

# ETR 285

## Fundamentals of Microcomputer Repair

### COURSE OUTLINE

Revised: Spring 2015

#### Prerequisites:

Computer and Internet literacy, including familiarity with Windows file management and use of common applications (i.e. Microsoft Office, etc.)

#### Course Description

ETR 285, Fundamentals of Microcomputer Repair (4 CR). Provides the student with an exposure to the various techniques and procedures used to troubleshoot microcomputer systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

This course is a practical overview in computer systems including specifications, hardware, applications, configuration and troubleshooting. Emphasis is on Windows/Intel PCs and compatibles. Topics in A+ Computer Certification are included to prepare students to take the Comptia A+® Certification Exam for Computer Technicians. Major computer equipment manufacturers as well as those who service, install and troubleshoot such equipment will find this course helpful. The cost of taking the A+ Certification Exam will be the responsibility of the student. *For more information about A+ Certification, check out <http://www.comptia.org> on the Internet.*

**Semester Credits:** 4    **Lecture Hours:** 3    **Lab/Recitation Hours:** 3

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**Course Outcomes.** At the completion of this course, the student should be able to:

1. Define and identify the major PC components/subsystems and discuss system specifications.
2. Evaluate PC system performance and troubleshoot to the module or component level as appropriate.
3. Service computer systems using appropriate static electricity precautions and safety techniques.
4. Perform routine PC configuration, maintenance and up-grades.
5. Demonstrate competency in A+ Core and Operating System domains in testing and practical situations.

#### Required Text/Materials:

Text #1: **(Required)** The Complete CompTia A+ Guide to PCs 6<sup>th</sup> Edition, Schmidt, copyright © 2013 Pearson Education, Inc. ISBN 13: 978-0-7897-4976-5  
Publisher: Pearson Education, Inc.

Text #2: **(Required)** CompTia A+ 220-801 and 220-802 Authorized Practice Questions Exam Cram, Fifth Edition. Author: David L. Prowse, © 2013 Pearson Education, Inc. ISBN-13: 978-0-7897-4974-1

Lab Journal: This should be a standard 8½ x 11 inch spiral notebook that will be used to contain your class notes and all hands-on labs. See grading and attendance policy below. The lab journal requirements will be discussed at the first class session.

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The following supplementary materials are available: (N/A)

#### Topical Description:

<u>Week/Date</u>	<u>Topic</u>	<u>Text Reference (Schmidt)</u>
1	Campus Safety, Course Intro and Administrative Stuff PC System Components Ports and Connectors	Chapter 1
	Processor Types, Chip Sets and Specifications Expansion Slots "Soft" Skills	Chapter 2
2	System Configuration Hardware Resources	Chapter 3
3	Assembly and Disassembly Power Supply and Power Line Problems Preventative Maintenance and Safety Electrical Terminology and Measurement Troubleshooting <b>Test #1</b>	Chapter 4-5
4	Memory Types, Specifications, and Configurations	Chapter 6
5	Storage Devices	Chapter 7
6	Multimedia Devices <b>Test #2</b>	Chapter 8
7	Peripheral Devices	Chapter 9
8	Printers	Chapter 9 (cont'd)
9	Internet Connectivity <b>Test #3</b>	Chapter 10
10	Basic Windows and Windows Commands	Chapter 11
11	Windows 2000 and XP	Chapter 12
12	Windows Vista	Chapter 12 (cont'd)

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13	Windows 7 <b>Test #4</b>	Chapter 12 (cont'd)
14	Introduction to Networking	Chapter 13
15	Computer and Network Security <b>Test #5</b>	Chapter 14
16	<b>Final Exam</b>	-----

Test	Date*	Topic	Exam Cram Chapters
1	Week 3	Hardware Components and Configuration	1, 7
2	Week 6	Operational procedures, TS, Repair & Maintenance	2, 6
3	Week 9	Basic Networking and Security	4, 5
4	Week 13	Operating Systems and Software	3, 8
5	Week 15	Networks and Security	9, 10

**\*Students in hybrid section Hy1 must take tests before Monday following the test date above. Tests may be taken at the on-campus testing center, or the Greenfield or Rocky Mount testing centers.**

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#### Notes to Instructors

1. Suggested Grading Scheme:

Scheduled Tests	55%
Labs and Homework	25%
Comprehensive Final Exam	20%

Grading Scale:

A	= 91 – 100
B	= 81 – 90
C	= 71 – 80
D	= 60 – 70
F	= below 60

2. Recommended lab materials, sample tests and supplemental handouts are available from the program head.
3. Instructors should notify the program head at least a day in advance for any special accommodations or materials that will be needed for class.

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