

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, 1991

Author: TYCHO BLACK

New:      Revision: X

APPROVED:

*J.P. Crockett*  
Chairperson

9/104/30  
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 VAX/VMS systems.

A series of C programming assignments will be done in both a PC and 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% |
| 2 C tests                  |     |
| 1 Unix test                |     |
| 1 VAX/VMS test             |     |
| ASSIGNMENTS                | 30% |
| QUIZZES                    | 10% |

TEXTBOOK :

"C PRIMER PLUS" by

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

Course Notes as distributed by the instructor.

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 handed in on the assigned due-date will be penalized by up to 25% unless there are extenuating circumstances. Assignments will be returned, where possible, about one week after the due date. When this occurs, late assignments will not be accepted.

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 series of quizzes will be given. Students absent for quizzes will not be able to rewrite them unless there are extenuating circumstances.

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.

CET220SPECIFIC OBJECTIVES: COMPUTER SYSTEMS IIBLOCK 1 C PROGRAMMING FUNDAMENTALS

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

1. C program structure and style.
2. The VAX C and Turbo C environments and their 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 correctly use the following in C programs:

1. Functions and how information is passed 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 a UNIX Text editor.
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 job including 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.