SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE: Microcomputer Processors & Peripherals

CODE NO. : CST204 **SEMESTER:** 4

PROGRAM: Computer Systems Support

AUTHOR: Frank Turco, Bazlur Rasheed, Cindy Trainor

DATE: Jan, 2004 **PREVIOUS OUTLINE DATED:** Jan, 2003

APPROVED:

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DEAN **DATE**

TOTAL CREDITS: 4

PREREQUISITE(S): Completion of the first year common and CST201 in the Computer Studies Program

HOURS/WEEK: 4

COURSE DESCRIPTION:

I. This course introduces the student to PC system hardware, peripherals, concepts, maintenance and basic troubleshooting. The areas of study include microprocessors, peripherals, buses and common computer subsystems. Theory is reinforced and practical skills are developed with hands on lab exercises that include hardware and software installation and maintenance of peripheral devices.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Demonstrate an understanding of a range of processors such as INTEL, MOTOROLA and RISC based systems.
   Potential Elements of the Performance:
   - Learn the basic principles of how a microprocessor works.
   - Investigate the evolution of processors 8 bit to 64bit Data-Bus capacity.
   - Learn how a Math Coprocessor works and its functionality
   - Develop and example of how a typical processor works.
   - Investigate and report on the different types of microprocessors such as INTEL, RISC, MOTOROLA and their use in various applications.
   - Define parallel processing and investigate future developments.

2. Demonstrate procedures to evaluate, price and compare PC's and servers in the current market.
   Potential Elements of the Performance:
   - Investigate current systems and options available
   - Develop procedures to review pricing, performance and maintenance
   - Investigate and report on future developments

3. Demonstrate an understanding of how printers and plotters work, install maintain and troubleshoot.
   Potential Elements of the Performance:
   - Learn the various types of printers and plotters available in the current market
   - Investigate pricing, features and functionality
   - Understand the basic operations of DeskJet, inkjet, lasers and plotters
   - Learn to install printer hardware and software drivers
   - Learn basic maintenance and troubleshooting
   - Understand and demonstrate how a parallel interface works

4. Demonstrate an understanding of how printers and plotters work, install maintain and troubleshoot.
   Potential Elements of the Performance:
   - Understand the operation of a typical flatbed scanner
   - Understand the operation of a SCSI device
   - Learn to install a scanner and software device drivers
   - Test the operation of a scanner and perform basic troubleshooting and maintenance procedures.
   - Evaluate different types of scanners available in relation to price and performance, investigate future developments.
   - Compare SCSI to parallel operation

5. Demonstrate an understanding of how the various types of monitors work, install, maintain and troubleshoot.
   Potential Elements of the Performance:
   - Learn different types of monitors that are available, review pricing and functionality.
   - Understand the basic operation of a monitor
   - Understand LCD's, CRT and new Flat Panel Architecture
   - Learn to install monitors and software drivers
   - Understand video controllers and memory configurations such as dual-port memory.

6. Demonstrate and use newer technology products relating to the PC and Internet environment.
   Potential Elements of the Performance:
   - Understand and demonstrate Digital Camera technology, investigate new developments
   - Understand and demonstrate the use of Zip Drives, investigate new developments
   - Understand and demonstrate the use of video conference equipment for the Internet -- Quick Cam
   - Investigate the use of Read/Write CDROM technology
   - Understand and demonstrate tape drive technology investigate new developments
   - Research and report on Point of Sale Technology, investigate new technologies hand held input devices and receipt printers.
   - Research and report on new INPUT/OUTPUT devices in today's market

III. TOPICS:

1. Microprocessors
2. Pricing and Evaluating
3. Printers
4. Scanners
5. Monitors
6. New Peripherals

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

1. **Resource Materials:**

- Textual Material from books used in previous courses (Upgrading and repairing PCs, by- Scott Mueller, QUE).
- Handouts, Guidance, and Material as it relates to the individual topics.
- Use of research modes such as INTERNET, Library Data Base searches, and articles.
- Additional reference material will either be given to the students or places in the library for the student's use.

2. **Required Individual Student Resources:**

- A set of Screwdrivers (Philips & Flat head) and Nose Pliers
- A box of Floppy Diskettes
- Individual Research
- Documentation
- Participation & Teamwork

V. EVALUATION PROCESS/GRADING SYSTEM:

The mark for this course will be arrived at as follows:

Tests	60 %
Quizzes	10 %
Assignments and lab work	30 %
(The percentages shown above may have to be adjusted to accurately evaluate student skills. Students will be notified of any changes made.)	
Total	100%

The tentative breakdown is as follows:

3 Theory Tests	at	20 % each
10 Quizzes (best 2 out of 3)	at	1 % each
5 Minor Assignments + lab activity	at	2 % each
2 Major Assignments + lab activity	at	10 % each

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.

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 5% per day. Assignments will not be accepted past one week late unless there are extenuating and legitimate circumstances.
- Makeup Tests are at the discretion of the instructor and will be assigned a maximum grade of 60%.
- 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.

ELIGIBILITY FOR X 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:

- The student's attendance has been satisfactory.
- An overall average of at least 50% 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.

Tests & Quizzes:
Written tests will be conducted as deemed necessary; generally at the end of each block of work. They will be announced about one week in advance. Quizzes may be conducted without advance warning.

Assignments:
Assignments not completed by the assigned due-date will be penalized by 5% per day late. All assignments must be completed satisfactorily to complete the course.

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. There will be an attendance factor included in the lab evaluation.

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

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 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 493 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.