



**Eastern Mediterranean University**  
**Faculty of Engineering**  
**Department of Electrical and Electronic Engineering**

**EENG112/INFE112 – Introduction to Programming**

**Year and Semester** : 3/4, Fall/Spring  
**Credit Hour** : (4,1) 4  
**Pre/Co-requisite(s)** : -  
**Academic Term** : Spring 2019-20

**Catalog Description:**

Internal data representation, integers, reals, characters. Problem solving and algorithm design. Program structures. Sequencing, selection and iteration. Pseudo-code, flow-charts and other techniques. High-level programming environments. Variables, expressions and assignments. Introducing C programming. Structured programming; sequential, selective and repetitive structures. Function definition and function calls. Prototypes and header files. Recursive functions. Arrays and pointers. Dynamic memory management. Parameter passing conventions. Multidimensional arrays. Conditional compilation, modular programming and multi-file programs. Exception handling. File processing. Formatted I/O. Random file access. Index structures and file organization.

**Prerequisite by Topic:**

General knowledge about computer hardware and software. Basic knowledge of decision, and repetition structures in C language.

**Instructor & Lab Assistant:**

Noushin Hajarolasvadi  
E-mail: [noushin.hajarolasvadi@cc.emu.edu.tr](mailto:noushin.hajarolasvadi@cc.emu.edu.tr)  
Room: EE 111, Phone: 630 1384  
Office Hours: TBA

Mustafa Mulla  
E-mail: [mustafa.mulla@emu.edu.tr](mailto:mustafa.mulla@emu.edu.tr)  
Room: EE 110 , Phone: 630 2775  
Office Hours: TBA

**Textbook:**

C How to Program, H. M. Deitel and P. J. Deitel, Prentice Hall, 6th edition, 2010.

**References:**

A Book on C, Kelley and Pohl, Addison Wesley, 4<sup>th</sup> edition, 1998.

**Course Objectives :**

At the end of this course, students will be able to:

- i. *understand* the basic terminology used in computer programming
- ii. *write, compile* and *debug* programs in C language.
- iii. *use* different data types in a computer program.
- iv. *design* programs involving decision structures, loops and functions.
- v. *explain* the difference between call by value and call by reference
- vi. *understand* the dynamics of memory by the use of pointers.
- vii. *use* different data structures and create/update basic data files.

## COURSE OUTLINE & ORGANIZATION

### Review of Structural Programming concepts

Review of decision structures: if, if-else, switch. The loop constructs: while repetition statement, nested control structures, increment and decrement structures.

### C Program Control

Repetition essentials, counter controlled repetition, for repetition statement, switch multiple selection structure, do ... while repetition, break and continuo, logical operators.

### Functions

Function definition and function call. Function prototypes and header files. Storage classes; auto, static, register and volatile variables. Separate compilation and data abstraction. Recursion.

### Arrays

Declaration and initialisation of arrays. Passing arrays to functions. Sorting and searching arrays. Multidimensional arrays.

### Pointers

Basics of pointers. Array-pointer referencing duality. Strings. Dynamic memory management. Functions and pointers; parameter passing conventions. Pass-by-value and pass-by-reference.

### Design Component:

Engineering Science Credit: 2  
Engineering Design Credit: 2

**Computer Usage:** Multimedia labs are housing the lectures with high standard computer facilities. Students are required to develop solutions to problems in C programming language by using the computers in the Multimedia labs and various other computer equipped laboratories.

**Laboratory Work:** Laboratory sessions are organized in parallel to the coursework. Students are asked to perform 7 different experiments. For each experiment the students are asked to prepare and submit a lab report.

## GRADING POLICY

Mid-term Examination	30%
Final Examination	40%
Lab + Homework	20 %
Quiz	10 %

### NG and LAB Policy:

Students who do not attend more than 70% of the course lecture hours and miss two exams will be given **NG** grade. Students failing from the Laboratory fail from the course.