BRAZOSPORT COLLEGE

LAKE JACKSON, TEXAS

SYLLABUS

CPMT 1411: INTRODUCTION TO COMPUTER MAINTENANCE

COMPUTER TECHNOLOGY & OFFICE ADMINISTRATION DEPARTMENT

CATALOG DESCRIPTION

CPMT 1411 Introduction to Computer Maintenance CIP 4701040011
An introduction to the installation, configuration and maintenance of a microcomputer system. A combination of lecture, demonstration, and hands-on experience will include expanding and upgrading systems, component installation, problem detection and preventive maintenance.
(4 SCH, 3 lecture, 2 lab)
Prerequisite: Concurrent enrollment in ITSC 1305 *or approval of the division chair*.
Required skill level code: Reading, 9.

PREPARED BY: _____ DATE: _____
INSTRUCTOR

RECOMMENDED BY: _____ DATE: _____
DIVISION CHAIRMAN

RECOMMENDED BY: _____ DATE: _____
DEAN

APPROVED: _____ DATE: _____

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COURSE EVALUATION

STUDENT EVALUATION

Tests will account for no more than 50% of the total grade.

Lab Assignments will account for no more than 30% of the total grade.

Final Exam will account for no more than 20% of the total grade.

INSTRUCTOR EVALUATION OF COURSE

A. Students will be given an opportunity to evaluate their instructor and the course content.

B. The instructor will review and evalate in terms of withdrawal rate.

C. Final grades given will be reviewed in an effort to determine if a pattern of high or low grades exists.

DEPARTMENT EVALUATION OF COURSE

A. Faculty and the Division Chair will review students grades and withdrawal trends.

B. Faculty and the Division Chair will review the Course, Competencies, and Perspectives Assessment.

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COURSE CONTENT

GENERAL OBJECTIVES

1. The student will be allowed references. The student will backup and restore missing and/or corrupt hard disk files. Performance will be satisfactory if files are backed up and restored.

2. The student will be allowed references. The student will be provided selected software packages. The student will install system and application software and software upgrades. Performance will be satisfactory if the software and/or software upgrades are installed and the installation is consistent with the selected software manual instructions and the installation of the software and/or upgrades operate properly according to the software manual.

3. The student will not be allowed references. The student will list major booting process steps. Performance will be satisfactory if major steps are listed.

4. The student will not be allowed references. The student will list major Central Processing Unit CPU) components. Performance will be satisfactory if major components are listed and the listing is consistent with those outlined in the lecture material.

5. The student will not be allowed references. The student will describe define the Central Processing Unit (CPU) busses. Performance will be satisfactory if the busses are described and the description is consistent with that outlined in the lecture material.

6. The student will practice standard safety procedures. Performance will be satisfactory if procedures are practiced according to the material outlined in the safety handout labeled as SAFETY.DOC which is located on each computer in the classroom.

7. The student will not be allowed references. The student will list static electricity elimination procedures. Performance will be satisfactory if procedures are listed and the listing is consistent with those procedures outlined in the text and/or the computer user's manual.

8. The student will be allowed references. The student will be provided tools. The student will disassemble and assemble a microcomputer. Performance will be satisfactory if the microcomputer is disassembled and assembled and the disassembly and assembly is consistent with the particular machine's technical manual, the checklist provided and instructions given during a demonstration of the process.

9. The student will not be allowed references. The student will define conventional, extended and expanded memory and High Memory Area (HMA). Performance will be satisfactory if the memory types are defined and the definitions are consistent with those outlined in the course text.

10. The student will not be allowed references. The student will describe hard and floppy disk drive components. Performance will be satisfactory characteristics listed are consistent with the course text.

11. The student will be allowed references. The student will be provided tools. The student will use diagnostic software. Performance will be satisfactory if the usage of the software determines microcomputer system and peripheral characteristics and/or problems.

12. The student will be allowed references. The student will be provided appropriate software and tools. The student will analyze microcomputer performance. Performance will be satisfactory if the student can determine whether the machine's performance is satisfactory or, if not, what procedures should be followed to correct the microcomputer's performance.

13. The student will be allowed references. The student will be provided appropriate software and tools. The student will install microcomputer system peripherals. Performance will be satisfactory if installation conforms to equipment manual specifications and the peripheral device/sis/are compatible with the given microcomputer.

