CMPE112-CMSE112-AING112 - Programming Fundamentals

Department:
Computer Engineering

Program Name:
Computer Engineering

Program Code: 25

Course Number:
CMPE112-CMSE112-AING112

Credits:
4 Cr

Year/Semester:
2024-2025 Spring

☒ Required Course ☐ Elective Course

Prerequisite(s):
CMPE107-CMSE1 07-AING107

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.

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.

Textbook(s):
"C Programming: A Modern Approach", Second Edition, K. N. King, Norton, 2008.
"Programming in ANSI C", Ram. Kumar and Rakesh Agrawal, West Publishing, 1992

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.

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) (2 hours of laboratory per week)

WEEK	Starting Day	LABS
1	February, 20	**No Lab**
2	February, 24	**No Lab**
3	March, 03	Exp 1 - Introduction
4	March, 10	Exp 2 – Selection
5	March, 17	Exp 3 – Loops
6	March, 24	Exp 4 – Arrays
7	April, 2	**No Lab**
8	April, 7	**No Lab**
9-10	MIDTERMS WEEKS (April 11-26)	*******
11	April, 28	**No Lab**
12	May, 5	Exp 5 – Functions
13	May, 12	Exp 6- Pointers
14	May, 20	**No Lab**
15	May, 26	Exp 7 - Strings
16-17-18	FINALS WEEKS (June 11-26)	*******

Course Learning Outcomes:
On successful completion of the course, the student is expected to be able to:
(1) Design and implement programs in the standard version of C

(2) Develop good programming skills
(3) Use modern C compilers and debuggers (such as Microsoft Visual C)

	Method	No.	Percentage
Assessment	Midterm Exam	1	35%
	Labs	7 (6 labs + 1 lab Exam)	15 %
	Final Examination	1	50%

Exams:

- You have re-sit exam chance at the end of semester if you fail. Note that; if your letter grade is "D" or above and you have no warning, you will not be able to enter re-sit exam. Yet, be aware that if you attend the re-sit exam, grade you get will be replace your midterm and final exam grades even if your grade is decreased.
- If you miss the midterm or the final exam, you **MUST submit a medical report to the course instructor, stating your excuse, within 3 days of that examination. The report will be evaluated by the committee of instructors. If the committee approves, you will be able to take a make-up exam. You will be able to take only one make-up exam.**
- If you miss both midterm and final exams and do not submit any written report, you will get an "NG" grade. In the same case, if you submit report for both missed exams, you will be able to enter make-up for one of them only.

Labs:

- There will be no makeup for the missed lab experiments. The sum of the highest 5 grades (out of 6) plus the lab exam grade will be used to calculate the overall lab grade. Exemption for lab work 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

Prepared by: Prof. Dr. Ekrem Varoğlu	**Date Prepared:** February 17, 2025