CS 80.15 Course Outline as of Fall 2024

CATALOG INFORMATION

Dept and Nbr: CS 80.15 Title: IT ESSENTIALS 1
Full Title: IT Essentials 1: PC Hardware and Software
Last Reviewed: 8/14/2023

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	4.00	17.5	Lecture Scheduled	70.00
Minimum	4.00	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	70.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 140.00 Total Student Learning Hours: 210.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	CIS 56.11

Catalog Description:
Information Technology (IT) Essentials curriculum introduces students to the computer hardware and software skills needed to help meet the growing demand for entry-level Information Communication Technology (ICT) professionals. The curriculum covers the fundamentals of computer hardware and software as well as advanced concepts such as security, networking, and the responsibilities of an ICT professional. The IT Essentials (ITE) curriculum emphasizes practical experience to help students develop fundamental computer and career skills. ITE helps students prepare for entry-level career opportunities in ICT and the CompTIA A+ certification. The course also provides a learning pathway to Cisco Certified Network Associate (CCNA).

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:

Description: Information Technology (IT) Essentials curriculum introduces students to the computer hardware and software skills needed to help meet the growing demand for entry-level Information Communication Technology (ICT) professionals. The curriculum covers the fundamentals of computer hardware and software as well as advanced concepts such as security, networking, and the responsibilities of an ICT professional. The IT Essentials (ITE) curriculum emphasizes practical experience to help students develop fundamental computer and career skills. ITE helps students prepare for entry-level career opportunities in ICT and the CompTIA A+ certification. The course also provides a learning pathway to Cisco Certified Network Associate (CCNA). (Grade or P/NP)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Spring 2009	Inactive:	
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Describe the internal components of a computer.
2. Use common safety procedures to assemble the hardware components of a computer system and install an operating system.
3. Troubleshoot computers using system tools and diagnostic software.

Objectives:
At the conclusion of this course, the student should be able to:
1. Integrate the components of a personal computer.
2. Describe and implement procedures to protect themselves against accidents and injury and protect equipment from damage.
3. Specify the purpose of computer preventive maintenance.
4. Coordinate the installation of an operating system and upgrade components based on customer needs.
5. Manage the removal and replacement of select components of a laptop and upgrade components based on customer needs.
6. Manage the removal and replacement of select components of a printer.

7. Design and install a simple computer network based on customer needs.
8. Perform preventive maintenance and advanced troubleshooting.
9. Demonstrate good communication skills and professional behavior while working with customers.
10. Coordinate security upgrades based on customer needs.

Topics and Scope:

I. Safety and Professionalism
- A. Summarize environmental impacts and local environmental controls.
- B. Use common safety procedures.
- C. Meet customer needs with proper communication techniques and professionalism.
- D. Explain the importance of prohibited content/activity and privacy, licensing, and policy concepts.

II. Hardware
- A. Explain basic cable types and their connectors, features, and purposes.
- B. Install and configure components for a desktop computer.
- C. Troubleshoot problems related to computer hardware.

III. Laptops and Mobile Devices
- A. Compare and contrast components of laptops and mobile devices.
- B. Install and configure laptop hardware and components.
- C. Set up and configure accessories and ports of mobile devices.
- D. Troubleshoot common issues with laptops and mobile devices

IV. Printers
- A. Deploy and configure printers.
- B. Install and replace printer consumables.
- C. Troubleshoot and resolve printer issues.

V. Networking
- A. Compare and contrast Internet connection types, network types, and their features.
- B. Compare and contrast wired/wireless protocols, and their purposes.
- C. Compare and contrast common networking hardware.
- D. Install and configure basic wired/wireless networks.
- E. Configure basic mobile-device network connectivity and application support.
- F. Troubleshoot problems with wired and wireless networks.

VI. Operating Systems (OS)
- A. Explain common OS types and their purposes.
- B. Identify basic features of Microsoft Windows editions.
- C. Perform OS installations and upgrades.
- D. Use the appropriate Windows tools and utilities.
- E. Troubleshoot common Windows OS problems.

VII. Security
- A. Summarize various security measures and their purposes.
- B. Compare and contrast wireless security protocols and authentication methods.
- C. Detect, remove, and prevent malware using the appropriate tools and methods.
- D. Explain common social-engineering attacks, threats, and vulnerabilities.
- E. Manage and configure basic security settings in the Microsoft Windows OS.
- F. Explain common methods for securing mobile and embedded devices.
- G. Configure appropriate security settings on wireless and wired networks.
- H. Troubleshoot common personal computer (PC) security issues.

VIII. Virtualization and Cloud Computing
- A. Summarize cloud-computing concepts.
- B. Summarize aspects of client-side virtualization.

Assignment:

1. Reading assignments may include:
   A. Online research of best practices and current equipment
   B. Weekly reading from textbook (approximately 40 pages)
2. Quizzes and exams (9-15)
3. Skill demonstration examinations of computer and network device installation configuration
4. Classroom scenario-based exercises of computer and network device installation configuration
5. Homework problems, including:
   A. Creation of network design diagrams and layouts
   B. Online multiple choice, true/false, matching items, completion quizzes, and simulated equipment configuration

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems	Problem solving 15 - 30%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Computer and network device installation configuration	Skill Demonstrations 20 - 30%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes and exams	Exams 20 - 30%

Other: Includes any assessment tools that do not logically fit into the above categories.

Attendance and participation in scenario based exercises	Other Category 10 - 25%

Representative Textbooks and Materials:
COMPTIA A+ Guide to Information Technology Technical Support (MindTap Course List). 11th ed. Andrews, Jean and Dark, Joy and Pierce, Nicholas. Cengage Learning. 2022.