PELLISSIPPI STATE COMMUNITY COLLEGE
MASTER SYLLABUS

MICROCOMPUTER ARCHITECTURE
EET 1715

Class Hours: 1.0  Credit Hours: 2.0
Laboratory Hours: 3.0  Date Revised: Spring 2011

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.

Entry Level Standards:

The student needs to be able to read and write.

Prerequisites:

None

Corequisites:

None

Textbook(s) and Other Course Materials:


I. Week/Unit/Topic Basis:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Introducing Hardware</td>
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<tr>
<td>2</td>
<td>How Hardware &amp; Software Work Together</td>
</tr>
<tr>
<td>3</td>
<td>Understanding the Boot Process &amp; Command Line</td>
</tr>
<tr>
<td>4</td>
<td>Electricity &amp; Power Supplies</td>
</tr>
<tr>
<td>5</td>
<td>The Motherboard</td>
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<tr>
<td>6</td>
<td>The Motherboard</td>
</tr>
<tr>
<td>7</td>
<td>Managing Memory</td>
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<tr>
<td>8</td>
<td>Managing Memory</td>
</tr>
</tbody>
</table>
The course will

A. Discuss the fundamentals of troubleshooting and basic preventive and corrective maintenance practices. I, II, III

B. Describe the basic characteristics of the IBM Personal Computer (PC), PC clones, and the Intel microprocessor family. I, II, III

C. Use MS DOS to create and manipulate files. I, II

D. Use all features of Windows 9x and XP to maintain and operate a system. I, II

E. Describe the operation and maintenance of basic hardware components and peripherals of the PC including the motherboard, hard disks, floppy disk drives, CD ROM drives, memory, keyboards, power supplies, video displays, sound cards and speakers and printers. I, II, III

F. Explain the use of software diagnostics and the built-in self tests. I, II, III

G. Connect two or more PC’s in a network. I, II

*Roman numerals after course goals reference goals of the Engineering Technology program (Career Program Goals and General Education Goals are listed http://www.pstcc.edu/departments/curriculum_and_instruction/syllabi/)

III. Expected Student Learning Outcomes*

Students will be able to:

1. Explain the importance PC Diagnostics and error detection. A

2. Know what to do following a system crash. A

3. Develop a preventive maintenance schedule. A

4. Develop problem isolation techniques for corrective maintenance. A

5. Interpret error messages created by the POST test. A

6. Use the diagnostics diskette for routine diagnostics and use the diagnostic diskette for troubleshooting. F
7. Fully understand the function and use of device drivers. F
8. Fully understand the function and use of the registry. D
9. Calculate power requirements for a computer and identify power supply problems and understand power supply replacement procedures. B
10. Troubleshoot system board problems. B
11. Understand chip handling precautions. E
12. Explain computer memory and memory expansion principles. E
13. Utilize memory diagnostics to locate memory problems. E
14. Utilize various diagnostics to isolate problems related to the diskette and hard drive. D,E
15. Understand data recovery techniques. F
16. Install or swap new floppy drives or hard drives. D, E
17. Interpret keyboard error codes and understand keyboard diagnostics and repair or replace keyboard. D, E
18. Explain different display adapter hardware. D, E
19. Utilize display adapter diagnostics and understand the error codes. E
20. Utilize modem diagnostics. E
21. Understand communication line problem techniques. E
22. Understand system configuration requirements. D
23. Utilize printer diagnostics and utilize printer troubleshooting techniques to isolate problems. I
24. Understand network configurations and strategies. E, F
25. Install network hardware and software. E, F
26. Understand network administration. E, F, G

* Capital letters after Expected Student Learning Outcomes reference the course goals listed above.

**IV. Evaluation:**

A. Testing Procedures: 70% of grade

Classroom evaluation will be through examination of homework assigned on a weekly basis, periodic quizzes, a series of chapter or topic tests, and a comprehensive final examination.

<table>
<thead>
<tr>
<th>Item</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>20%</td>
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<tr>
<td>Tests</td>
<td>30%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
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B. Laboratory Expectations: 30% of grade
The laboratory evaluation will be a combination of performance in the lab, the quality of the lab report, and comprehension of material covered and laboratory techniques. It is important to note that the course cannot be passed unless the laboratory part of the course is passed.

C. Field Work: None

D. Other Evaluation Methods: None

E. Grading Scale:

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

V. Policies

A. 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 the Learning Division, 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 the Learning Division.

- Class Attendance for Lab: Attendance is required to all lab sessions unless excused by the instructor. Students missing more than four unexcused sessions will receive an "F" and no credit will be received. Students tardy past half an hour will be considered absent.

B. 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.

C. Accommodations for disabilities:

Students who 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 Services for Students with Disabilities (SSWD) in order to receive accommodations in this course. Services for Students with Disabilities may be contacted by going to Goins 127, 132, 134, 135, 131 or by phone: 539-7153 or TTY 694-6429. More information is available at www.pstcc.edu/departments/swd/.

D. Other Policies: