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Spring 1-2016

ITS 280.01: Computer Repair and Maintenance

Steven L. Stiff

University of Montana - Missoula, steven.stiff@umontana.edu

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Missoula College UM
Department of Applied Computing and Engineering Technology (ACET)

Course Number and Title **ITS 280 Computer Repair and Maintenance**
 Term **Spring 2016**
 Semester Credits **3**
 Prerequisites **ITS 150 CCNA 1: *Exploration*, or consent of instructor**

Faculty Contact Information

Faculty

Steven (Steve) L. Stiff
 Phone: 243-7913
 Email: steven.stiff@umontana.edu

Office

GH08-I
 MC East Campus

Office Hours

T: 1:10 PM – 2:00 PM,
 R: 10:10 AM – 11:00 AM,
 R: 2:10 PM – 3:00 PM,
 or by appointment

Class Meeting Times and Final

Section: 01 (CRN 35042)

Day, Time, and Location:

Lecture MW, 11:10 AM – 12:00 PM, HB03
 Lab F, 11:10 – 1:00 PM, HB03

Final Exam Date, Time, and Location:

F, 05/13/2016, 10:10 AM – 12:10 PM, HB03

Course Description

This course provides an in-depth study of personal computer hardware with the focus on field replaceable units (FRUs). Topics include: system boards, processors, memory, storage devices, I/O ports, cabling, power supplies, multimedia devices, printers, and troubleshooting.

Course Overview

Personal computer systems have changed dramatically since the release of the original IBM PC in 1981. The role of the PC technician has had to evolve to address improvements in motherboard technologies, microprocessor speed and function, RAM memory, flash memory, audio, video, printing, and networking. This course focuses on providing a solid foundation in current PC hardware, and the course labs provide a hands-on look inside the PC. In addition, the course reviews legacy computer system hardware, as well as looking at emerging technologies. In addition to preparing the technician for field work, it also prepares the technician for the hardware portion of CompTIA's industry-standard A+ Certification.

Course Objectives

Upon completion of this course students will:

- Identify basic terms, concepts, functions, and operations of personal computer (PC) system components.
- Identify and describe the functionality of field replaceable units (FRUs) found in a personal computer.
- Identify common peripheral ports, associated cabling, and their connectors.
- Identify hardware methods of upgrading system performance.
- Analyze common symptoms and problems associated with PC components and provide solutions to troubleshoot and isolate the problems.
- Identify the purpose of various types of preventive maintenance products and procedures.
- Analyze issues, procedures, and devices for protection in the PC environment, including people, hardware, and the surrounding workspace.
- Complete installations of memory modules, system boards, processors, power supplies, adapter boards, storage devices, and multimedia devices.

Required Materials

- *Mike Meyer's CompTIA A+ Guide to Managing and Troubleshooting PCs, 4th Edition*, Michael Meyers, McGraw-Hill, 2012
ISBN-13: 9780071795913

Optional Materials

- Belkin 36 Piece PC Tool Kit (TigerDirect.com #B20-1503)
- Ultra Antistatic Wrist Strap (TigerDirect.com # ULT31418)

Evaluation and Grading Criteria

Assessment		Grading Scale
Assignments, quizzes, projects, etc.	35.0%	100% - 90% A
Laboratories	30.0%	90% - 80%B
Exams	35.0%	80% - 70%C
Attendance (Bonus)	2.0%	70% - 60% D
		< 60%F

Course Policies**Online Component**

Various components of the course will be delivered via UOnline (<http://umonline.umt.edu>) using the Moodle Course Management Software. It is the responsibility of the student to become familiar with and work in Moodle. Moodle training is also available through UOnline.

Attendance

- Regular classroom attendance is expected and attendance is taken.
- Students more than 10 minutes late for class will not receive credit for attendance.

Attendance Bonus

The attendance bonus is based on course attendance and is added to the student's semester percentage. This policy provides students the possibility of advancing their semester grade to the next grade level by being diligent in their attendance.

The bonus is based on the percentage of contact hours attended as follows:

Attendance %	Bonus %
95% - 100%	2.0%
90% - 95%	1.5%
85% - 90%	1.0%
80% - 85%	0.5%

Assignments and Exams

- All assigned work is due at the assigned time on the assigned date.
- All exams are to be taken at the assigned time on the assigned date.
- **All late or missed work receives a score of 0.** Late work is accepted only in extraordinary circumstances, and is accepted and graded at the instructor's discretion.

