SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: COMPUTER SYSTEMS II

Course No.:   CET220-5

Program: COMPUTER ENGINEERING TECHNOLOGY

Semester: FOUR

Date: MAY, 1990

Author: TYCHO BLACK

                                   New:____ Revision:_X__

APPROVED: _____   _____90/05/14_____
          Chairperson   Date

CET220

COMPUTER SYSTEMS II

PHILOSOPHY/GOALS:

This course develops a student's ability to use the C Programming language effectively. In addition, two operating systems are introduced: first, the UNIX operating system (as implemented in ULTRIX-32), including its commands and utilities; and second, the VAX/VMS operating system. This second component will cover the hardware/software architecture and organization of the VAX/VMS systems.

A series of C programming assignments will be done, primarily in a VAX/VMS environment. The practical skills necessary to operate in a UNIX environment will also be reenforced with assignments.

METHOD OF ASSESSMENT:

4 WRITTEN TESTS (15% each)	60%
ASSIGNMENTS	30%
QUIZZES (10 at 1% each)	10%

TEXTBOOK :

"C PRIMER PLUS" by

M. Waite, S. Prata, and D. Martin
(Howard Sams & Company)

COURSE DURATION: 6 HOURS PER WEEK FOR 1 SEMESTER (15 WEEKS)

GRADING SCHEME
CET220

1. **TESTS**

   Four written tests will be given. Generally one week advance warning will be given for tests.

2. **ASSIGNMENTS**

   Assignments not completed by the assigned due-date will be penalized by 25% unless there are extenuating circumstances. Assignments will be returned, where possible, about one week after the due date. No assignments will be accepted after that time and a new assignment will be required for those not having completed it by that time.

4. **ATTENDANCE**

   Satisfactory attendance in regularly scheduled classes is important for success in this course. To encourage active participation and attendance, attendance will be taken and a penalty applied for <u>unauthorized</u> absence. The penalty applied will be proportional to the number of hours missed up to a maximum of 10% of the final mark.

5. **GRADING SCHEME**

A+	90	–	100%	Outstanding achievement
A	80	–	89%	Above Average achievement
B	70	–	79%	Average Achievement
C	55	–	69%	Satisfactory Achievement

I	Incomplete: Course work not complete at Mid-term. Only used at mid-term.
R	Repeat
X	A temporary grade that is limited to instances where special circumstances have prevented the student from completing objectives by the end of the semester. An X grade must be authorized by the Chairman. It reverts to an R if not upgraded in an agreed-upon time, less than 120 days.

6. **UPGRADING OF INCOMPLETES**

   When a student's course work is incomplete or final grade is below 55%, there is the possibility of upgrading to a pass when the student's performance warrants it. Attendance and assignment completion will have a bearing on whether upgrading will be allowed. A failing grade on all tests will remove the option of any upgrading and an R grade will result. The highest grade on re-written tests or assignments will be 56%. Where a student's overall performance has been consistently unsatisfactory, an R grade may be assigned without the option of make-up work.

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SPECIFIC OBJECTIVES: COMPUTER SYSTEMS II

BLOCK 1   C PROGRAMMING FUNDAMENTALS

Students will be able to describe and use the following as they relate to C programming:

1. C program structure and style.
2. The VAX C environment and its requirements.
3. C expressions, statements and operators.
4. Defining constants and declaring variables.
5. Data types and casting.
6. Basic string handling and terminal I/O functions.
7. Decision making and looping structures in C.

BLOCK 2   ADVANCED C PROGRAMMING

Students will be able to describe and use the following as they relate to C programming:

1. Functions and how to pass information to functions.
2. Storage classes of variables.
3. Using the Run Time Library (RTL) routines for screen management in VAX C.
4. Arrays and pointers.
5. Structures and Unions.
6. Recursion
7. File I/O.
8. Dynamic memory allocation
9. Other C library functions.
10. C in the UNIX and PC environments.

BLOCK 3   THE UNIX OPERATING SYSTEM: ULTRIX-32

This block provides the student with an introduction to the UNIX operating system as implemented in ULTRIX on a VAX computer.

At the end of this block, students shall be able to do the following:

1.   Understand the history of the UNIX operating system and its advantages and disadvantages in relation to other operating systems.
2.   Understand the operating environment of ULTRIX.
3.   Understand the ULTRIX file system and be able to manage directories.
4.   Understand redirecting, filtering and piping.
5.   Be able to use UNIX Text editors.
6.   Be able to use ULTRIX Mail Utilities.
7.   Be able to use shell command files and manage processes.
8.   Understand and be able to use a wide variety of ULTRIX commands and know their VMS equivalents.

BLOCK 4   VMS OPERATING SYSTEM

At the end of this block, students shall be able to:

1.   Describe the hardware organization of the VAX family of computers.

2.   Describe the concept of a program, an image, a process and a joband the way in which the VMS operating system manages them.

3.   Describe the way in which VMS manages the memory resources of the computer.

4.   Discuss the use of interrupts and exceptions on the VAX.

5.   Describe the software components of VMS that provide an interface to the user.

NOTE: Instructors reserve the right to make changes in course outlines where necessary.