14. The student will be allowed references. The student will be provided appropriate software and tools. The student will test a computer’s I/O ports. Performance will be satisfactory if ports are tested and the student, by testing of the ports, determines port specifications and if any changes are needed.

15. The student will not be allowed references. The student will identify given memory chip characteristics. Performance will be satisfactory if characteristics are identified and the identification is consistent with those outlined in the course text and the identification of the characteristics are used to determine the compatibility of a given memory chip or module and a given machine's memory.

16. The student will be allowed references. The student will be provided tools. The student will install microcomputer system hardware upgrades. Performance will be satisfactory if upgrades are installed and the installation is consistent with the technical information provided by the hardware manufacturer and operates according to same.

17. The student will not be allowed references. The student will describe basic power supply protection methods. Performance will be satisfactory if methods are described and the descriptions are consistent with those outlined in the course text.

18. The student will be allowed references. The student will be provided tools. The student will perform routine and/or preventative maintenance. Performance will be satisfactory if maintenance is performed and the performance is consistent with procedures outlined in the course text or specified by the equipment manufacturer and the equipment operates properly when the procedure is finished.

19. The student will be allowed references. The student will be provided tools. The student will install network hardware and software. Performance will be satisfactory if the installation is performed and the performance is consistent with procedures outlined in the course text or specified by the equipment or software manufacturer and the equipment operates properly when the procedure is finished.

SPECIFIC OBJECTIVES

1. backup working hard disk files
2. install system and application software
3. install system and application software upgrades
4. list booting process steps
5. list general characteristics of IBM/AT or IBM/AT compatible microcomputers
6. list major Central Processing Unit (CPU) components
7. define the Central Processing Unit (CPU) busses
8. practice standard safety procedures
9. list static electricity elimination procedures
10. disassemble a working microcomputer
11. assemble a microcomputer
12. define conventional memory
13. define extended memory
14. define high memory area (HMA)
15. define expanded memory
16. describe basic floppy disk drive components
17. describe basic hard disk drive components
18. compare IDE and “SCSI interfaces
19. differentiate hard and floppy disk drive characteristics
20. list hard drive setup steps
21. partition a low-level formatted hard disk
22. high-level format a hard disk
23. explain the Power On Self Test's (POST) function

24. use diagnostic software
25. analyze microcomputer performance
26. differentiate between PC hardware and software problems
27. determine microcomputer peripheral compatibility
28. install microcomputer system peripherals
29. test I/O ports (serial and parallel)
30. identify given memory chip characteristics
31. install microcomputer system hardware upgrades
32. describe basic power supply protection methods
33. perform routine and/or preventative maintenance
34. install network hardware and software

Identify modules that make up a computer system and its operation; identify each type of computer bus structure; and assemble/setup microcomputer systems, accessory boards, and install/connect associated peripherals.

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LEARNING OUTCOMES

1. Use the Internet to download device drivers, software updates, and other software maintenance items.
   The student will use the Internet to download upgrade/update software for given hardware and software. Performance will be satisfactory if the download and installation is successful.

2. Install system and application software and software upgrades.
   The student will physically install software and/or software upgrades. Performance will be satisfactory if the installation is consistent with the selected software manual and operates properly according to the same.

3. List a PC's major booting process steps.
   The student will list steps or select the steps from a given list on a written exam. Performance will be satisfactory is the steps are listed correctly.

4. Disassemble and reassemble a microcomputer.
   The student will disassemble and reassemble a microcomputer in a laboratory environment. Performance will be satisfactory if disassembly and reassembly is consistent with the machine's technical manual, the checklist provided, and instructions given during a demonstration of the process.

5. Install microcomputer system peripherals.
   The student will install given peripherals in a laboratory environment. Performance will be satisfactory if installation conforms to equipment manual specifications, the checklist provided, and instructions given during a demonstration of the process.

6. Install microcomputer system hardware upgrades.
   The student will install given hardware upgrades in a laboratory environment. Performance will be satisfactory if installation conforms to equipment manual specifications, the checklist provided, and instructions given during a demonstration of the process.

7. Perform routine and/or preventative maintenance on a microcomputer system.
   The student will perform routine and/or preventative maintenance in a laboratory environment. Performance will be satisfactory if maintenance is consistent with procedures outlined in the course text or specified by the equipment manufacturer and the equipment operates properly when the procedure has been completed.

