

CMPE112 - Programming Fundamentals

Department:

Computer Engineering

Program Name:

Computer/Software Engineering

Program Code: 25/29**Course Number:**

CMPE112

Credits:

4 Cr

Year/Semester:

2023-2024 Summer

 Required Course Elective Course**Prerequisite(s):**

CMPE101 Foundations of Computer Engineering

Instructor information:**Name:** John Olaifa, **Office:** CMPE104**Assistant information:****Name:** R.A. Ali Moayed, R.A. Behnam Bojnordi Arbab, R.A. Mahmut Sevince**Meeting Times and Places:****Lectures:**

Monday - Friday 8:30-10:20

Room: CMPE126**Labs:**

Tuesday 12:30-14:20

Room: CMPE 137**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. 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.

Course Web Page: <https://staff.emu.edu.tr/johnolaifa/en/teaching/aingcmpecmse112>**Textbook(s):**

"Programming in ANSI C", Ram Kumar and Rakesh Agrawal, West Publishing Company, 1992.

"G. J. Bronson, *A First Book of ANSI C*", 4th ed., Course Technology, 2006.**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
1	Introduction , Formatted I/O
1	Sequential Structures
2	Selective Structures
2	Repetitive Structures
3	Functions
3	Arrays
	Midterm Exams
4	Pointers
4	Pointers
5	Pointers and arrays
5	Strings
6	File I/O
	Final Exams

LAB SCHEDULE

GROUP 01	
LAB1	06/08/2024 -Experiments 1 & 2
LAB2	13/08/2024 -Experiments 3 & 4
LAB3	20/08/2024 -Experiments 5 & 6
LAB4	27/08/2024 -Experiments 7 & 8

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 strucure 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

Assessment	Method	No.	Percentage
	Attendance	-	5%
	Lab work	4	20 %
	Quiz	2	25%
	Final Examination	1	50%

Attendance:

Lectures:

- Attendance will be taken in every lecture, and $\geq 75\%$ will be worth 5 points. Details will be announced on Teams.

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. But, instead, you will be exempted from one lab experiment.
- Exemption from the lab work is not 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: Dr. John Olaifa

Date Prepared: 22 July 2024