SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE: SYSTEM INTEGRATION AND MAINTENANCE

CODE NO. : CST201   **SEMESTER:** 4

PROGRAM: Computer Engineering Technology,
Computer Network Technology

AUTHOR: Cindy Trainor

DATE: June, 2007   **PREVIOUS OUTLINE DATED:** Jan, 2007

APPROVED:

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                   DEAN   **DATE**

TOTAL CREDITS: 5

PREREQUISITE(S): CST101

HOURS/WEEK: 4 hours/week

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I.   **COURSE DESCRIPTION:**
      This course prepares students for the CompTIA A+ certification. The
      fundamentals of computer hardware and software will be reviewed and
      advanced concepts will be introduced. Students will be able to describe
      the internal components of a computer, successfully assemble a computer
      system, install an operating system, and to troubleshoot using system
      tools and diagnostic software. Laptops, portable devices, wireless
      connectivity, security, safety and environmental concerns will be
      introduced. The various Information Technology (IT) certifications will also
      be discussed. Students will apply safe work procedures and tool usage
      throughout the course.

      Rationale:
      This course is 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.   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 and
            internal components.
            Potential Elements of the Performance:
            • Explain the differences between PCs based on implementation
              needs
            • 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 situations requiring replacement or upgrade of
              computer components and peripherals and perform the

replacement/upgrade
- Describe laptops and various portable devices currently available

3. Perform preventive maintenance and troubleshooting
    Potential Elements of the Performance:
    - Explain the purpose of preventive maintenance
    - Identify the elements of the troubleshooting process
    - Describe preventive maintenance procedures for operating systems
    - Troubleshoot operating systems
    - Identify and apply common preventive maintenance techniques for printers and scanners
    - Troubleshoot printers and scanners
    - Describe preventive maintenance procedures for networks
    - Troubleshoot the network
    - Perform preventive maintenance on security
    - Troubleshoot security

4. Explain, compare and use various operating systems
    Potential Elements of the Performance:
    - Select the appropriate operating system based on the customer's needs
    - Install, configure and optimize the operating system
    - Describe how to upgrade operating systems

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. 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
    - Implement the customer's network
    - Upgrade the customer's network
    - Describe the installation, configuration and management of a simple mail server
    - Define and compare SMTP, POP, and IMAP
    - Define security threats
    - Identify security procedures
    - Outline security requirements for customer's needs
    - Select security components based on customer's needs

- Implement customer's security plan

III.   TOPICS:

1. Explain the IT industry and certifications required.
2. Identify and describe various personal computer configurations and internal components.
3. Perform preventive maintenance and troubleshooting
4. Explain, compare and use various operating systems
5. Describe, install and configure printers and scanners
6. Design and install a network with appropriate security

IV.   REQUIRED RESOURCES/TEXTS/MATERIALS:
The curriculum is provided on-line.

V.   EVALUATION PROCESS/GRADING SYSTEM:
Theory:

Online Cisco Chapter exams	30%
Written Mid-term exam	20%
Cisco Final Exam	25%

Lab:

Lab Activities and Attendance	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	

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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 703
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.
The professor reserves the right to use other tools and / or techniques that
may be more applicable. These other tools and / or techniques for effective
communication will be discussed, identified and presented throughout the
delivery of the course content.

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.

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.