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Instructor: Ron Bonnette
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Office: D-201B
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COURSE DESCRIPTION

An introduction to the installation, configuration and maintenance of a microcomputer system. A combination of lecture, demonstration, and hands-on experience will include expanding and upgrading systems, component installation, problem detection and preventive maintenance.
CIP 4701040011 (4 SCH, 3 lecture, 2 lab)

PREREQUISITES

Concurrent enrollment in ITSC 1305 or approval of the division chair.

TEXTBOOK OR COURSE MATERIAL INFORMATION

UPGRADING AND REPAIRING PCs (19th Ed.), Scott Mueller, Que Corporation, 2010.

LAB REQUIREMENTS

Students will be given lab time during class hours.

ATTENDANCE AND WITHDRAWAL POLICIES

Students will be dropped by the instructor if they miss more than 20% of the classes before the drop date. Tardiness and leaving early will count as part of an absence.

Fall and Spring 15 Week Semesters	
Class Meetings	Maximum absences before being dropped
One per week	2
Two per week	4

Students are also expected to take care of the equipment in the classroom. **PLEASE DO NOT BRING FOOD, DRINKS, OR UNAUTHORIZED PERSONS INTO THE CLASSROOM.**

It is the student's responsibility to withdraw from a course if circumstances occur that could prevent the student from successfully completing that course. Students should notify instructor of decision to withdraw and must not assume the instructor will complete the paperwork for the student. The instructor will complete required paperwork only if the instructor decides to drop a student for cause. Failure to notify instructor of withdrawal could result in the student failing the course.

Please note that changes in the Texas Education Code state that students enrolling for the first time in a Texas public institution of higher education in the fall of 2007 or after, will not be permitted to withdraw from more than a total of six courses (no minimum number of credit hours on each course) in which the student is officially enrolled during the student's period of undergraduate study at all such institutions (this includes any course a transfer student has dropped at another institution of higher education). See http://www.brazosport.cc.tx.us/CurStu.html for more information.

COURSE REQUIREMENTS AND GRADING POLICY

The student is evaluated by:

Tests	50%
LabAssignments	30%
Final Exam	20%
	100%

The student will be graded in accordance with established college policy. A letter grade will be assigned based on the following table:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	F

TESTING

1. Tests will be both written and hands-on exercises.

2. Fifty percent of the student's overall class grade will be determined from scores made on the weekly/unit tests. Tests will consist of material covered in the previous class meeting.

3. Thirty percent of the student's overall grade will be based on the average of the lab exercises.

4. Twenty percent of the student's overall grade will be the grade earned on the Final Exam.

MAKE-UP POLICY

No labs will be made up. Instead, one of the lab grades will be dropped before averaging. If a student misses more than one lab, s/he will be given a zero. Test make-up will be handled on an individual basis.

Work turned in late will be assessed a 20% penalty if one day late, 50% for two days and will not be accepted thereafter unless the student makes previous arrangements with the instructor.

STUDENT RESPONSIBILITIES

Students are expected to fully participate in the course. The following criteria are intended to assist you in being successful in this course.

a. Time Management.
b. Understanding the Syllabus Requirements.
c. Utilizing Online Components (Such as WebCT).
d. Communicating with the Instructor.
e. Completing Course Work.

PROJECTS, ASSIGNMENTS, PORTFOLIOS, SERVICE LEARNING, INTERNSHIPS, ETC.

- Students will document hardware and connectivity in the networking lab.
- Students will build and test twisted pair cables.
- Students will configure dynamic and static network addressing.
- Students will configure clients in a peer-to-peer network.
- Students will create and share files within the network.

SCANS COMPETENCIES

The Secretary's Commission on Achieving Necessary Skills (SCANS) identified competencies in the area of Resources, Interpersonal, Information, Systems, and Technology; and foundation skills in the areas of Basic Skills, Thinking Skills, and Personal Qualities. This course is part of a program in which each of these competencies and skills are integrated. For application of specific SCANS competencies and skills in this course, see **Addendum A** (attached).

ACADEMIC HONESTY

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty, including, but not limited to, cheating, plagiarism, and collusion shall be treated appropriately. Please refer to the Brazosport College Student Guide for more information. This is available online at http://www.brazosport.edu (Click on the link found on the right side of the homepage).

