<div align="center">**STANDARDIZED COURSE OUTLINE**</div>

SECTION I

SUBJECT AREA AND COURSE NUMBER: CST 243
COURSE TITLE: Advanced Computer Hardware Lab

COURSE CATALOG DESCRIPTION:
This lab course can only be taken in conjunction with CST 240 A+ Advanced Computer
Hardware. This lab course merges tutorial and hands-on lab experience for a more complete
understanding of PC maintenance and preparation for the A+ service technician exams. Students
will have the opportunity of completing over 80 lab exercises complementing the theory learned
in the co requisite course mentioned above. After completing all lab exercises, you will have
practiced each A+ objective in a hands-on environment and gained valuable installation and
configuration skills in DOS, Windows 9x, Windows NT, and Windows 2000 Operating Systems.
Co requisite: CST 243 A+ Advanced Computer Hardware Lab. Prerequisite: CST 140 A+
Introduction to Computer Hardware.

LECTURE HOURS PER WEEK: 3   **CREDIT HOURS:** 3
LAB HOURS PER WEEK (if applicable): 3
PREREQUISITE(S): n/a

SECTION II

A. SCOPE:
This course continues where CST 140 / 142 leaves off and focuses on advanced computer
troubleshooting and repair skills using various operating systems The course topics
include: basic hardware components, motherboards, form factors, hard drives, floppy
drives, CD drives, memory, and more– skills related to troubleshooting computers such
as testing power supplies and any of the hardware components mentioned above for
failure. The course also covers a wide variety of the latest up to date software, which can
be used for virus protection and troubleshooting.

B. REQUIRED WORK:
Chapter reading, which will be evaluated in 4 exams throughout the semester, as well as
lab projects for each chapter. There is also a semester long project where the students will
assemble the computer which was purchased in the CST 140 / 142

C. ATTENDANCE AND PARTICIPATION:
Regular attendance, assignment submission timeliness, promptness and class/lab
participation will be expected. The instructor will include specific attendance and
participation policies requirements in their class syllabi.

D. METHODS OF INSTRUCTION:
Methods may include any of the following: lecture, lecture/discussion, small group,
collaborative learning, experimental/exploration, distance learning, student presentations,
computer demonstrations, or use of technologies such as audio-visual materials, computer

laboratory equipment, and SAM exam software. Emphasis will be on hands-on computer exercises and problems.

E. OBJECTIVES, OUTCOMES, and ASSESSMENT
Students' grades will be based on achievement of learning the objectives and outcomes listed below as measured by the instructor's methods of assessment:

LEARNING OBJECTIVES	LEARNING OUTCOMES	ASSESSMENT METHODS
To demonstrate an understanding of:	Student will:	As measured by:
Preemptively solving computer hardware / software problems to provide disaster prevention and recovery of computer systems before problems occur	a) Implement disaster recovery plans for several types of systems b) Learn about tools used to prevent data loss and computer malfunction	• Homework/Lab assignments; • Written and Oral activities; • Quizzes and Exams
Applying a comprehensive understanding of the function of computer hardware and software in a personal computer system, both networked and stand alone	a) Use a variety of state of the art as well as older devices in several different computer systems b) Build a network of computers and troubleshoot them	• Homework/Lab assignments; • Written and Oral activities; • Quizzes and Exams
Performing computer troubleshooting using diagnostic test equipment, diagnostic software, network documentation, on-line documentation, on-line documentation resources, and troubleshooting strategies and techniques to resolve basic hardware, software, and network problems	a) Research and obtain latest versions of troubleshooting software b) Research documentation for various hardware devices found in the A+ Lab c) Solve hardware problems simulated by the instructor or other students	• Homework/Lab assignments; • Written and Oral activities; • Quizzes and Exams;
Identifying resources for resolving peripheral device problems including printers, scanners, CD ROMS, sound cards, external CD RW devices, digital imaging devices, and DVDs.	a) Install and troubleshoot all devices listed on the left b) Research modern standards for these devices c) Research where technology is leading these devices for the future	• Homework/Lab assignments; • Written and Oral activities; • Quizzes and Exams;
Selecting appropriate hardware and software, troubleshooting on the board level, and understanding software licensing agreements and privacy issues	a) Explore a variety of diagnostic tools used to troubleshoot a computer system b) Use a multimeter to troubleshoot a power supply	• Homework/Lab assignments; • Written and Oral activities; • Quizzes and Exams;

F. TEXT(S) AND MATERIALS:

An appropriate A+ Certification text, such as:

Text: *A+ Guide to Managing and Maintaining Your PC (current edition)*
Author: Jean Andrews
Publisher: Course Technology

Lab Manual: Lab Manual that accompanies book mentioned above

G. INFORMATION TECHNOLOGY:

This course is an information technology course and will require extensive computer lab time both for teaching and performing assignments. Students will require network accounts with access to the Internet and current versions of Microsoft Windows, Word, Excel, and PowerPoint as well as file storage space.