Department Chair: Merrill Siegel
Program Coordinator: Adeleye Bamkole

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Course Code: CIS 116   **Course Title:** Software/Hardware Maintenance & Diagnostics

Department: CIS/Engineering

Course Description: This course provides students with the knowledge and skills necessary to install, troubleshoot, and upgrade software and hardware components, and to maintain and replace parts for PCs. Students learn how to properly handle system components, use hardware and software diagnostics tools to troubleshoot problems, and fix or replace the failed components. Proper techniques to assemble and disassemble a microcomputer system are also covered. Successful completion of this course prepares students to take the CompTIA (Computing Technology Industry Association's) A+ certification exam and Microsoft Technology Associate (MTA) exam.

Prerequisites: CIS 101 or CIS 107

Credits: 3   **Lecture Hours:** 2   **Lab/Studio Hours:** 2   **Clinical/Fieldwork Hours:** 0

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Required Textbook/Materials: **A+ Guide to IT Technical Support, Jean Andrews**

Reference: COMPTIA A+ Complete Review Guide by Emmett Dulaney, SYBEX

Additional Time and Supplemental Requirements:
Students are expected to spend a minimum of 8 hours outside of class doing homework each week.

Special Facilities/Equipment:
Hardware: Intel based system, Routers, Access Point, and Wireless NIC,

Software: Microsoft Windows Server OS, Windows 10 Professional, MAC OS, Red Hat Linux or any latest version of OS, Antivirus software etc.

COVID-19:
On-Campus Requirements during COVID-19: Passaic County Community College has created a thorough plan for maintaining a healthy environment while on campus during the COVID-19 Pandemic. You are required to wear your mask, maintain safe social distances and wash your hands frequently. Also, remember to use hand sanitizer stations, and do not gather in groups. Maintaining a healthy campus will require all of us to do our part. If we take these simple precautions, we can have a safe and productive semester.

Course Learning Outcomes:
Upon completion of this course, students will be able to:
- Set up and configure systems and peripherals.
- Install and configure system software and application software
- Troubleshoot and upgrade hardware/ software components.
- Install and configure storage and I/O devices interfaces.
- Install and configure network hardware components.
- Customize a Personal Computer System with peripheral equipment.
- Understand and manage memory.
- Describe the architecture of a typical microcomputer system
- Understand and support Windows 8.1 / 10 Professional.
- Also identify which, if any, core competencies (General Education)

General Education Outcomes: This is not a general education course**.**

Grading Standards:
Students will be graded on the basis of testing and an evaluation of projects assigned by the instructor. The grade will be determined by the following: 40% written tests, 20% Lab Projects / Assignments, 30% Final Exam and 10% attendance

Course Content: (Schedule and suggested topics, readings, and assignments subject to change based on instructor and instructional resource)

TOPICS	CHAPTERS
Taking computer Apart and Putting It Back Together	1
All About Motherboards	2
Supporting processors and Upgrading Memory	3
Supporting the Power System and Troubleshooting Computers, Supporting hard drives and Storage Devices	4 & 5
Supporting I/O Devices	6
Setting up A Local Area Network Network Infrastructure and Troubleshooting	7 & 8
Supporting Mobile Operating Systems Windows Resources on a Network Supporting Printers and Customizing a System Virtualization, Linux, and Mac OS X	9 &10

Windows Versions and Customer Service
        Installing Windows   11 & 12

Maintaining and Optimizing Windows   13, 14 & 15
Troubleshooting Windows After Startup
Troubleshooting Windows Startup

Securing and Sharing Windows Resources   16, 17 & 18
Security Strategies and Documentations
MacOS, Linux and Scripting

Class Policies:
1) Students are reminded of the College Academic Integrity policy for Passaic County Community College. Students are urged to conduct themselves accordingly.

2) Attendance required.

3) Homework and projects mandatory, collected on the due dates at the beginning of the classes. No late projects or homework will be collected, except for emergencies with valid reasons.

4) Classroom exams will be announced in advanced. No makeup exams given unless under valid emergency. Students are required to call in to inform the Professor prior to the class.

College Policies:
For Information regarding:
- PCCC's Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process
Please refer to the PCCC Student Handbook and PCCC Catalog

Panther Alert:
The College will announce delayed openings, closings, and other emergency situations through the Panther Alert System. Students are encouraged to sign up for Panther Alert Notifications by logging into their student accounts through the PCCC website at www.pccc.edu and following Panther Alert System instructions.

Notification for Students with Learnings Disabilities:
If you have a disability, and believe you need accommodations in this class, please contact the Office of Disabilities Services (ODS) at 973-684-6395, or email ods@pccc.edu. You should do so as soon as possible at the start of each semester. If you require testing accommodations, you must remind me (the instructor) one week in advance of each test.

Date last modified: December 2020