SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY

SAULT STE. MARIE, ONTARIO

COURSE OUTLINE

Course Title: HIGH LEVEL LANGUAGE PROGRAMMING

Code No.: CET331-5 Semester: 5

Program: COMPUTER ENGINEERING TECHNOLOGY

Author: Mark Allemang

Date: SEPT., 1992 Previous Outline Dated:

APPROVED: L P Chazutte 92-09-16

Dean Date

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TOTAL CREDIT HOURS: 75

PREREQUISITES: CET228-5 MICROPROCESSOR CIRCUITS AND APPLICATIONS

I. PHILOSOPHY/GOALS:

This course develops a student's ability to use the C programming language effectively. It is the students first exposure to a "high level" programming language. It is not an introduction to programming concepts and entry to this course requires that the student has successfully completed CET228-5.

The student is introduced to C in two environments including VAX C and PC based Turbo C. This course will also serve as an introduction to VMS with the student learning the commands and utilities required to develop programs within the VMS environment.

Practical skills will be developed with a series of C programming assignments done in both a PC and a VAX/VMS environment.

II. STUDENT PERFORMANCE OBJECTIVES:

Upon successful completion of this course the student will:

1. Use the VAX computer and the VMS operating system to create, compile, link and run C programs.

2. Use VMS commands to manage files and directories on the VAX.

3. Develop algorithms to describe the solution of typical problems to be solved with the computer, and implement them with the C language.

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III. TOPICS TO BE COVERED:

1. Vax/VMS fundamentals.

2. C Programming Fundamentals

3. Advanced C Programming

IV. LEARNING ACTIVITIES

REQUIRED RESOURCES

BLOCK I - VMS OPERATING SYSTEM

During this portion of the courses the student will

1. Describe the typical hardware and software components of the VAX computer system.
2. Discuss the concept of files and describe the method of naming files on the VAX.
3. Learn to use the network facilities to Log-on and off the system.
4. Learn to use DCL (Digital Command Language) to:
   a. Display the contents of a file on the system.
   b. Delete files.
   c. Purge files.
   d. Rename files.
   e. Create and maintain directory structures and their associated files efficiently.
5. Use the EDT editor to create text (Source) files.
6. Describe the process of editing, compiling, linking and running a program.
7. Discuss the difference between Source, Object, List and Executable files.

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BLOCK II - 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 III - 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. Arrays and pointers.
4. Structures and Unions.
5. Recursion
6. File I/O.
7. Dynamic memory allocation.
8. Other C library functions.
9. Time permitting, an introduction to graphics programming on the PC will be included.

TEXT:

"Structured C for Technology" by T. Adamson

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V. METHOD OF EVALUATION:

THEORY TESTS	60%
ASSIGNMENTS and LAB WORK	30%
QUIZZES	10%

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

Notes:
1. Lab work and assignments must be complete to the instructor's satisfaction for a passing grade to be achieved.
2. Before tests the instructor will provide details of the specific objectives to be tested.

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 taken.
4. The student has made reasonable efforts to participate in class and complete assignments.

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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.

VI. REQUIRED STUDENT RESOURCES:

TEXT BOOKS:

1. Structured C for Technology by T. Adamson.

VII. SPECIAL NOTES:

1. 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.

2. 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.

3. The Blocks of objectives will not necessarily be covered in the order shown in this course outline.