

Tompkins Cortland Community College
Master Course Syllabus

Course Discipline and Number: CSS 112
Course Title: Hardware Repair and Maintenance

Year: 2020-2021
Credit Hours: 3

Attendance Policy: *To maintain good grades, regular attendance in class is necessary. Absence from class is considered a serious matter and absence never excuses a student from class work. It is the responsibility of all instructors to distribute reasonable attendance policies in writing during the first week of class. Students are required to comply with the attendance policy set by each of their instructors. Students are not penalized if they are unable to attend classes or participate in exams on particular days because of religious beliefs, in accordance with Chapter 161, Section 224-a of the Education Law of the State of New York. Students who plan to be absent from classroom activity for religious reasons should discuss the absence in advance with their instructors. See college catalog for more information.*

Services for Students with Disabilities: *It is the College's policy to provide, on an individual basis, appropriate academic adjustments for students with disabilities, which may affect their ability to fully participate in program or course activities or to meet course requirements. Students with disabilities should contact the Coordinator of Access and Equity Services, to discuss their particular need for accommodations. All course materials are available in alternate formats upon request.*

Course Description

This course prepares students for building, upgrading, maintaining, and repairing personal computers and peripherals. Students acquire an awareness of service shop practice, shop safety, and business practice. They learn through hands-on practice with hand tools and test equipment. Prerequisites: ENGL 099 or prior completion or concurrent enrollment in ESL 120, 121, and 122 (or prior completion of ESL 103) if required by placement testing; prior completion or concurrent enrollment in MATH 095 and RDNG 099 if required by placement testing. 3 Cr. (2 Lec., 2 Lab.) Fall semester.

Course Context/Audience

This is a required course for Computer Support Specialist (CSS) majors. It may be of interest to other students who want to learn about computer hardware repair and maintenance.

Basic Skills/Entry Level Expectations

Writing: W2 Student should have completed ENGL 099 (if needed). The course requires short written responses and/or short papers without documentation, particularly personal reflection or narrative.

Math: M3 Taking MATH 095 (if needed) – Course requires the use of basic mathematical skills plus very limited basic algebra skills.

Reading: R1 Course may be taken concurrently with RDNG 099.

Course Goals

This course has four primary goals:

1. To help students develop hardware troubleshooting skills.
2. To help students develop hardware installation skills.
3. To help students develop hardware configuration and upgrading skills.
4. To help students learn how to use hand tools and test equipment, inventory tracking systems and interpret technical manuals.

Course Objectives/Topics

Objective/Topic	# Hours
The student will be able to recognize the importance and increased need for hardware repair and maintenance.	2 Hours
The student will be able to effectively document and track hardware inventory.	2 Hours

The student will be able to list and describe hardware diagnostic and repair tools.	2 Hours
The students will be able to identify and solve computer communication problems.	2 Hours
The student will be able to apply safe shop practices.	2 Hours
The student will be able to list and describe types and components of the Motherboard.	2 Hours
The student will be able to list and describe the boot process steps.	2 Hours
The student will be able to list and describe ports and expansion slots.	2 Hours
The student will be able to run hard disk optimization tools.	2 Hours
The student will be able to list and describe different CPU chips.	2 Hours
The student will be able to install and/or upgrade computer components such as: Hard drive, Memory, Network card, USB port, CD and/or DVD.	15 Hours
Students will be able to detect problems and repair and/or replace the following: Printer, Power supply, Mouse.	15 Hours
Students will be able to build a computer system.	10 Hours
Total	75 Hours

General Education Goals - Critical Thinking & Social/Global Awareness

CRITICAL THINKING OUTCOMES	HOW DOES THE COURSE ADDRESS THE OUTCOMES (Include required or recommended instructional resources, strategies, learning activities, assignments, etc., that must or could be used to address the goal/outcomes)
<p>Students will be able to</p> <ul style="list-style-type: none"> ➤ develop meaningful questions to address problems or issues. ➤ gather, interpret, and evaluate relevant sources of information. ➤ reach informed conclusions and solutions. ➤ consider analytically the viewpoints of self and others. 	<p>Student will use both software and hardware vendor supplied documentation, in addition to company provided documentation for guidance in hardware installation and configuration.</p> <p>The student must apply both technical knowledge and practiced hardware installation and repair skills. The hardware problem solving process in this course requires that the student look at alternative solutions to a problem and evaluate those solutions for the most effective solution.</p>
SOCIAL/GLOBAL AWARENESS OUTCOMES	HOW DOES THE COURSE ADDRESS THE OUTCOMES (Include required or recommended instructional resources, strategies, learning activities, assignments, etc., that must or could be used to address the goal/outcomes)
<ul style="list-style-type: none"> ➤ Students will begin to understand how their lives are shaped by the complex world in which they live. ➤ Students will understand that their actions have social, economic and environmental consequences. 	<p>Not Addressed</p>

Instructional Methods

Technical terminology and concepts should be communicated through class lecture and discussion. There should be class-time for hands-on installation, configuration, repair and maintenance of hardware. In addition, students should be required to tear down an existing system, label and inventory all components, and rebuild the same system.

Methods of Assessment/Evaluation

Method	% Course Grade
Minimum of 4 exams and/or final examination.	60%
A major project of tearing down and rebuilding a system, and additional small projects as required in order to cover all objectives.	40%

Text(s)

A+ Guide to Managing and Maintaining Your PC, Jean Andrews, 6th Edition, © 2007 Course Technology

Bibliography

PC Troubleshooting Pocket Guide, 3rd edition, Course Technology, ISBN: 0-619-18620-8.

Lab Manual for A+ Guide to Managing and Maintaining Your PC, 4th edition, Course Technology, ISBN: 0-619-18619-4.

Mueller, Scott. Upgrading and Repairing PCs, 18th edition, © 2007 QUE.

Other Learning Resources

Audiovisual No resources specified
Electronic No resources specified
Other No resources specified