

Montgomery County Community College
 CIS 113
 IT Hardware Essentials and Support
 3-2-2

COURSE DESCRIPTION:

Students develop the necessary skills to support personal computers by solving common PC hardware and software problems. Students will learn to install and maintain a variety of processors, operating systems, and applications. Successful completion of the course prepares students for the A+ Certification examination sponsored by the Computing Technology Industry Association.

PREREQUISITE(S):

None

CO-REQUISITE(S):

None

Upon successful completion of this course, the student will be able to:

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
1. Describe how the various PC components work and interact.	Lecture Discussion	Hands-On Lab Exercises Homework Assignments Individual or Group Projects Quizzes Exams
2. Install and troubleshoot the hardware components of a PC.	Lecture Discussion	Hands-On Lab Exercises Homework Assignments Individual or Group Projects Quizzes Exams
3. Install and troubleshoot Operating Systems.	Lecture Discussion	Hands-On Lab Exercises Homework Assignments Individual or Group Projects Quizzes Exams

LEARNING OUTCOMES	LEARNING ACTIVITIES	EVALUATION METHODS
4. Apply the basic fundamentals of networking, security and the internet.	Lecture Discussion	Hands-On Lab Exercises Homework Assignments Individual or Group Projects Quizzes Exams
5. Apply basic troubleshooting concepts and diagnostic tools.	Lecture Discussion	Hands-On Lab Exercises Homework Assignments Individual or Group Projects Quizzes Exams

At the conclusion of each semester/session, assessment of the learning outcomes will be completed by course faculty using the listed evaluation method(s). Aggregated results will be submitted to the Associate Vice President of Academic Affairs. The benchmark for each learning outcome is that *70% of students will meet or exceed outcome criteria*.

SEQUENCE OF TOPICS:

1: Introduction to the Personal Computer 1.1 Personal Computer Systems 1.2 Select Computer Components 1.3 Configurations for Specialized Computer Systems
2: Introduction to Lab Procedures and Tool Use
3: Computer Assembly 3.1 Assemble the Computer 3.2 Boot the Computer 3.3 Upgrade and Configure a Computer
4: Overview of Preventive Maintenance
5: Windows Installation 5.1 Modern Operating Systems 5.2 Operating System Installation
6: Windows Configuration and Management 6.1 Windows Desktop, Tools, and Applications 6.2 Client-Side Virtualization 6.3 Manage System Services 6.4 Common Preventive Maintenance Techniques for Operating Systems 6.5 Basic Troubleshooting Process for Operating Systems
7: Networking Concepts 7.1 Principles of Networking 7.2 Networking Standards

7.3 Physical Components of a Network
7.4 Basic Networking Concepts and Technologies
8: Applied Networking
8.1 Computer to Network Connection
8.2 ISP Connection Technologies
8.3 Internet Technologies
8.4 Common Preventive Maintenance Techniques Used for Networks
8.5 Basic Troubleshooting Process for Networks
9: Laptops and Mobile Devices
9.1 Laptop Components
9.2 Laptop Configuration
9.3 Laptop Hardware and Component Installation and Configuration
9.4 Mobile Device Hardware Overview
9.5 Common Preventive Maintenance Techniques for Laptops and Mobile Devices
9.6 Basic Troubleshooting Process for Laptops and Mobile Devices
10: Mobile, Linux and OS X Operating Systems
10.1 Mobile Operating Systems
10.2 Methods for Securing Mobile Devices
10.3 Network Connectivity and Email
10.4 Linux and OS X Operating Systems
10.5 Basic Troubleshooting Process for Mobile, Linux, and OS X Operating Systems
11: Printers
12: Security: Implement host, data, and network security.
12.1 Security Threats
12.2 Security Procedures
12.3 Common Preventive Maintenance Techniques for security
12.4 Updates and patches
12.5 Logging and Auditing
12.6 Host Intrusion Detection
12.7 Basic Troubleshooting Process for Security
12.8 Security Policy
13: The IT Professional
13.1 Communication Skills and the IT Professional
13.2 Ethical and Legal Issues in the IT Industry
13.3 Call Center Technicians
14: Advanced Troubleshooting
14.1 Computer Components and Peripherals
14.2 Operating Systems
14.3 Networks
14.4 Security

LEARNING MATERIALS:

Cisco Networking Academy. (2016). IT Essentials Course Booklet, Version 6. ISBN: 9781587133565. Cisco Press

COURSE APPROVAL:

Prepared by: Lee Bender	Date: 3/2000
Revised by: Jeff Bowker	Date: 12/2012
VPAA/Provost or designee Compliance Verification: Victoria Bastecki-Perez, Ed.D.	Date: 7/11/2013
Revised by: Anil Datta	Date: 5/5/2016
VPAA/Provost or designee Compliance Verification: Victoria Bastecki-Perez, Ed.D.	Date: 6/2/2016
Revised by: Matthew Krause and Marie Hartlein	Date: 1/28/2020
Provost or designee Compliance Verification:	Date: 2/26/2020



This course is consistent with Montgomery County Community College's mission. It was developed, approved and will be delivered in full compliance with the policies and procedures established by the College.