

CE220-6
CODE NO.

COMPUTER SYSTEMS II
COURSE NAME

SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

PRE-REQUISITES: CET120

COURSE OUTLINE

Course Title: COMPUTER SYSTEMS II

Code No.: CET220-6 Semester: 3

Program: COMPUTER ENGINEERING TECHNOLOGY

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Date: Sept, 1994 Previous Outline Dated: June, 1993

APPROVED:

L. Crockett

Dean

94-08-21

Date



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TOTAL CREDITS: 6

PREREQUISITES: CET129

I. PHILOSOPHY/GOALS:

This course develops a student's ability to use the C Programming language effectively. In addition, the UNIX operating system is introduced, including its concepts, commands and utilities.

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 lab assignments.

II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):

Upon successful completion of this course the student will:

1. Demonstrate the ability to construct C programs using correct syntax and style while utilizing appropriate data types, expressions and operators.
2. Design, code and debug C programs that demonstrate the correct use of decision-making and looping structures.
3. Design, code and debug C programs that demonstrate the correct use of string-handling and terminal I/O functions.
4. Design, code and debug C programs that demonstrate the correct use of standard C and user-written functions.
5. Demonstrate the ability to implement solutions to problems which include the appropriate use of arrays, pointers, structures, unions and other standard elements of C.

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6. Design, code and debug C programs that demonstrate the correct use of file handling functions and techniques.
7. Describe the distinguishing features of the UNIX operating system, including its file system.
8. Demonstrate the ability to correctly use UNIX commands and utilities to perform assigned tasks.

III. TOPICS TO BE COVERED:

1. C Programming Fundamentals: structure, style, data types, expressions and operators.
2. Decision-making and looping structures in C.
3. String-handling and terminal I/O in C.
4. Functions.
5. Arrays, pointers, structures and unions.
6. File handling in C.
7. The UNIX environment.
8. UNIX Commands and Utilities.

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IV. LEARNING ACTIVITIES/REQUIRED RESOURCES

1.0 C Programming Fundamentals

Learning Activities:

- 1.1 Listen to presentations on C language history, syntax, data types, expressions and operators.
- 1.2 Practice evaluating C expressions involving multiple operators and data types.
- 1.3 Observe the process of C program generation and testing in both a VAX/VMS and a Turbo C environment.
- 1.4 Practice simple program creation and testing in both a VAX and PC environment.
- 1.5 Listen to a presentation identifying the strengths and weaknesses of the C language.

Resources:

Handout, "New C Primer Plus", Chap. 1,2,3,5,15,16

2.0 Decision-making and Looping Structures in C.

Learning Activities:

- 2.1 Listen to presentation on standard decision-making structures available in the C language.
- 2.2 Listen to presentation on various forms of looping structures in C.
- 2.3 Demonstrate the ability to implement decision-making and looping structures by successfully completing assigned problems.

Resources:

"New C Primer Plus", Chap. 6,8

3.0 String-handling and Terminal I/O in C.

Learning Activities:

- 3.1 Listen to presentations describing the use of standard C functions for terminal I/O

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and string handling activities.

- 3.2 Demonstrate the ability to write C programs which correctly apply the appropriate string-handling and terminal I/O functions and techniques to solve the assigned problems.

Resources:

"New C Primer Plus", Chap. 4,8

4.0 Functions.

Learning Activities:

- 4.1 Listen to a presentation on the use of functions in C programs.
- 4.2 Demonstrate the ability to modularize program tasks using functions by completing assigned problems.
- 4.3 Demonstrate the ability to use the editing and debugging tools of various C environments to troubleshoot programs.

Resources:

"New C Primer Plus", Chap. 9, 11

5.0 Arrays, Pointers, Structures and Unions.

Learning Activities:

- 5.1 Listen to presentation on the use of pointers in C.
- 5.2 Listen to presentation on the use of arrays and various ways of declaring and accessing array elements.
- 5.3 Listen to presentation on the declaration and use of structures and unions.
- 5.4 Complete assigned problems which implement arrays, pointers, structures and unions.

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5.5 Listen to presentation on C storage classes.

5.6 Listen to presentation on recursion and dynamic memory allocation.

Resources:

"New C Primer Plus", Chap. 9,10,13,14

6.0 File Handling In C

Learning Activities:

6.1 Listen to a presentation on standard I/O file handling functions in C.

6.2 Practice using other specialized C library functions to solve specific programming problems.

6.3 Complete assigned problems which require the use of any of the C data structures or functions that have been covered in the course.

6.4 Study C programs which illustrate appropriate style and documentation standards.

6.5 Write programs which demonstrate the proper style and documentation standards.

Resources:

"New C Primer Plus", Chap. 12

7.0 The UNIX Environment.

Learning Activities

7.1 Listen to a presentation on the history of the UNIX operating system, its characteristics, strengths and weaknesses.

7.2 Observe the commands and proper command syntax required for basic use of a UNIX system.

7.3 Practice basic UNIX commands required to login and manage a UNIX account.

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7.4 Practice the use of the vi editor to create and edit text files in UNIX.

Resources:

Handouts, UNIX text.

8.0 Unix Commands and Utilities

Learning Activities:

8.1 Listen to a presentation on the UNIX file system and the commands required to maintain directories and files.

8.2 Practice managing files and directories in a user account.

8.3 Practice copying files back and forth from a VMS to a UNIX environment over a network.

8.4 Demonstrate the use of UNIX mail, talk, finger and other commands to examine and control a users environment.

8.5 Listen to presentations on the use of redirecting, filtering and piping in UNIX.

8.6 Listen to a presentation on the use of shell command files and basic commands to manage processes.

8.7 Demonstrate an ability to use the UNIX commands and utilities studied by successfully completing a practical hands-on test in the required time.

8.8 Demonstrate an ability to associate VMS commands with their equivalent command in the UNIX environment.

Resources:

Handouts, UNIX text.

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V. EVALUATION METHODS:

2 C Theory Tests (22 % each)	44%
1 UNIX Test	16%
Assignments	25%
Quizzes and Practical Tests	15%
	100%

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

GRADING SCHEME

A+	90	-	100%
A	80	-	89%
B	70	-	79%
C	55	-	69%
I	Incomplete		
R	Repeat		

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 a student meets the following criteria:

1. The students attendance has been satisfactory.
2. An overall average of at least 40% has been achieved.
3. The student has not had a failing grade in all of the theory tests.
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 assignments, completion of additional assignments, additional practical tests, re-testing on individual parts of the course or a comprehensive test on the entire course.

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ATTENDANCE:

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, so that remedial activities can be scheduled. Absence from tests without pre-arranged authorization may result in a zero grade being applied. It is the student's responsibility to consult with the instructor before such absences.

LATE PENALTY FOR ASSIGNMENTS

A late penalty of up to 10% per week may be applied to assignments which are not handed in by the due date, unless extenuating circumstances exist. Assignments will not be accepted if they are received after the assigned problems are taken up in class (typically one week after they are due).

VI. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced standing in the course should consult the instructor.

VII. REQUIRED STUDENT RESOURCES:

TEXT BOOKS:

1. "NEW C PRIMER PLUS" by M. Waite, S. Prata (Howard Sams & Co).
2. UNIX text (to be announced). *Not required until about Week 10 in the course.*

VIII. ADDITIONAL RESOURCE MATERIALS AVAILABLE:

Book Section

IX. SPECIAL NOTES:

Students with special needs (eg. physical limitations, visual or hearing impairments, or learning disabilities) are encouraged to discuss any required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as deemed necessary to meet the needs of students or take advantage of new or different learning opportunities.

