

PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

**MICROCOMPUTER ARCHITECTURE
EET 1715**

Class Hours: 1
Laboratory Hours: 3

Credit Hours: 2
Date Revised: Spring 2017

Catalog Course Description

This course provides an opportunity for students to obtain knowledge and skills necessary to service microcomputer hardware and supported peripherals. The course includes identifying parts of a PC; discussing the functions and interactions of all PC subsystems; identifying and troubleshooting common PC hardware problems; installing, replacing, and upgrading PC hardware components; and installing and troubleshooting PC peripherals such as video cameras and additional monitors.

Prerequisites

NONE

Corequisites

NONE

Textbook(s) and Other Course Materials

A+ Guide to Managing and Maintaining Your PC. Latest edition. Canada: Course Technology Publishers. *A+ Guide to Managing and Maintaining Your PC Lab Manual*. Latest Edition. Canada: Course Technology Publishers.

Week/Unit/Topic Basis

Week	Topic
1	Lecture: Introducing Hardware - <i>Lab: 1.1, 1.2, 1.3</i>
2	Lecture: Introducing Operating Systems - <i>Lab: 2.1, 2.2, 2.6</i>
3	Lecture: Electricity & Power Supplies - <i>Lab: 4.1, 4.2</i>
4	Lecture: Electricity & Power Supplies - <i>Lab: 4.3, 4.6 - Test 1</i>
5	Lecture: The Motherboard - <i>Lab: 5.1, 5.2, 5.4</i>
6	Lecture: Supporting Processors - <i>Lab: 6.1, 6.2</i>
7	Lecture: Upgrading Memory - <i>Lab: 7.1, 7.3 - Test 2</i>
8	Lecture: Supporting Hard Drives - <i>Lab: 8.2, 8.3</i>
9	Lecture: Supporting Hard Drives - <i>Lab: 8.4, 8.5, 8.7.</i>
10	Lecture: Installing and Supporting I/O Devices - <i>Lab: 9.1, 9.2</i>
11	Lecture: Multimedia Devices and Mass Storage - <i>Lab: 10.1, 10.2, 10.3, 10.4 - Test 3</i>
12	Lecture: PC Maintenance - <i>Lab: 11.2, 11.4</i>
13	Lecture: Networking Essentials - <i>Lab: 17.1, 17.2</i>
14	Lecture: Networking Practices - <i>Lab: 18.1, 18.6, 18.7 - Test 4</i>
15	Final Exam

Engineering Technology General Outcomes (Educational objectives)

- I. Apply basic engineering theories and concepts creatively to analyze and solve technical problems
- II. Utilize with a high degree of knowledge and skill equipment, instruments, software, and technical reference materials currently used in industry.
- III. Communicate effectively using developed writing, speaking, and graphics skills.
- IV. Assimilate and practice the concepts and principles of working in a team environment.
- V. Obtain employment within the discipline or matriculate to a four year program in engineering or industrial technology

Engineering Technology Concentration Competencies

NOTE: At the program level all 6 competencies apply to roman numerals I – V of the Engineering Technology General Outcomes (Educational objectives) listed above.

The Students will:

- A. Apply the knowledge, techniques, skills, and modern tools for the concentration of study to specifically defined engineering technology activities
- B. Demonstrate the knowledge of mathematics, science, engineering and technology to engineering technology problems using developed practical knowledge
- C. Conduct and report the results of standard tests and measurements, and conduct, analyze and interpret experiment or project results
- D. Function effectively as a member of a technical team
- E. Identify, analyze and solve specifically defined engineering technology-based problems
- F. Employ Written, oral and visual communication in a technical environment

Course Goals

NOTE: Capital letters after course goals reference the competencies of the Engineering Technology concentrations listed above.

The course will

1. Expand student's knowledge of Computer Hardware. (A, C, D)
2. Expand student's knowledge computer operating systems. (A, B, C, D)
3. Teach students motherboard Form Factors and how it relates to power supply. (A, B, C, E)
4. Identify Motherboard parts and demonstrate how to adjust CMOS settings. (A, B, E)
5. Identify CPU information and how to replace a CPU. (A, B, C, D, E, F)
6. Identify memory requirements and how to upgrade the system memory. (A, B, C, D, E, F)
7. Demonstrate how to Test hard drives, how to replace the hard drives and add additional hard drives. (A, B, C)
8. Demonstrate how to install and support I/O devices. (C, F)
9. Demonstrate how to install or replace Multimedia Devices and Mass Storage devices. (A, B, C, D, E)
10. Enhance student's ability to troubleshoot PC hardware safely. (A, B, C, E)
11. Demonstrate how to setup a Network. (A, B, D, E)

12. Work in a team environment during laboratory sessions and develop written reports to
13. Communicate the principles learned through the experiment. (C, D, F)

Expected Student Learning Outcomes

NOTE: Numbers after Expected Student Learning Outcomes reference the course goals listed above.

The student will

- a. Identify Computer Parts. (1)
- b. Record computer system information. (1)
- c. Use Shareware to examine a computer. (2)
- d. Convert Binary and Hexadecimal numbers. (2)
- e. Identify From Factors (3)
- f. Take a computer apart and put it back together. (3)
- g. Measure the output of a power supply. (3)
- h. Adjust CMOS settings. (4)
- i. Remove and replace a CPU (5)
- j. Research RAM on the internet to select proper memory to upgrade computers. (6)
- k. Test hard drive using Sandra. (7)
- l. Install a hard drive. (7)
- m. Identify hardware conflicts using device manager. (8)
- n. Install a sound card. (9)
- o. Install a PC video camera. (9)
- p. Install dual displays in windows. (9)
- q. Safely troubleshoot a hardware problem. (10)
- r. Connect two computers. (11)
- s. Install software to delete Cookies.(11)
- t. Set up a wireless router. (11)
- u. Communicate important power system principles in written or graphical form. (12)

Evaluation

Testing Procedures	80% of grade
Chapter Tests	40%
Quizzes	20%
Final Exam	20%

Laboratory Expectations: 20% of grade

The laboratories for all EET courses are an essential part of conveying the concepts to the student. The labs would closely follow the classes in content and in time of presentation so that the student is actually verifying these concepts to his or her self. The student will be able to apply the theory learned in class. The laboratory grade will be determined by a combination of performance within the lab and the quality and demonstrated comprehension of the lab report. There will be at least twelve labs during the semester to go along with the classroom material.

Performance in labs (subjective) 50%

Lab Reports (neatness and content) 30%

Laboratory Test 20%

Field Work

Students shall participate in one class field trip. A report will be required that will be part of the laboratory grade.

Other Evaluation Methods: None

Grading Scale

A	93 - 100
B+	88 - 92
B	83 - 87
C+	78 - 82
C	70 - 77
D	60 - 69
F	Below 60

Policies

Attendance Policy

Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.

Academic Dishonesty

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one's own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.
- Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. [Disability Services](#) (<http://www.pstcc.edu/sswd/>) may be contacted via [Disability Services email](#) or by visiting Alexander 130.