ANKARA YILDIRIM BEYAZIT UNIVERSITY
DEPARTMENT OF MATHEMATICS

2022 - 2023 Fall

Course Code:	CENG 103
Course Name:	Computer Programming I
Course Credits (Hours):	6 (3 lecture hours + 2 lab. hours)
Lecturer:	**Yusuf Evren AYKAÇ** e-mail: *evrenaykac@gmail.com*
General Description:	This course is going to be the first handshake with programming including design and coding standpoints. Some major topics are →-Syntax and semantics of programming languages. -Programming style. -Program debugging and testing. -Data representation. -Simple arithmetic expressions, decision, and control statements. -Arrays. -Introduction to standard libraries. Structured programming technique will be introduced along with the usage of C language.
Textbook:	Problem Solving and Program Design in C, Jeri R. Hanly, Elliot B. Koffman, Addison Wesley, 8th Edition, 2015
Other Auxiliary materials:	Lecture Notes Reference Books: • C How to Program, Deitel & Deitel, Pearson International Edition
Important Notes:	1. 75% attendance is compulsory, otherwise you get DZ. 2. There will be 5 equally weighted lab quizzes scheduled in the weekly plan below. Only the highest four will be taken into account.

Grading:

Lab Quizzes	**20%**
Homework/Assignment	**25%**
Lab && Class Performance	**5%**
Midterm	**20%**
Final	**30%**

Letter Catalog:
AA >= 90
BA >= 80
BB >= 70
CB >= 65
CC >= 60
DC >= 55
DD >= 50
FD >= 40
FF

Week #	Lecture Topics
1	Information about the course: Objective,Textbook, Grading Introduction to Programming Software Development Method Expressing Algorithms Steps in Developing a C Program Structure of a C Program Comments Preprocessor Directives Main Function Prototype Variable Declarations Data Representation: Reserved Words, Identifiers, Variables
2	Data Types, Constants, Punctuators Declaration and Assignment Statements Arithmetic Operators (+, -, *, /, %) Arithmetic Expressions I/O Statements: **printf** and **scanf** Formatting Output
3	Built-in Functions Boolean Expressions: Relational and Logical Operators Precedence of Operators Simple Boolean Expressions Compound Boolean Expressions Selection Structures: Simple if Statement and if…else **LQ-1**
4	Nested if Statement Switch Statement Counter-controlled Repetition (**for** Loops) Examples with for Loops
5	Increment – Decrement Operators Sentinel-controlled Repetition (while Loops) Do…while Data Validation. Loop Conversions **LQ-2**
6	Nested Loops Modular Programming Function Prototype void functions with no parameters void functions with parameters
7	Functions that return a value Parameter Passing Formal and Actual Parameters Scope of Variables Functions with Output Parameters Pointers Call by Value – Call by Reference **LQ-3**
8	File Operations Opening, reading, writing, closing text files
9	**MIDTERM WEEK** ⏱

10	One-dimensional Arrays Declaration, Assignment, Initialization Parallel Arrays Operations on One-dimensional Arrays Input / Output (getchar, putchar) Counting Find sum, average, min, max **LQ-4**
11	One-dimensional Arrays and Functions: Arrays as Input Parameters Arrays as Output Parameters
12	Two-dimensional Arrays Declaration, Initialization, Operations **LQ-5** Matrix Operations
13	Two-dimensional Arrays as Function Parameters Pointers: Declaration, pointer expressions and arithmetic, pointers as function parameters, Pointers, one-dimensional arrays, two dimensional arrays
14	Recursion: versus iteration, exercises (factorial, fibonacci, etc) **HOMEWORK DEADLINE**
	 **FINALS** 

Prerequisites
A broad knowledge of math is enough. Any further concepts may be immaterial to this course.
What will be taught
Software development methods How to express algorithms, ways of doing that C language integrated development environment Formatted input/output Structured program development Program control Functions File operations Arrays C Preprocessor Pointers Code readability, writability, orthogonality, and reliability