SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE: A+ Certification II

CODE NO. :   CST205   **SEMESTER:**   08F

PROGRAM: Computer Network Technology

AUTHOR: Cindy Trainor

DATE: 01-Jun-2008   **PREVIOUS OUTLINE DATED:**   01-12-2007

APPROVED: "Brian Punch"

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                    CHAIR   DATE

TOTAL CREDITS: 5

PREREQUISITE(S):   CST102

HOURS/WEEK: 4

I.   COURSE DESCRIPTION:

This course completes preparation for the CompTIA A+ certification. The advanced concepts of computer hardware and software will be presented. Upon completion of this course; students will be able to successfully upgrade a computer system, install various peripherals, troubleshoot using system tools/ diagnostic software. Laptops, portable devices, wireless connectivity, security, safety and environmental concerns will be expanded upon. Students will apply safe work procedures and tool usage throughout the course.

Rationale:
This course completes the Cisco IT Essentials I: PC Hardware and Software curriculum. This course does not result in CompTIA A+ certification; two formal exams must be taken at a Prometric™ Testing Centre at the student's own expense, upon completion of the course.

II.   LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1.   Identify and describe various personal computer configurations and internal components
     Potential Elements of the Performance:
     - Identify and describe the uses of various PC cases and power supplies
     - Describe the internal organization of popular CPUs
     - Describe situations requiring replacement or upgrade of computer components and peripherals and perform the replacement/upgrade
     - Describe laptop form factors and various portable devices currently available
2.   Perform preventive maintenance and troubleshooting
     Potential Elements of the Performance:
     - Explain the purpose of preventive maintenance
     - Identify the elements of the troubleshooting process
     - Given a non functioning system, some spare parts, and a POST card, troubleshoot and repair the system
     - Utilize system diagnostic tools to aid in PC Maintenance
     - Perform advanced preventative maintenance and troubleshooting techniques on operating systems
     - Perform advanced preventative maintenance and troubleshooting techniques on networks
     - Perform advanced preventative maintenance and troubleshooting techniques on system security

3. Advanced installation and configuration of printers and scanners
    Potential Elements of the Performance:
    - Describe and perform the advanced installation and configuration process for printers and scanners
4. Design and install a network with appropriate security
    Potential Elements of the Performance:
    - Identify potential safety hazards and implement proper safety procedures associated with networks
    - Design a network based on customer's needs
    - Determine the components for your customer's network
    - Define security threats
    - Identify security procedures
    - Outline security requirements for customer's needs
    - Select security components based on customer's needs

5. Install and configure peripheral devices including: SCSI controllers and devices, RAID controllers and SATA hard drives.
    Potential Elements of the Performance:
    - Install a SCSI controller and two SCSI devices
    - Install a SATA hard drive and compare it to a PATA hard drive
    - Install a RAID controller and hard drives
6. Analyze system performance, describe factors that can affect performance and recommend the level of system components in order to satisfy a particular performance requirement.
    Potential Elements of the Performance:
    - Describe the features of a system (processor, bus, disk, video, ram etc) that can affect system performance
    - Utilize a performance analysis utility to determine the relative performance of the various subsystems of a computer
    - Demonstrate how system performance can be improved by fine-tuning the system's CMOS setup
    - Demonstrate how different hard drive controller types can improve system performance
    - Describe various types of system upgrades including processors, memory types etc.

III.   TOPICS:

1.   Identify and describe various personal computer configurations and internal components
2.   Perform preventive maintenance and troubleshooting
3.   Advanced installation and configuration of printers and scanners
4.   Design and install a network with appropriate security
5.   Install and configure peripheral devices including: SCSI controllers and devices, RAID controllers and SATA hard drives.
6.   Analyze system performance, describe factors that can affect performance and recommend the level of system components in order to satisfy a particular performance requirement.

IV.   REQUIRED RESOURCES/TEXTS/MATERIALS:

The curriculum is provided on-line.

V.   EVALUATION PROCESS/GRADING SYSTEM:
CISCO:

Online Cisco Chapter exams	10%
Cisco Final Exam	25%
Cisco Lab Activities & Practical	15%

OTHER:

Lab Activities and Lab Quizzes	25%
Final Test	25%

The following semester grades will be assigned to students:

Grade	Definition	Grade Point Equivalent
A+	90 – 100%	4.00
A	80 – 89%	
B	70 - 79%	3.00
C	60 - 69%	2.00
D	50 – 59%	1.00
F (Fail)	49% and below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	

X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.
NR	Grade not reported to Registrar's office.
W	Student has withdrawn from the course without academic penalty.

VI.   SPECIAL NOTES:

Special Needs:
If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 2703 so that support services can be arranged for you.

Retention of Course Outlines:
It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Communication:
The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the *Learning Management System* communication tool.

Plagiarism:
Students should refer to the definition of "academic dishonesty" in *Student Code of Conduct*. Students who engage in academic dishonesty will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:
The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

Special Notes:

1. Students must complete and pass both the test and lab exercise portion of the course in order to pass the entire course.
2. Late hand in penalties will be 5% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances. It is not acceptable to miss classes and / or labs without a reasonable explanation.
3. There will be 1 or 2 quizzes each and every week. Those not attending will receive a zero grade for that quiz.
4. There will also be a lab exercise each and every week that will be due during that lab period. In the event that it cannot be completed during lab time, you will be allowed to complete it as a homework exercise and submit it the following week with no penalty.

A student who is absent for 3 or more times without any valid reason or effort to resolve the problem will result in action taken.

NOTE: If action is to be taken, it will range from marks being deducted to a maximum *of removal from the course.*

VII.   PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit Form from the program coordinator (for course-specific courses), or the course coordinator (for general education courses), or the program's academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question.

Credit for prior learning will also be given upon successful completion of a challenge exam or portfolio.