatness in a job interview. 15. Describe the importance of punctuality on the job. 16. Describe the importance of a positive attitude on the job. 17. Describe the importance of enthusiasm on the job. 18. Describe the importance of appropriate appearance on the job. 19. Describe the importance of cleanliness and neatness on the job. 20. Describe the importance of continuous upgrading of job skills. 21. Describe proper personal appearance and demeanor. 22. Describe customer service as a method of building permanent relationships between the organization and the customer.	**Career Ready Practice:** 1, 2 **CTE Anchor:** Communications: 2.4 Career Planning and Management: 3.1, 3.2, 3.3, 3.4, 3.5, 3.8, 3.9 **CTE Pathway:** B7.1

SUGGESTED INSTRUCTIONAL MATERIALS and OTHER RESOURCES

TEXTBOOKS

Downing, Douglas, PhD., et al. Dictionary of Computer and Internet Terms. Mc-Graw-Hill Companies, Barron's Educational Series, 2009.

Meyers, Michael. CompTIA A+ Certification All-in-One Exam Guide, 7th Edition. Mc-Graw-Hill Companies, 2010.

Microsoft Press Staff. Microsoft Computer Dictionary, 5th Edition. Microsoft Press, 2002.

RESOURCES

Employer Advisory Board members

CTE Foundation Standards
http://www.cde.ca.gov/ci/ct/sf/documents/ctestandards.pdf
http://www.cde.ca.gov/be/st/ss/documents/ctestandards.doc

Computing Technology Industry Association (CompTIA), 1815 S. Meyers Rd., Suite 300, Oakbrook Terrace, IL 60181-5228. Phone: (630) 678-8300. Fax: (630) 268-1384

COMPETENCY CHECKLIST

TEACHING STRATEGIES and EVALUATION

METHODS AND PROCEDURES

A. Lecture and discussion

B. Demonstrations

C. Individualized instruction

D. Multimedia presentations

EVALUATION

SECTION A – Orientation and Safety – Pass the safety test with 100% accuracy.

SECTION B – Advanced DOS 6.2x– Pass all assignments and exams on advanced DOS 6.2x with a minimum score of 80% or higher.

SECTION C – The Systemboard – Pass all assignments and exams on the systemboard with a minimum score of 80% or higher.

SECTION D – Microprocessors – Pass all assignments and exams on microprocessors with a minimum score of 80% or higher.

SECTION E – Hard Drives– Pass all assignments and exams on hard drives with a minimum score of 80% or higher.

SECTION F – Printers – Pass all assignments and exams on printers with a minimum score of 80% or higher.

SECTION G – Supporting Windows 3.1x – Pass all assignments and exams on supporting Windows 3.1x with a minimum score of 80% or higher

SECTION H – Networking – Pass all assignments and exams on networking with a minimum score of 80% or higher

SECTION I – Monitors – Pass all assignments and exams on monitors with a minimum score of 80% or higher

SECTION J – Multimedia/Peripherals – Pass all assignments and exams on multimedia/peripherals with a minimum score of 80% or higher.

SECTION K – Modems – Pass all assignments and exams on modems with a minimum score of 80% or higher.

SECTION L – Windows 9x – Pass all assignments and exams on Windows 9x with a minimum score of 80% or higher.

SECTION M – Supporting Windows 9x – Pass all assignments and exams on supporting Windows 9x with a minimum score of 80% or higher.

SECTION N – The Internet – Pass all assignments and exams on the internet with a minimum score of 80% or higher.

SECTION O – Troubleshooting Skills – Pass all assignments and exams on troubleshooting skills with a minimum score of 80% or higher.

SECTION P – Employability Skills – Pass all assignments and exams on employability skills with a minimum score of 80% or higher.

Statement for Civil Rights

All educational and vocational opportunities are offered without regard to race, color, national origin, gender, or physical disability.