

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO



Sault College

COURSE OUTLINE

COURSE TITLE: **A+ Certification I**

CODE NO. : **CST102** SEMESTER: **2**

PROGRAM: **Computer Network Technology,
Computer Programming.**

AUTHOR: **Fred Carella, Cindy Trainor, Bazlur Rasheed**

DATE: **Dec, 2007** PREVIOUS OUTLINE DATED: **June, 2006**

APPROVED:

	_____ CHAIR	_____ DATE
TOTAL CREDITS:	4	
PREREQUISITE(S):	None	
HOURS/WEEK:	4	

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*For additional information, please contact Brian Punch, Chair
The School of the Natural Environment, Technology and Skilled Trades
(705) 759-2554, Ext. 2681*

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 troubleshooting

Potential 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 systems

Potential 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 scanners

Potential 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 purposes

Potential 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 security

Potential 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.

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

- Students must complete and pass both the test and assignment portion of the course in order to pass the entire course.
- All Assignments must be completed satisfactorily to complete the course.
- Late hand in penalties will be 10% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.
- The professor reserves the right to adjust the number of tests, practical tests and quizzes based on unforeseen circumstances. The students will be given sufficient notice to any changes and the reasons thereof.
- 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 in postsecondary courses:

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.

Labs:

Lab activities represent a very important component of this course in which practical 'hands-on' skills will be developed. Because of this, attendance is mandatory and the satisfactory completion of all lab activities is required. Evaluation of lab work in-class will be done. It is the student's responsibility to discuss absences from regularly scheduled labs with the instructor so that alternate arrangements (where possible) can be made to complete the lab requirements.

Attendance:

Attendance is mandatory. 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 instructor, so that remedial activities can be scheduled. Absenteeism for tests can only be allowed for medical reasons and should be authorized ahead of time. Unauthorized absences could result in a zero grade being assigned.

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 2493 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.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Rights and Responsibilities*. 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.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.