



# SALINE COUNTY CAREER CENTER

"Training students to pursue excellence in scholastics, work, and life."

## SYLLABUS

2009-2010 SCH YR.

**COURSE: COMPUTER SERVICE & REPAIR**

**INSTRUCTOR: BILL MICHAEL**

**PHONE: 660-886-6958 EXT. 258**

**E-MAIL: [bmichael\(at\)marshallschools\(dot\)com](mailto:bmichael@marshallschools.com)**

### **COURSE DESCRIPTION:**

An in-depth study of personal computer hardware and operating systems, this course prepares students for the A+ Certification exams. Focus is on identification, installation, configuration, and troubleshooting field replaceable components. Topics include microprocessors, memory, BIOS and CMOS, expansion bus, motherboards, power supplies, floppy drives, hard drives, SCSI devices, CD and DVD media, video, sound, portable PCs, printers, networks, the Internet, and Windows 2000/XP and Vista operating systems.

### **PREREQUISITES:**

Must be a freshman, sophomore, junior or senior.

### **Other Expectations:**

Students are expected to attend all classes, participate in class discussions, and complete all labs/assignments/activities. All exams are to be taken on the assigned date and time. Assignments are due at the start of class on the assigned date and time. If you must miss a class for any reason, you are responsible for making up the work and collecting any notes/assignments that you missed. "Makeup" exams and assignments will be accepted at the instructor's discretion and allowed only in extraordinary situations. On the first day that you return to class, it is your responsibility to check with the instructor.

### **TEXTBOOK:**

Roberts, Richard M. *Computer Service and Repair; A Guide to Upgrading, Configuring, Troubleshooting, and Networking Personal Computers*. Publisher: The Goodheart-Willcox Company, Inc. Tinley Park, Illinois ( [www.g-w.com](http://www.g-w.com) )

### **INSTRUCTIONAL/SUPPLEMENTARY SUPPLIES:**

Notebook paper, pencil and pen.

### **Optional Supplies:**

PC Repair Toolkit: available from [mhtechd.com](http://mhtechd.com) or your McGraw-Hill sales representative.

Anti-static Grounding Bracelet: available from [mhtechd.com](http://mhtechd.com) or your McGraw-Hill sales representative

### **CLASS MEETING TIME:**

6<sup>TH</sup> AND 7<sup>TH</sup> HOUR

### **OBJECTIVES:**

*Upon completion of this course the student will be able to:*

- Be familiar with the format of and procedures for taking the A+ Certification exams and understand the advantages of becoming an A+ Certified Hardware Technician.
- Analyze and use appropriate power protection, safety procedures, and protective devices within the computing environment to prevent injury to oneself or the computer.

- Identify all field replaceable units found in a personal computer and describe the functionality of each component
- Identify basic terms, concepts, and functions of computing system components, including how each component should work during normal operation and during the boot process.
- Understanding and identify various architectures and buses and their advantages or disadvantages
- Be aware of common peripheral ports, associated cabling, and their connectors.
- Install and configure motherboards, memory modules, storage devices, microprocessors, power supplies, and multimedia devices.
- Discuss the feasibility of upgrading an older computer in comparison with the cost of replacing it with a newer model.
- Identify various types of preventive maintenance products and procedures.
- Analyze common symptoms and problems associated with each component and provide solutions to troubleshoot and isolate the problems and perform appropriate repair or replacement.
- Have a rudimentary understanding of SCSI devices and how to install and configure them.
- Identify different printer technologies and how they work, diagnose basic printer problems, and install printers in a Windows PC.
- Understand video cards, CRT and LCD monitors and how to select and install them.
- Understand the special configuration needs of portable computers and be aware of the difficulties of upgrading/repairing them.
- Be familiar with basics of networking and the Internet, including terminology, cabling, topologies, protocols, configuration, and services.
- Be familiar with basic files, commands, and utilities for Windows 2000/XP, Windows Vista and be able to use the command line interface.
- Keep informed of new and emerging computer hardware technology and be able to talk knowledgeably with computer sales and repair people.

### **METHODS OF INSTRUCTION:**

Students will be expected to meet all of the course goals and be able to demonstrate their understanding of the underlying concepts. The instruction includes a combination of discussion/lecture activities and laboratory/application-based activities. Students will be required to work independently in part of the course and in teams throughout the remaining part of the course. Assignments will require students to draw upon academic skills in various fields.