STUDENTS WITH DISABILITIES

Brazosport College is committed to providing equal education opportunities to every student. Brazosport College offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software. Please contact the Special Populations Counselor at (979) 230-3236 for further information.

OTHER STUDENT SERVICES INFORMATION

Information about the Brazosport College Library is available at www.brazosport.edu/sites/CurrentStudents/Library/default.aspx or by calling (979) 230-3310.

Information about study skills and tutoring for math, reading, writing, biology, chemistry, and other subjects is available in the Learning Assistance Center (LAC). (See www.brazosport.edu/sites/CurrentStudents/LAC/default.aspx or call (979) 230-3253).

To contact the Computer Technology & Office Administration Department, call (979) 230-3229 or (979) 230-3394.

Student Services provides assistance in the following:

Counseling and Advising	(979) 230-3040
Financial Aid	(979) 230-3294
Student Activities	(979) 230-3355

To reach the Information Technology Department for computer, E-mail, or other technical assistance, call the Helpdesk at (979) 230-3266.

ADDENDUM A SCANS COMPETENCIES		
CPMT 1411–Introduction to Computer Maintenance		
	Competency Reference	Application
1.	Resource	Time and materials must be effectively managed in lab environment.
	Time Management,	
	Facilities/Materials,	
	Human Resources	
2.	Interpersonal	Each lab assignment requires team members, i.e., more than one student for each lab.
	Leadership,	
	Part. as Team Member,	
	Works with Diversity	
3.	Information	Much of course material revolves around installation of software and set up of auxiliary storage (And maintenance).
	Acquiring,	
	Organizing,	
	Interpreting	
4.	Systems, Understanding	System upgrade is taught and practiced.
	Organizational Systems,	
	Technological Systems,	
	Social Systems	
5.	Technology	System upgrade, troubleshooting and maintenance is taught and practiced.
	Selecting,	
	Applying,	
	Maintaining	
6.	Basic Skills	Use of computer documentation and reporting lab results.
	Reading, Writing,	
	Mathematics,	
	Speaking, Listening	
7.	Thinking Skills	Troubleshooting and upgrade require these skills.
	Decision Making,	
	Problem Solving,	
	Learning Techniques	
8.	Personal Qualities	Lab work builds self-esteem with success. Student is responsible for making sure equipment works correctly.
	Responsibility,	
	Sociability,	
	Integrity/Honesty	

CPMT 1411 - Introduction to Computer Maintenance
Weekly Schedule

Week	Subject	Text
1	Course Orientation, Operating Systems, Boot Process	Handouts & Ch 1, PO 22
	Lab - Operating Systems Review	Safety.doc & Other References
2	Lab - Network Walkthrough & Software Installation	
	System Components & Microprocessors	Ch 2 & 3
3	Lab - System Disassembly, Reassembly, & CMOS Setup	PO Ch 20
	Motherboards, Busses, BIOS & Memory	Ch 4, 5, & 6
4	Lab - Flash BIOS & Virus Protection	
	Test 1	Ch 1-6, PO 20 & 22
5	Lab - System Information	
	HD Interfaces & Magnetic Storage	Ch 7-9, PO 10
6	Lab - Startup Diskette & Backup	
	Power Supplies & Input Devices	Ch 19 & 16
7	Lab CD ROM Installation	Ch 12
	Connectivity & Networking	Ch 17 & 18
8	Lab - Hard Drive Setup, Reinstallation of Windows & Office	Ch 12
	Test 2	Ch 7-12 & 16-19
9	Lab - Network Installation	
	Audio & Video Hardware	Ch 13 & 14
10	Lab - Video Driver Upgrade & Sound Card Installation	
	I/O Interfaces	Ch 15
11	Troubleshooting & Preventative Maintenance	Ch 22
	Lab - Diagnostic Software	
12	Optical Storage & Other Storage	Ch 10, 11, & PO Ch 12
	Lab Makeup	
13	Test 3	Ch 10-15, & 22

	Lab - Memory Upgrade	
14	**Lab Final Prep**	
	Building and Upgrading PCs, Portable PCs, & Printers	**Ch 20 & CD**
15	**Lab Final**	
	Final Exam	**Comprehensive**