

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ONTARIO**



Sault College

**COURSE OUTLINE**

**COURSE TITLE:** A+ Certification II

**CODE NO. :** CST205 **SEMESTER:** 09F

**PROGRAM:** Computer Network Technology

**AUTHOR:** Cindy Trainor

**DATE:** 01-Jun-2009 **PREVIOUS OUTLINE DATED:** 01-Jun-2008

**APPROVED:** "B. Punch"

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	<b>CHAIR</b>	<b>DATE</b>
<b>TOTAL CREDITS:</b>	5	
<b>PREREQUISITE(S):</b>	CST102	
<b>HOURS/WEEK:</b>	4	

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*For additional information, please contact Brian Punch, Chair  
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**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%

**Attendance:**

Absenteeism will affect a student's ability to succeed in this course. Absences due to medical or other unavoidable circumstances should be discussed with the professor. Students are required to be in class on time and attendance will be taken within the first five minutes of class. A missed class will result in a penalty in your marks unless you have discussed your absence with the professor as described above. The penalty depends on course hours and will be applied as follows:

<b>Course Hours</b>	<b>Deduction</b>
5 hrs/week (75 hrs)	1% / hr
4 hrs/week (60 hrs)	1.5% /hr
3 hrs/week (45 hrs)	2% /hr
2 hrs/week (30 hrs)	3%/hr

Final penalties will be reviewed by the professor and will be at the discretion of the professor.

The following semester grades will be assigned to students:

<b>Grade</b>	<b>Definition</b>	<i>Grade Point Equivalent</i>
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:

### 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.

### 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.

Prior Learning Assessment:

Students who wish to apply for advance credit transfer (advanced standing) should obtain an Application for Advance Credit from the program coordinator (or the course coordinator regarding a general education transfer request) or academic assistant. Students will be required to provide an unofficial transcript and course outline related to the course in question. Please refer to the Student Academic Calendar of Events for the deadline date by which application must be made for advance standing.

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

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

Disability Services:

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

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*. A professor/instructor may assign a sanction as defined below, or make recommendations to the Academic Chair for disposition of the matter. The professor/instructor may (i) issue a verbal reprimand, (ii) make an assignment of a lower grade with explanation, (iii) require additional academic assignments and issue a lower grade upon completion to the maximum grade “C”, (iv) make an automatic assignment of a failing grade, (v) recommend to the Chair dismissal from the course with the assignment of a failing grade. 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.

Student Portal:

The Sault College portal allows you to view all your student information in one place. **mysaultcollege** gives you personalized access to online resources seven days a week from your home or school computer. Single log-in access allows you to see your personal and financial information, timetable, grades, records of achievement, unofficial transcript, and outstanding obligations, in addition to announcements, news, academic calendar of events, class cancellations, your learning management system (LMS), and much more. Go to <https://my.saultcollege.ca>.

Electronic Devices in the Classroom:

Students who wish to use electronic devices in the classroom will seek permission of the faculty member before proceeding to record instruction. With the exception of issues related to accommodations of disability, the decision to approve or refuse the request is the responsibility of the faculty member. Recorded classroom instruction will be used only for personal use and will not be used for any other purpose. Recorded classroom instruction will be destroyed at the end of the course. To ensure this, the student is required to return all copies of recorded material to the faculty member by the last day of class in the semester. Where the use of an electronic device has been approved, the student agrees that materials recorded are for his/her use only, are not for distribution, and are the sole property of the College.

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

Tuition Default:

Students who have defaulted on the payment of tuition (tuition has not been paid in full, payments were not deferred or payment plan not honoured) as of the first week of *November* will be removed from placement and clinical activities. This may result in loss of mandatory hours or incomplete course work. Sault College will not be responsible for incomplete hours or outcomes that are not achieved or any other academic requirement not met as of the result of tuition default. Students are encouraged to communicate with Financial Services with regard to the status of their tuition prior to this deadline to ensure that their financial status does not interfere with academic progress.

**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*.