### **Methods of Evaluation:**

Students will be assessed using activity classroom participation, book quizzes, reports, professionalism and pride in their work. And hands on computer lab work.

**GRADES** – Grades will be based on the percentage of total points earned out of total points possible for this semester. The assignments will vary in the number of possible points based upon amount of work involved and complexity of material.

### **GRADING SCALE:**

A	95-100	C	73-76
A-	90-94	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	59-0

Keep a record of your scores so you can calculate and always know your grade. If you are ever concerned about your progress or your grade, please talk to your instructor.

### **UNITS OF INSTRUCTION:**

- The Typical PC
- Microprocessors

- Ram (Memory)
- Motherboards
- Power Supplies
- Magnetic Media
- Understanding Operating Systems
- Installing and Upgrading Windows
- Introduction to Windows Vista
- CD and DVD Media
- Video
- Sound
- Portable PCs
- Printers
- Networking
- WANs
- Small Office & Home Networking
- A+ Certification Exam Preparations
- Employment & Advanced Education

### **ATTENDANCE:**

It is important to attend class each day. Lectures and class activities extend your understanding and the application of your new skills and knowledge. If you must miss a class meeting, you are responsible for any missed assignments or handouts.

### **ACADEMIC HONESTY:**

You are encouraged to assist each other and exchange information in order to master the concepts and skills covered in this class and to seek tutoring if necessary. However, collaboration on any graded assignment or exam to the extent that it is not an individual student's total, personal effort will be considered as a violation of the Student Conduct Code as printed in the Student Handbook.

When an academic exercise is designed to result in a grade, any of the following activities constitute violations of academic honesty unless expressly authorized in advance by the instructor.

1. Cheating includes the intentional giving, receiving, or use (or attempts thereof) of any assistance, including notes, copying, or prior knowledge of examination materials.
2. Plagiarism includes intentionally or knowingly representing the words, ideas, or images of another as one's own in any academic exercise.
3. Fabrication includes the intentional falsification or invention of any information.
4. Collusion includes any secret agreement among students who participate in any academically dishonest activity.

### **CLASSROOM ETIQUETTE—YOUR INSTRUCTOR'S EXPECTATIONS\***

Please arrive at class on time or before the starting time. Please attend all classes unless there is good reason to miss. If you must miss class, please inform your instructor ahead of time, by phone, by e-mail, or in person.

Please come to class prepared for the work to be done and in a positive frame of mind so that you are ready to learn. Please complete readings and other assignments on time. Please bring all necessary course materials such as paper, pencil, required books, handouts, and notes.

Please try to be pleasant and positive in your classroom behavior. Show respect for all class members. Address legitimate grievances appropriately, preferably outside of normal class time. If you have a problem with your instructor, please try to solve the problem with him or her before appealing to a higher authority.

When responding to classroom questions, please do not interrupt a fellow student or the instructor. Take your turn. When you respond to another student's comment, please try to acknowledge the other's position. When responding, please try your best to call other class members by name.

Your student handbook will define the rules for cell phone usage.

Please treat the furniture and equipment in the classrooms and computer labs as if they were your own. Throw any trash away on your way out.

Please remember that for the protection of our facilities and equipment, food and drinks are not allowed in the classrooms or labs. Under no condition is smoking or other tobacco use acceptable in the classroom.

Leave classrooms and labs as you find them, turning off equipment as necessary and pushing in chairs. Before leaving your computer, please log off the network. Also reset the printer so that the paper is wound back out of the platen and not left in the "tear off" position. If you have moved any equipment (keyboard, mouse, etc.), please put it back in its proper place before leaving the classroom. Also, please dispose of all discarded printer paper and torn-off perforated edges.

Most classes begin on time and end on time. If you need to know about schedule or assignment changes, please ask about them at the beginning of class. If you have a real need to leave early, please inform your instructor and leave quietly.

You will do better if you are interested in the class, and the best way to be interested is to get involved. Talk to your friends about the material, and look for current applications or examples about the course issues in newspapers or popular magazines and on the Web. If you can make connections between yourself and the course materials, you will be a happier and a better student.

Most of all, keep in touch with the class syllabus, the instructor, and your classmates. You will do better when you feel you are a real part of the class.

**\*Source:** Instructor's Guide, *Business Communication, Process and Product*, M. E. Guffey