IT 0090 - IT FUNDAMENTALS

Catalog Description

Hours: 36 (27 lecture, 9 laboratory)
Description: Designed to prepare students to explain the basics of computing, IT infrastructure, software development, database use, installing software, establishing basic networking connectivity, and identifying/preventing basic security risks. This course is intended for students who are considering a career in IT and/or later considering the pursuit of completing the CompTIA Fundamentals+ (ITF+) certification exam. (not transferable)

Course Student Learning Outcomes

- CSLO #1: Research, analyze and evaluate information to solve business problems using information technology fundamentals.
- CSLO #2: Identify fundamental computer technology solutions incorporating current trends, security, and best practices.
- CSLO #3: Communicate fundamental information technology concepts and terminology.
- CSLO #4: Demonstrate a foundation of marketable information technology career skills.

Effective Term

Fall 2023

Course Type

Credit - Degree-applicable

Contact Hours

36

Outside of Class Hours

45

Total Student Learning Hours

81

Course Objectives

Lecture Objectives:
1.Identify hardware commonly found in or attached to computing devices.
2.Identify software commonly installed on computing devices.
3.Discuss effective practices to support computers and users.
4.Discuss methods to secure computing devices.
Lab Objectives:
1.Set up a basic workstation.
2.Set up a home network.
3.Set up a website.
4.Converting high-level language instruction to an assembly language instruction.
5.Use a word processing tool.
6.Use a spreadsheet tool.
7.Use a presentation tool.

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

- Not Transferable

Methods of Evaluation

- Classroom Discussions
  - Example: Discussions will be regularly facilitated. An example classroom discussion about securing computing devices might include a discussion of the following scenario and prompts: As part of your internship, you are working with the security team to create a security policy for the company. There currently isn't anything in writing about how to protect systems from hackers or protecting hardware and data from being stolen. Recently, there have been several viruses discovered on computers. One of the employees had his laptop stolen from his hotel room while he was traveling. Also, some of the old equipment was recently set out on the shipping dock awaiting disposal and some of it seems to have gone missing. 1. What should be included in the policy manual regarding virus protection? 2. How can computing devices be secured while an employee is traveling to help prevent theft of the devices? Students will be evaluated based on the accuracy and completeness, using a rubric.
- Objective Examinations
  - Example: In order to prepare students to take the CompTIA IT Fundamentals Exam (FC0-U51), a final exam consisting of 75 multiple choice questions will be administered. The exam questions will be distributed across 5 domains: Software (21% of questions), Hardware (18% of questions), Security (21% of questions), Networking (16% of questions), and Basic IT Literacy (24% of questions). Example: Which of the following is a file on a computer that links to another program or file somewhere else on the same computer? A) Shortcut B) URL C) Attachment D) FTP Questions will be scored for accuracy.
- Skill Demonstrations
  - Example: After participating in lecture and classroom discussion, students may be asked to demonstrate a skill that results from one of the lecture objectives. An example of a skill demonstration is a student configuring a device to connect to a wireless network. Students will be evaluated based on the accuracy and completeness, using a rubric.

Repeatable

No

Methods of Instruction

- Laboratory
- Lecture/Discussion
- Distance Learning

Lab:

1. Example #2 - Instructor will provide a review of the course content around basic workstation setup and students will sSetup a basic

workstation (Lab Objective 1) Connecting Hardware: Student will be provided with a desktop computer equipped with a digital video interface and a 15-pin VGA-style monitor port, or a digital flat-panel LCD monitor that uses the 29-pin DVI connector or an HDMI connector. The computer will be turned off, and a power cord, monitor, keyboard, and mouse will be made available. Other peripheral devices such as speakers, webcams, or USB hubs might also be available. Students will be prompted with a scenario – "You are a new computer support intern at Develetech Industries. Your first assignment is to build yourself a Windows desktop computer to use during your internship."

Lecture:

1. Example #1 - Identify hardware commonly found in or attached to computing devices. (Lecture Objective 1) The instructor will guide students through a lecture about "Types of Computing Devices". Personal Computers (Desktops, All-in-One Desktops and Laptops), Servers, Tablets, Smartphones and Other Computing Devices will be defined and examples will be provided for each. After the lecture, students will engage in a discussion in which they select the appropriate computing device for a given scenario.

Distance Learning

1. The LMS can be used to initiate discussion between the instructor and students, as well as, student to student similar to those that would take place in an on-ground course. A live online lab is initiated by the instructor to have group discussion, demonstrate lab exercises and allow students to ask questions. Lab Example 1: Log into the Cisco website provided and complete Lab 3, connecting peripheral devices. Capture a print screen image at the end of the lab to show you successfully completed it and paste that image into a Word document and submit to the link in Canvas (or the current LMS). (Lab Objective 1) Lab Example 3: Log into NETLAB+ using the information provided and complete Lab 12 - sharing a folder. When you have completed step 11 capture a screen image of the desktop, paste that image into a Word document and submit to the link in LMS. (Lab Objective 3)

Typical Out of Class Assignments Reading Assignments

1. Students will be required to complete weekly readings from the assigned course text on software, hardware, security, networking and basic IT literacy. After reading a chapter, students may be expected to be prepared to discuss in class or on a discussion board or perhaps answer end of chapter questions. 2. Students will be using Internet resources to research best practices for Information Technology support and service, as well as cybersecurity. After researching, students may be expected to be prepared to discuss in class or on a discussion board.

Writing, Problem Solving or Performance

1. Compose a discussion post that describes importance and impact of various environmental and safety concepts. 2. Utilize a web application to virtually build a computer, which meets specific requirements regarding items, such as processor, motherboard, case, graphics card, RAM, storage, CPU cooler, case cooler, power supply, monitor, accessories, sound card, wireless network adapter, operating system, and utilities.

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

1. Write a research paper comparing and contrasting different methods of sharing and storage.

Required Materials

- Computing Technology for All
  - Author: Frank Vahid
  - Publisher: zyBooks
  - Publication Date: 2022
  - Text Edition: n/a
  - Classic Textbook?: No
  - OER Link:
  - OER:
- CompTIA IT Fundamentals (Exam FC0-U61) Certification Handbook
  - Author: CompTIA
  - Publisher: CompTIA
  - Publication Date: 2022
  - Text Edition:
  - Classic Textbook?: No
  - OER Link:
  - OER:

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