SH. A.
أكاديميـة الشـروق

المعهد العالى للحاسبات وتكنولوجيا المعلومات
مدينة الشروق ـ القاهرة
شعبة علوم الحاسب

Course specification

Course Code: CS 102

Course Title: computer programming

Academic Year: 2023 / 2024

Course specification
(CS 102 – computer programming)

Course Outline	
Faculty:	*HICIT- (Higher Institute for Computers & Information Technology-El Shorouk Academy)*
Programme(s) on which the course is given:	Undergraduate program in Computer Science
Major or minor element of programme:	Compulsory
Department offering the program	Department of Computer Science
Department offering the course:	Department of Computer Science
Level	First Level
Date of specification approval	03/09/2022

Basic Information			
Code: CS 102	**Title:**	Computer programming	
Prerequisites:	CS 101 Intro to computer Science		
Weekly Hours:			
Lecture: 2	**Exercise: -**	**Practical : 2**	**Total: 3**

Professional Information

Course Aims:

The aim of the module is to introduce the concepts of structured programming and to teach ways and techniques of good programming. The module provides an introduction to algorithms and to the C# language. Emphasis is put on problem solving and students are expected to develop the ability to write efficient computer program code for simple problems.

After completing this course students must be able to:
- Understand the principles of algorithms, flowcharts and pseudo code.
- Understand the modules
- Understand how to design a complete program

Program ILOs Covered by Course			
Knowledge and understanding	Intellectual Skills	Professional and practical skills	General and Transferable skills
A2, A13	**B6, B9, B10, B13**	**C1, C5**	**D2, D5, D9**

Intended learning outcomes of course (ILOs)

a. Knowledge and Under-Standing:

a1- define a problem solutions in the form of algorithms using pseudo-code

a2- understand the essential concepts of structured programming concepts such as the C# data type, functions, array.

a3- write simple algorithms using C# different data types

a4- understand the fundamental concepts, principles and theories of computing and computer science covering topics such as algorithms,

a5- explain structured programming logic, techniques and use in practical applications.

b. Intellectual Skills:

b1- Illustrate methods to formulate and solve problems.

b2- Apply the basic C# concepts including data types, conditional, looping mechanisms, functions and arrays.

c. Professional and practical skills

At the end of the course, the student will be able to:

c1- use structured programming techniques to solve various problems using the C# programming language.

c2- implement programs which show an understanding of how to pass data between different modules.

c3- use different forms of arrays and passing arrays to functions to solve problems.

c4-design, implement/code and debug simple computer programs in C#;

d. General and transferable skills

d1- Learn some Internet/Library searching strategies.

d2- write a short report using appropriate scientific language.

d3. Use IT skills and display mature computer literacy.

Contents

Topic	Contact Hours	
	lecture	Lab
Introduction to Computer Programming	3	4
Introduction to the Visual Studio .NET ID	3	4
Fundamentals of a C# Program	3	4
Introducing Data Types and Operators	3	4
Control Structures	6	8
Creating Conditional Statements	6	8
Creating Iteration Statements	6	8
Methods & Recursion	3	4
Arrays	6	8

Teaching and learning methods	
Teaching and learning methods	**Used**
Lectures	√
Tutorial Exercises	√
Practical Lab	√
Discussions.	√
Self – Learning (Reading material, Websites search,)	√
Self-studies	√
Group work	√
Presentation	√
Problem solving/problem solving learning based	√
Case study	
Synchronous E-Learning	√
Video lectures	√
Asynchronous E-Learning	√

Student assessment methods & Schedule		
Methods	**Used**	**Week#**
Midterm Exam	√	**8**
Final Exam	√	**16**
Course Project	√	**14**
Course Work & Quizzes	√	**2-14**
Practical Exam	√	**15**

Assessment Weight	
Assessment	Weight %
Mid Term Exam	15
Practical Exam	10
Final Exam	60
Course Work & Quizzes	15
Total	100

Course Work &Quizzes
Short Exams, Assignments, Research, Reports, Presentations
Class/Project discussion

List of references	
Essential books (textbooks)	- Visual C# 2010 How to Program, 4/e, Deitel & Associates,2010
Course notes	E-Learning Portal -PowerPoint presentations of all course materials – All labs material
Recommended book(s)	**C#: Programming Basics for Absolute Beginners (Step-by-Step C#) Paperback – August 24, 2017** by Nathan Clark
Periodicals, website	https://www.w3schools.com/cs/index.php https://learn.microsoft.com/en-us/dotnet/csharp/tour-of-csharp/tutorials/
Videos link	

Required Facilities		
Tools & SW (Technology facilities):	- Visual Studio 2012	
Teaching facilities:	Whiteboard	√
	Computer Lab	√
	Data show	√
	E-Learning	√
	Videos	√
	Website	√

Course Content/ILO Matrix														
Course Contents	**Knowledge & understanding**					**Intellectual skills**		**Professional and practical skills**				**General**		
	a1	a2	a3	a4	a5	b1	b2	c1	c2	c3	c4	d1	d2	d3
Introduction to Computer Programming	√													
Introduction to the Visual Studio .NET IDE		√												
Fundamentals of a C# Program			√					√						
Introducing Data Types and Operators				√			√	√	√					

Control Structures					√			√		√	√		√	
Creating Conditional Statements					√			√			√	√	√	
Creating Iteration Statements					√	√		√				√		
Methods & Recursion					√	√		√						
Arrays					√	√		√						

Learning Method /ILOs Matrix

Learning Methods	Knowledge & understanding					Intellectual skills		Professional and practical skills				General		
	a1	a2	a3	a4	a5	b1	b2	c1	c2	c3	c4	d1	d2	d3
Lectures	√	√	√	√	√	√	√	√	√	√	√			
Tutorial Exercises						√	√	√	√	√	√			
Practical Lab						√	√	√	√	√	√			
Discussions.						√	√	√	√	√	√	√	√	√

Assessment Methods /ILOs Matrix

Assessment Methods	Knowledge & understanding					Intellectual skills		Professional & practical skills				General		
	a1	a2	a3	a4	a5	b1	b2	c1	c2	c3	c4	d3	d4	d5
Mid Term Exam	√	√	√	√	√	√	√	√	√	√	√			
Final Exam	√	√	√	√	√	√	√							
Course Project	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Course Work &Quizzes	√	√	√	√	√	√	√	√	√	√	√			
Practical Exam	√	√	√	√	√	√	√	√	√	√	√			

Course ILOs \ Prog ILOs		Knowledge & understanding		Intellectual skills				Professional and practical skills		General		
		A2	A13	B6	B9	B10	B13	C1	C5	D2	D5	D9
Knowledge and Understanding	a1	√										
	a2	√										
	a3		√									
	a4	√										
	a5		√									
Intellectual skills	b1			√	√	√						
	b2						√					
Professional and practical skills	c1							√				
	c2								√			
	c3								√			
	c4								√			
General skills	d1									√	√	
	d2											√
	d3									√	√	√

Course Coordinator   : Dr. Mohamed Ahmed Hussein (   )
Head of Department : Dr. Ahmed El-Abbassy   **(   )**
Date: 3/9/2023