

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:** 3

PROGRAM: Computer Engineering Technology,
Computer Network Technology,
Computer System Support Technology

AUTHOR: Mark Allemang/Cindy Trainor

DATE: June, 2000 **PREVIOUS OUTLINE DATED:** August, 1998

APPROVED:

DEAN

DATE

TOTAL CREDITS: 5

PREREQUISITE(S): CST101

HOURS/WEEK: 4 hours/week

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*For additional information, please contact K. DeRosario
School of Technology, Engineering & Technical Trades
(705) 759-2554, Ext. 642*

I. COURSE DESCRIPTION:

This course develops PC system configuration and troubleshooting skills. A variety of peripherals such as hard drives, monitors, printers, sound cards and CD-ROM drives will be studied in addition to the issues involved in integrating and configuring hardware and software system components.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Install and configure peripheral devices including: Sound Boards, CDROMS, DUAL Hard drives, and network cards.

Potential Elements of the Performance:

- Install and configure a sound board hardware and software drivers and do so minimizing the amount of conventional memory that is used.
- Install and configure a CDROM and driver software. Differentiate between IDE-ATAPI type and Proprietary Panasonic types.
- Install a 2nd IDE hard drive and configure it as SLAVE.
- Install an Ethernet network card driver and Netware workstation software. Connect the workstation to the college network.

This learning outcome will constitute approximately 30% of the course.

2. Troubleshoot and repair PC system faults and configuration problems.

Potential Elements of the Performance:

- given a set of system fault symptoms, suggest appropriate troubleshooting steps that should be followed in order to solve the problem
- given a non functioning system and some spare parts, troubleshoot and repair the system
- Utilize system diagnostic tools to aid in PC Maintenance.

This learning outcome will constitute approximately 25% of the course.

3. 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
- Recommend the type of system and subsystems to use for a particular type of application such as for a CAD station or Fileserver
- Describe various types of system upgrades including various processors, memory types etc.

This learning outcome will constitute approximately 10% of the course.

4. Demonstrate the ability to plan and implement a PC Maintenance strategy such as planning BACKUPS.

Potential Elements of the Performance:

- describe an appropriate disaster recovery strategy given a particular computer system application

This learning outcome will constitute approximately 5% of the course.

5. Describe the typical features and maintenance issues associated with Laptop/Notebook type computers.

Potential Elements of the Performance:

- describe the type and features of laptop display technology
- describe the types of I/O ports and pointing devices found on laptop computers
- describe the purpose of a docking station

This learning outcome will constitute approximately 5% of the course.

6. Utilize the Internet as a resource for PC maintenance information.

Potential Elements of the Performance:

- identify sites that specialize in PC Maintenance

- locate a USENET thread where a problem is identified and a solution is suggested regarding a PC Maintenance problem

This learning outcome will constitute approximately 5% of the course.

7. Demonstrate the knowledge and skill required to protect computers against virus infection.

Potential Elements of the Performance:

- describe and demonstrate how a virus infects a computer
- repair a virus infected computer
- set-up a virus shield to protect against virus infection

This learning outcome will constitute approximately 10% of the course.

8. Participate in the Computers for Schools & Libraries program by refurbishing one or more computers from the CFSL center.

Potential Elements of the Performance:

- document the computer in the inventory list
- evaluate the state of the computer and make repairs
- update the inventory list indicating the refurbished state of the computer
- prepare the computer for shipment

III. TOPICS:

1. Peripheral Devices
2. Troubleshooting
3. System Performance
4. PC Maintenance Strategy
5. Laptops/Notebooks

6. Computer Viruses
7. Computers for Schools and Libraries

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

“Upgrading and Repairing PCs” (Any Edition from 5th upward)
by Scott Mueller, Que Publishing
5 blank floppy diskettes

V. EVALUATION PROCESS/GRADING SYSTEM:

2 WRITTEN TESTS	60%
LAB WORK/ATTENDANCE /QUIZES/PRACTICAL TESTS	40%

(The percentages shown above may vary slightly if circumstances warrant.)

NOTE: *It is required to pass both the theory and the lab part of this course. For example, it is not possible to pass the course if a student has a failing average in the three written tests but is passing the lab portion, (or vice versa).*

The following semester grades will be assigned to students in postsecondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
U	Unsatisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in	

NR limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see *Policies & Procedures Manual – Deferred Grades and Make-up*). Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has not been possible for the faculty member to report grades.

UPGRADING OF INCOMPLETES

When a student's course work is incomplete or final grade is below 60%, there is the possibility of upgrading to a pass when a student meets all of the following criteria:

1. The student's attendance has been satisfactory.
2. An overall average of at least 50% has been achieved.
3. The student has not had a failing grade in all of the theory tests taken.
4. The student has made reasonable efforts to participate in class and complete assignments.

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. Because of this, **attendance is mandatory** and the satisfactory completion of all lab activities is required. *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.*

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 instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 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.

Attendance:

Absenteeism will affect a student's ability to succeed in this course. Part of the course mark will be based on LAB attendance. Absences due to medical or other unavoidable circumstances should be discussed with the instructor.

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.