

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



COURSE OUTLINE

COURSE TITLE: A+ Certification I

CODE NO. : CST102 **SEMESTER:** 10W

PROGRAM: Computer Network Technology,
Computer Programming.

AUTHOR: Cindy Trainor

DATE: Dec, 2009 **PREVIOUS OUTLINE DATED:** Dec,
2008

APPROVED: Brian Punch

	CHAIR	DATE
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TOTAL CREDITS: 4

PREREQUISITE(S): None

HOURS/WEEK: 4

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I. **COURSE DESCRIPTION:**

This course provides a comprehensive overview of computer hardware and software fundamentals. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Laptops, portable devices, wireless connectivity, security, safety and environmental concerns will be introduced. They will also be able to connect computers to the Internet and share resources in a networked environment.

This course is one of two courses that prepare the students for CompTIA A+ certification.

Rationale:

This course is the Cisco IT Essentials I: Introduction to 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 this course and following hardware course (CST201).

II. **LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**

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

1. **Explain the IT industry and certifications required.**

Potential Elements of the Performance:

- Identify and describe the education and certifications required
- Describe the A+ certification
- Describe the EUCIP certification

2. **Identify and describe various personal computer configurations, internal components, safe lab procedures and tool use.**

Potential Elements of the Performance:

- Explain the purpose of safe working conditions and procedures
- Identify tools and software used with PC components
- Implement proper tool use
- Identify and describe the uses of various PC cases and power supplies
- Identify and describe the internal components of a PC
- Identify PC ports and cables
- Identify various input and output devices
- Explain system resources and their purpose
- Demonstrate the ability to assemble a computer
- Describe laptops and various portable devices currently available
- Identify and describe laptop components
- Explain how to configure laptops

3. Perform preventive maintenance and troubleshootingPotential Elements of the Performance:

- Explain the relationship between communication and troubleshooting
- Describe good communication skills and professional behaviour
- Explain ethics and legal aspects of working with computer technology
- Describe call center environment and technician responsibilities
- Explain the purpose of preventive maintenance
- Identify the elements of the troubleshooting process
- Describe preventive maintenance procedures for operating systems
- Troubleshoot operating systems
- Identify common preventative maintenance techniques used for laptops and portable devices
- Describe how to troubleshoot laptops and portable devices
- Identify and apply common preventive maintenance techniques for printers and scanners
- Troubleshoot printers and scanners
- Describe preventive maintenance procedures for networks
- Troubleshoot a network
- Identify common preventative maintenance techniques for security
- Troubleshoot security

4. Explain, compare and use various operating systemsPotential Elements of the Performance:

- Explain the purpose of an operating system
- Describe and compare operating systems to include purpose, limitations, and compatibilities
- Install, configure and optimize the operating system

5. Describe, install and configure printers and scannersPotential Elements of the Performance:

- Describe the types of printers and scanners currently available
- Describe and perform the installation and configuration process for printers and scanners

6. Describe network principles, standards and purposesPotential Elements of the Performance:

- Explain the principles of networking
- Describe the types of networks
- Describe basic networking concepts and technologies
- Describe the physical components of a network
- Describe LAN topologies and architectures
- Identify standards organizations
- Identify Ethernet standards
- Explain OSI and TCP/IP data models
- Explain how to configure a NIC and a modem
- Identify names, purposes, and characteristics of other technologies used to establish connectivity

7. Explain the importance of securityPotential Elements of the Performance:

- Explain why security is important
- Describe security threats

III. TOPICS:

1. Explain the IT industry and certifications required.
2. Identify and describe various personal computer configurations, internal components, safe lab procedures and tool use.
3. Perform preventive maintenance and troubleshooting
4. Explain, compare and use various operating systems
5. Describe, install and configure printers and scanners
6. Describe network principles, standards and purposes
7. Explain the importance of security

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

The curriculum is provided on-line.

V. EVALUATION PROCESS/GRADING SYSTEM:

Theory:

Online Cisco Chapter exams	30%
Cisco Comprehensive exam	20%

Lab:

Lab Activities and Attendance	50%
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(The percentages shown above may have to be adjusted)

Some minor modifications to the above percentages may be necessary. The professor reserves the right to adjust the mark up or down 5% based on attendance, participation, leadership, creativity and whether there is an improving trend.

Late or missed assignments, quizzes, and/or tests are subject to a ZERO grade unless PRIOR consent is granted by the Instructor.

The Instructor reserves the right to apply a grading penalty to late assignments. Penalty amount will be determined by the Instructor.

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:

Course Hours	Deduction
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

Absentee reports will be discussed with each student during regular meetings with Faculty Mentors. Final penalties will be reviewed by the professor and will be at the discretion of the professor

A minimum of **80% attendance** required in the labs and lectures.

- Students must complete and pass both the test and lab/assignment portion of the course in order to pass the entire course.
- Late hand in penalties will be 10% per day. Labs/assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.
- 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.

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
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.	

Eligibility for X Grades/Upgrading of Incompletes

When a student's course work is incomplete or final grade is below 50%, there is the possibility of upgrading to a pass when a student meets all of the following criteria:

- The student's attendance has been satisfactory.
- An overall average of at least 40% has been achieved.
- The student has not had a failing grade in all of the theory tests taken.
- The student has made reasonable efforts to participate in class and complete assignments.

Note: **The opportunity for an X grade is usually reserved for those with extenuating circumstances.** The nature of the upgrading requirements will be determined by the instructor and may involve one or more of the following: completion of existing labs and assignments, completion of additional assignments, re-testing on individual parts of the course or a comprehensive test on the entire course.

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. Announcements, news, the academic calendar of events, class cancellations, your learning management system (LMS), and much more are also accessible through the student portal. 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. *It is the departmental policy that once the classroom door has been closed, the learning process has begun. Late arrivers will not be granted admission to the room.*