

# IT 0100 - INFORMATION AND COMMUNICATION TECHNOLOGY ESSENTIALS

## Catalog Description

Formerly known as CIS 26

Hours: 90 (72 lecture, 18 laboratory)

Description: Provides an introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level Information Communication Technology (ICT) professionals.

The fundamentals of computer hardware and software as well as advanced concepts such as security, networking, cloud computing, and the responsibilities of an ICT professional will be introduced. A special emphasis is placed on software, hardware, and network troubleshooting techniques. This course is intended to help students prepare for the CompTIA A+ certification exams. (C-ID ITIS 110) (CSU)

## Course Student Learning Outcomes

- CSLO #1: Research, analyze and evaluate information to solve business problems using appropriate computer hardware technology.
- CSLO #2: Design and produce computer hardware technology solutions incorporating current trends, security, and best practices.
- CSLO #3: Employ computer hardware technology concepts and terminology in professional communication.
- CSLO #4: Demonstrate marketable computer hardware technology career skills.

## Effective Term

Fall 2023

## Course Type

Credit - Degree-applicable

## Contact Hours

90

## Outside of Class Hours

126

## Total Student Learning Hours

216

## Course Objectives

Lecture Objectives:

1. Implement basic data backup and recovery methods and apply data storage and management best practices.
2. Support basic IT infrastructure and networking.
3. Demonstrate baseline security skills for IT support professionals.

Lab Objectives:

1. Configure device operating systems, including Windows, Mac, Linux, Chrome OS, Android and iOS and administer client-based as well as cloud-based (SaaS) software.

2. Troubleshoot and problem solve core service and support challenges while applying best practices for documentation, change management, and scripting.
3. Configure and support PC, mobile and IoT device hardware.

## General Education Information

- Approved College Associate Degree GE Applicability
- CSU GE Applicability (Recommended-requires CSU approval)
- Cal-GETC Applicability (Recommended - Requires External Approval)
- IGETC Applicability (Recommended-requires CSU/UC approval)

## Articulation Information

- CSU Transferable

## Methods of Evaluation

- Objective Examinations
  - Example: Students will be given weekly chapter review questions using True/False, Multiple Choice and Fill-In questions. Standard grading will be used to measure the level of understanding of the topics being covered. Example: True or False: The FAT32 file system allows you to set the following permissions: Full Control, Modify, Read and execute, Read and/or Write Answer: False, those are permissions allowed through NTFS file system.
- Problem Solving Examinations
  - Example: Students will be given a scenario based question describing a problem, and the parameters involved, and asked to determine the proper course of action that needs to be taken to correct the problem. Example – A user has called that they are unable to print to the network printer even though it worked fine yesterday. When questioned, they mention that their office was rearranged yesterday to make room for new furnishings. Upon further questioning they state that there is a network cable coming out of the computer, but no lights indicating connection. What should you ask the user to do next? Student responses will be graded based on a rubric that gives credit for following the logical flow of trouble shooting and also demonstrating an understanding of the problem being addressed.
- Projects
  - Example: Students can be placed in groups to work on a system design project for a new gaming computer. Outcomes would include choosing compatible components that meet the standards required ie: Motherboard, video/graphics cards, RAM.
- Skill Demonstrations
  - Example: Students will complete in-class hands-on lab exercises using a set of instructions provided by the Instructor and will be graded on their results using the provided grading rubric. Example: Installing a new NIC into a working system and insuring that all system components work after the installation is complete. Grading would include checking to see if student used proper safety steps such as static grounding strap and installed the correct driver.

## Repeatable

No

## Methods of Instruction

- Laboratory
- Lecture/Discussion
- Distance Learning

### Lab:

1. The instructor will lead students through a demonstration of the skills for the module on hardware components and review the key concepts of the week after students read the module and complete the review questions and lab exercises. (Lab Objective 1)

### Lecture:

1. After students read the assigned chapter and complete the review questions, the instructor will lead students through a demonstration of the skills for that chapter and review the key concepts of the week through class discussion. (Objective 2) Example: (Lecture Objective 1) You replace a customer's HDD with a Single Ended SCSI system using approximately eight meters of cables in the SCSI system. After this installation the peripherals have stopped functioning. What do you suspect? A. Single Ended SCSI systems use an unbalanced electrical signal. B. Single Ended SCSI systems don't work if the total cable length exceeds 6 meters. C. An improper cable insertion is the problem. D. The cable length is less than the minimum allowed cable length.

### Distance Learning

1. After watching instructor video, students will complete simulated lab activities in the NETLAB+ online environment and submit proof of completion to the instructor for grading. (Lab objective 1)

## Typical Out of Class Assignments

### Reading Assignments

1. Read the course module on device connection and be able to differentiate between connections utilized for input devices and for output devices. 2. Locate and read an online instruction set on proper procedures for installing and configuring Serial ATA Drives and be prepared to discuss in class.

### Writing, Problem Solving or Performance

1. On a computer running a Windows desktop operating system, after running the Windows Experience Index application, ascertain from researching the Internet what steps you could take to improve the systems performance and write a one page report identifying the nature of those steps and the approximate costs (citing vendor sources) of any identified upgrades to the system. 2. Conducting research of freeware applications that would be useful for a PC technician, identify an appropriate freeware tool and be prepared to demonstrate it in class.

### Other (Term projects, research papers, portfolios, etc.)

In-class computer based projects to demonstrate students' ability to apply skill sets from written instructions.

## Required Materials

- CompTia A+ Guide to IT Technical Support All-in-One Exam Guide
  - Author: Andres, Dark, West
  - Publisher: TestOut Corporation
  - Publication Date: 2020
  - Text Edition:
  - Classic Textbook?: No
  - OER Link:
  - OER:
- Mike Meyers' CompTIA A+ Guide to Managing and Troubleshooting PCs (Exams 220-1001 & 220-1002)
  - Author: Meyers, M.
  - Publisher: McGraw-Hill Education
  - Publication Date: 2019
  - Text Edition: 6th
  - Classic Textbook?: No
  - OER Link:
  - OER:

## Other materials and-or supplies required of students that contribute to the cost of the course.