

## Faculty of Computers and Information Technology

### Computer Programming-1

**Information :**

**Course Code :** CS112

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Faculty of Computers and Information Technology

**Instructor Information :**

Title	Name	Office hours
Lecturer	HEBA MOHSEN MOHAMED MOSAAD HUSSEIN	4
Assistant Lecturer	Amr Mansour Mohsen Afifi	4
Teaching Assistant	Mariam Ali Ibrahim Elsayed	3
Teaching Assistant	Mona Mohamed Mohamed Ali Almakhton	

**Area Of Study :**

Explain the different structured programming concepts.  
Analyze a given requirement to match the structured programming concepts  
Compare and select methodologies from range of techniques, theories and methods to develop a structured programming

**Description :**

Structured program development: problem solving decision structure, repetition structures. Top-down and stepwise refinement. Subprograms: Procedures and functions. Structured data types: arrays, structures and classes. Recursion.

**Course outcomes :**

**a. Knowledge and Understanding: :**

- 1 - Apply the basic concepts and theories of algorithms using pseudo-code.
- 2 - Combine and evaluate different structured programming tools.
- 3 - Use the concepts of control structures, functions, arrays and pointers of structured programming.
- 4 - Analyze the structured techniques and use in practical applications of structured programming.

**b. Intellectual Skills: :**

- 1 - Illustrate a set of methods for a given problem associated with their results for structured programming
- 2 - Select appropriate methodologies and techniques for a given problem solution and setting out their limitations, restrictions and errors for structured programming
- 3 - Evaluate and justify different solutions using well-defined structured programming criteria
- 4 - Compare and differentiate between algorithms, methods and techniques used in structured programming

**c. Professional and Practical Skills: :**

- 1 - Analyze, Design, Implement and test structured techniques to solve various problems using structured programming

2 -	Apply, design methodologies, C languages and different supporting tools for structured programming
3 -	Use human computer interaction principles in the construction and evaluation of user interfaces for structured programming language applications

**d.General and Transferable Skills :**

1 -	Exploit a range of learning resources
2 -	Utilize effectively general computing facilities

**ABET Course outcomes :**

1 -	Apply the algorithmic method to design solutions for computational problems.
2 -	Apply software engineering principles and top-down design approach to develop structured modular programs.
3 -	Test and analyze algorithmic solutions for computational problems.
4 -	Demonstrate adequate proficiency of developing a high-level program on the computer.
5 -	Demonstrate adequate proficiency of using a structured programming language.
6 -	Use a structured programming language to develop structured programs.
7 -	Use techniques of control structures, functions, arrays, and pointers of structured programming.
8 -	Test and debug structured programs to identify syntax and run-time errors.

**Course Topic And Contents :**

Topic	No. of hours	Lecture	Tutorial / Practical
Introduction to Computer Programming	4	2	2
Fundamentals of a C Program- Data Types and Operators	4	2	2
Control Structures - Creating Conditional Statements	4	2	2
Creating Iteration Statements	4	2	2
Functions	4	2	2
Arrays	4	2	2
Strings	4	2	2
Pointers	4	2	2
Mid Term Exam	2		
Structures and Unions	4	2	2
Bitwise Operations	4	2	2
Input and Output	4	2	2
Project presentation	4	2	2
Final Exam	2		

**Teaching And Learning Methodologies :**

Interactive Lectures including discussion
Practical Lab Sessions
Self-Study (Project / Reading Materials / Online Material / Presentations)
Case Studies

**Course Assessment :**

Methods of assessment	Relative weight %	Week No	Assess What
Midterm Exam (s)	20.00	9	Knowledge and Understanding, Practical / Professional Skills, Intellectual Skills

**Books :**

Book	Author	Publisher
Accounting (Ebook)	Stephen R. Davis	Wiley

**Course Notes :**

Course Notes are available with all the slides used in lectures in electronic form on Learning Management System (Moodle)