Electronic Communication Devices

- All electronic communication devices must be secured, muted, or tuned off prior to the start of class.
- Any use of an electronic communication device during an exam is considered cheating and will be handled at the instructor's discretion (refer to *Student Conduct*).
- Audio and/or video recording of class sessions is not permitted without prior approval of the instructor (refer to *Students with Disabilities*).

Email

This course uses your student email account for all course email communication. Therefore, you are required to monitor and use your student email account for course email communication.

Student Conduct

- *All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or disciplinary sanction by the University.*
- *Student conduct is governed by the Student Conduct Code. All students need to be familiar with the Student Conduct Code. It is available for review or can be downloaded at http://www.umt.edu/vpsa/policies/student_conduct.php.*

Students with Disabilities

- Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely manner. Please be prepared to provide me a copy of your *Letter of Verification* supplied by your *Disability Services for Students (DSS)* Coordinator for my records. Refer to <http://life.umt.edu/dss> or call **406-243-2243** (voice/text) for information regarding your rights.
- When requesting accommodations, please contact me after class or in my office to discuss your needs. This is done in order to maintain your privacy and minimize class disruptions.
- For students requesting examination accommodations, you must supply me the completed Learning Center (LC) scheduling form for my signature at least 3 days prior to the scheduled test date (the LC requires the signed form at least two days prior to testing). LC contact information is available at http://mc.umt.edu/student_resources/learning_center/ or call **406-243-7826**.

Policies for Dropping and Adding Courses, Changing Sections, Grading, and Credit Status

- The University Policy for dropping courses or requesting grading/credit status changes can be found in the academic catalog or on the web at <http://www.umt.edu/registrar/students/dropadd.php>. All students should be familiar with this policy.
- If you are having difficulty with the course for any reason and decide not to continue, please complete a drop or withdrawal form. A properly completed and approved drop or withdrawal form will prevent you from receiving a failing grade on your college transcript.
- Please note: if you are receiving financial aid, dropping or withdrawing from a course may affect your financial aid status.

Changes to Syllabus

NOTE: The instructor reserves the right to modify the syllabus and assignments as needed based on faculty, student, and/or other circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class.

Important Semester Dates

Thursday-Friday, January 21-22	New Student Orientation
Monday, January 25	Spring Semester Classes Begin
Monday, February 15	Presidents Day – No Classes, Offices Closed
Monday-Friday, April 4-8	Spring Break
Friday, May 6	Last Day of Regular Classes
Monday-Friday, May 9-13	Final Exams
Saturday, May 14	Commencement

ITS 280 Course Outline
(tentative)

Unit 1 Introduction to PC Hardware

- 1.1 CompTIA A+ and the PC Tech
- 1.2 The Visible PC, Visible Windows and Visible Networks
- 1.3 Microprocessors
- 1.4 RAM
- 1.5 BIOS

Unit 2 PC Hardware, Part 2

- 2.1 Motherboards
- 2.2 Power Supplies
- 2.3 Hard Drives
- 2.4 Removable Media
- 2.5 Input Devices

Unit 3 PC Hardware, Part 3 and Wrapping Up

- 3.1 Video
- 3.2 Multimedia
- 3.3 Portable Computing
- 3.4 Printers
- 3.5 The PC Tech

ITS 280 Course Schedule

(tentative)

- Week 1: Syllabus
Unit 1.1: CompTIA A+ and the PC Tech
Unit 1.2: The Visible PC, Visible Windows and Visible Networks
- Week 2: Unit 1.2: The Visible PC, Visible Windows and Visible Networks
Unit 1.3: Microprocessors
- Week 3: Unit 1.3: Microprocessors
Unit 1.4: RAM
- Week 4: Presidents Day
Unit 1.4: RAM
Unit 1.5: BIOS
- Week 5: Unit 1.5: BIOS
- Week 6: Unit 2.1: Motherboards
Unit 2.2: Power Supplies
- Week 7: Unit 2.2: Power Supplies
Exam 1
- Week 8: Unit 2.3: Hard Drives
- Week 9: Unit 2.3: Hard Drives
- Week 10: Unit 2.4: Removable Media
Unit 2.5: Input Devices
- Week 11: Spring Break
- Week 12: Unit 3.1: Video
Unit 3.2: Multimedia
- Week 13: Exam 2
Unit 3.2: Multimedia
Unit 3.3: Portable Computing and Mobile Devices
- Week 14: Unit 3.3: Portable Computing and Mobile Devices
Unit 3.4: Printers
- Week 15: Unit 3.4: Printers
Unit 3.5: The Complete PC Tech
- Week 16: Final Exam
Friday, 12/18/2015, 10:10 AM – 12:10 PM, HB11