CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA

ETT 215

COURSE OUTLINE

Course Information	ABET Unit Classification (4 Quarter Units)
Department: Engineering Technology	Math:
Course Number: ETT 215/L	Basic Science:
Course Title: C Programming for Technology	Engineering Topics: 4
Revision Date: 10/19/2004	*Contains significant design content:* Yes
Revised by: Tariq Qayyum	Other:
Compliant: Catalog 2004/05	Curriculum Designation: Required

I. Catalog Description

ETT 215/215L C Programming for Technology/L
Introduction to structured programming using ANSI C. Programming problems applicable to engineering technology. Three one-hour lectures, one three-hour laboratory.

II. Prerequisites and Corequisites

ETT 101/L, MAT 105. ETT 215 and ETT 215L are corequisities.

III. Textbook and/or other Required Material

Text: Dietel & Dietel, <u>C How to Program</u>, Prentice Hall,
References: Handout materials provided by the instructor.

IV. Course Objectives

Upon completion of this course, each student will be able to:

1. Create, edit, compile and run ANSI C programs.
2. Write flowcharts and program control statements to control program flow
3. Work effectively with C's data types.
4. Work effectively with functions.
5. Work effectively with pointers, arrays, and strings.
6. Use file input/out techniques for storing and retrieving data.

IV. Expanded Course Description

A.   Expanded Description of the Course

1.Introduction to C Programming, data types and operations.

Definitions; variables and declarations; keyboard I/O; arithmetic operations; basic type casts. Use of header files; Basics of the C preprocessor. Basic console I/O; printf(), scant().

2. Program Control

If-else: for loop; relational operators; while; do while loops; nested loops. Use of break, switch and continue; using menus for program control.

3. Functions and Function prototypes: passing arguments, recursion.

4. Pointers, arrays and strings: pointers as parameters; reference parameters; character and string I/O.

5. File input/output: text (ASCII) I/O; binary I/O; random access operations.

B. Typical Laboratory Experiments

1. Create, edit and run a C program.
2. Write a C program using control statements.
3. Write a C program to utilize data types, I/O formatting Control, and function.
4. Write a C program to utilize pointers and arrays.
5. Write a C program to include input and output.
6. Write a C program using switch structure.
7. Write a C program to create and use Data files.
8. Write a C program to use strings and characters.
9. Write a C program using 2 dimensional arrays.
10. Write a C program to use structures.

VI. Class/Laboratory Schedule

Two 75 minutes lectures per week
One three hours lab session per week

VII. Contribution of Course to Professional Component

Students learn to write engineering applications programs, develop algorithms, compile and execute programs using control structures, functions, arrays and pointers. Students also write reports for laboratory experiments

VIII. Evaluation of Students

The instructor evaluates outcomes using the following methods:
- Homework assignment submittals
- Examinations: Midterm and Final
- Programming assignments
- Laboratory reports

The student grades are typically based on the following factors:
Quizzes, homework, midterm and final Exam.

IX. Relationship of Course to Program Outcomes

Crse Obj	Program Outcomes										
	(a) Use of modern tools of discipl	*(b)* Use of math, science, Engg & Tech	*(c)* Do experi -ments	*(d)* Dsn of sys & compo nents	*(e)* Work on teams	*(f)* Do Tech probs	*(g)* Eff Com	*(h)* Life-long learn	*(i)* Prof, ethics, social resps	*(j)* Prof, soc, globl, diversity	*(k)* Qual, Cont impr, timeli ness
1		X	X			X					
2		X	X			X					
3	X	X	X			X					
4		X	X			X					

5	X	X	X		X	X					