CMPE112 - Programming Fundamentals

Department:
Computer Engineering

Program Name: Computer Engineering	**Program Code:** 25

Course Number: CMPE112	**Credits:** 4 Cr	**Year/Semester:** 2018-2019 Fall

☒ Required Course ☐ Elective Course

Prerequisite(s):
CMPE101 Foundations of Computer Engineering

Instructor information:
Name: Assoc. Prof. Dr. Ekrem Varoğlu (Gr. 01), **Office:** CMPE217
Name: Prof. Dr. Marifi Güler (Gr. 02), **Office:** CMPE209

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Catalog Description:

An overview of C programming language. Sequential structures, data types and classes of data, arithmetic operators and expressions, assignment statements, type conversions, simple I/O functions (printf, scanf, fprintf, fscanf, gets, puts, fgets, fputs). Selective structures, relational operators, logical operators, conditional expression operator, conditional statements (if, switch). Repetitive structures, while, do-while, for loops, loop interruptions (goto, break, continue). Functions, function definitions and function calls, recursion. Arrays, array declaration, array initialization, arrays as function arguments. Pointers, basics of pointers, functions and pointers arrays and pointers, strings and pointers. Library functions for processing strings, pointer arrays. Structures, basics of structures, structures and functions, arrays of structures.

Aims and Objectives

A student who successfully fulfills the course requirements will learn the key topics of C programming language (including sequential structure, selective structure, repetitive structure, arrays, pointers and structures) and problem solving with C programming language.

Course Web Page:
https://staff.emu.edu.tr/ekremvaroglu/en/teaching/cmpe112

Textbook(s):
"A First Book of ANSI C", Gary J. Bronson, Thompson Course Technology, 4the Ed. 2007.

Indicative Basic Reading List:
-"Problem Solving and Program Design in C", J. R. Hanly and E. B. Koffman, Sixth Ed., Pearson Addison-Wesley, 2009.
-"C How to Program", Fifth Edition, P. J. Deitel and H. M. Deitel, Pearson Education, 2007.
-"C: The Complete reference", Herbert Schildt, McGraw-hill, 1995.
-"The C Programming Language", B. Kernighan and D. Ritchie, 2nd edition, 1988.

Extended Reading List:
"C: The Complete reference", Herbert Schildt, McGraw-Hill, 1995.

Topics Covered, Class Schedule and Lab Schedule: (Tentative)
(4 hours of lectures per week)

WEEK	TOPICS	BOOK CH.
1	Introduction , Formatted I/O	Ch. 2
2	Sequential Structures	Ch. 2, 3
3	Selective Structures	Ch. 4
4	Repetitive Structures	Ch. 5
5	Functions	Ch. 6, 7
6	Arrays	Ch. 8
7	Pointers	Ch. 11
8	Tutorial and review	
9-10	**Midterm Exams**	
11	Pointers (cont.)	Ch. 11
12	Pointers and arrays	Ch. 11
13	Strings	Ch. 9
14	File I/O	Ch. 10
15-16-17	**Final Exams**	

LAB SCHEDULE

Lab No.	Date	Week no.
LAB1	Week of October 8, 2018	3
LAB2	Week of October 15, 2018	4
LAB3	Week of October 22, 2018	5
LAB4	Week of November 5, 2018	7
LAB5	Week of December 3, 2018	11
LAB6	Week of December 10, 2018	12
LAB7	Week of December 17, 2018	13
LAB8	Week of December 24, 2018	14

Course Learning Outcomes

Upon successful completion of the course, students are expected to have the following competencies:

(1) Ability to write a complete C program for solving a problem
(2) Ability to use the MS-Visual Studio IDE to edit, compile, and executing C codes
(3) Understand problem solving concept using the computer and ability to construct an algorithm and /or flowchart for solving a problem
(4) Understand the Basics of C high level programming languages
(5) Ability to use if-statement and switch statement to implement selective structure programs
(6) Ability to use while-loop, do-while loop, and for-loop to construct repetitive structure
(7) Ability to use modular programming for implementing multi-task problem
(8) Ability to use arrays concept in C programming
(9) Ability to use pointers in C programming
(10) Ability to use strings in C programming
(11) Ability to use structures in C programming

	Method	No.	Percentage
Assessment	Midterm Exam	1	40%
	Lab work	Lab Experiments	15 %
	Final Examination	1	45%
	Attendance	-	0% (No points for assignment)

Attendance:
Lectures:

- Attendance will be taken in every lecture, but no points will be given for it.

Exams:

- If you miss midterm or final exam, you can take the makeup exam provided that you submit a valid written medical report to your instructor stating your excuse within 3 working days of that examination. If you miss both exams, you can take makeup only for the final.
- If you miss both midterm and final exams and do not submit any written report, you will automatically get an "NG" grade.

Labs:

- There will be no makeup for the missed lab experiments/tutorials or assignment.
- If you attend at least 7 (out of 8) of the lab experiments and tutorials, you will get full grade. If you attend less, then you will be graded proportional to the number of lab experiments and tutorials.
- Exemption for the lab work or assignment will not be provided.

Plagiarism

Plagiarism (which also includes any kind of cheating in exams, assignments, and lab works) is a disciplinary offence and will be dealt with accordingly. Furthermore, the penalty of plagiarism is to get zero for the corresponding exam, assignment, or lab work.

Important Remarks

- You should have regular attendance to the lectures for being successful in the course.
- Course related materials, exercises, laboratory experiments, past exam questions and announcements will be published on the course web site and you will be responsible from all. Note that the course web site can update during the semester. Therefore, check it regularly.

Contribution of Course to Criterion 5

Credit Hours for: => Mathematics & Basic Science : 0 Engineering Sciences and Design : 4 General Education : 0

Relationship of Course to Program Outcomes

The course has been designed to contribute to the following program outcomes:

a) an ability to apply knowledge of mathematics, science, and engineering

e) an ability to identify, formulate, and solve engineering problems

k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice