

Course specification

(1201 Structured Programming)

Faculty: HICIT

Programme(s) on which the course is given: Under graduate program in Computer Science

Major or minor element of programme: Compulsory

Department offering the programme: Department of Computer Science

Department offering the course: Department of Computer Science

Year / Class: 1st Year – 2nd semester

Date of specification approval: 22/2/2016

A- Basic Information

Title: Structured Programming

Code: 1201

Weekly Hours:

Lecture : 3

Exercise: -

Practical: 4

Total: 7

B- Professional Information

1- Course Objectives:

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.

- Understand the principles of algorithms, flowcharts and pseudo code.
- Understand the modules
- Understand how to design a complete program

2- Program ILOs Covered by Course

Program Intended Learning Outcomes			
Knowledge and understanding	Intellectual Skills	Professional and practical skills	General and Transferable skills
a2, a13	b6, b9, b10, b13	c1, c5	

3 - Intended learning outcomes of course (ILOs)

a: Knowledge and Understanding

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.

4- Contents

Topic	Hours	Lec.	Exc/Lab
Introduction to Computer Programming	7	3	4
Introduction to the Visual Studio .NET IDE	7	3	4
Fundamentals of a C# Program	7	3	4
Introducing Data Types and Operators	7	3	4
Control Structures	14	6	8
Creating Conditional Statements	14	6	8
Creating Iteration Statements	14	6	8
Methods & Recursion	7	3	4
Arrays	14	6	8

5- Teaching and learning methods

- 4.1 Lectures
- 4.2 Tutorial Exercises
- 4.3 Practical Lab
- 4.2 Discussions.

6 -Student assessment methods

- 5.1 Midterm Exam: To assess the knowledge and understanding achieved by the student during the previous weeks.
- 5.2 Final Exam: To evaluate what the student gain at the end of the course, and to assess: the knowledge and understanding, general skills, and intellectual skills.
- 5.3 Course Work & Quizzes: To keep the student always in the course, and to evaluate knowledge, understanding, intellectual, and transferable skills.
- 5.4 Practical Exam: to measure the ability of students to design and implement a software program.

Assessment Schedule

Assessment	Week #
------------	--------

Mid Term Exam	8
Final Exam	16
Course Work & Quizzes	2-14
Practical Exam	15

Assessment Weight

Assessment	Weight %
Mid Term Exam	10%
Final Exam	70%
Course Work & Quizzes	10%
Practical Exam	10%
Total	100

Course Work & Quizzes: (Short Exams, Assignments, Researches, Reports, Presentations, Class/Project discussion)

7 -List of references

7.1 Text Books

- Visual C# 2010 How to Program, 4/e, Deitel & Associates, 2010

7.2 Internet Location :

- <http://msdn.microsoft.com/en-us/vcsharp/default.aspx>
- http://en.wikipedia.org/wiki/C_Sharp
- [http://en.wikipedia.org/wiki/C_Sharp_\(programming_language\)](http://en.wikipedia.org/wiki/C_Sharp_(programming_language))
- <http://functionx.com/csharp/index.htm>
- <http://www.csharp-station.com/Tutorial.aspx>

8- Required Facilities

8.1 Tools/Software

- Visual Studio 2012

9-Course Matrices

9.1-Course Content/ILOs Matrix

Course Contents	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					√	√	√							

9.2-Learning Method /ILOs Matrix

Learning Methods	a1	a2	a3	a4	a5	b1	b2	c1	c2	c3	c4	d1	d2	d3
-------------------------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

Lectures	√	√	√	√	√	√	√	√	√	√	√			
Tutorial Exercises						√	√	√	√	√	√			
Practical Lab						√	√	√	√	√	√			
Discussions.						√	√	√	√	√	√	√	√	√

9.2-Assessment Methods /ILOs Matrix

Assessment Methods	a1	a2	a3	a4	a5	b1	b2	c1	c2	c3	c4	d1	d2	d3
Mid Term Exam	√	√	√	√	√	√	√	√	√	√	√			
Final Exam	√	√	√	√	√	√	√	√	√	√	√			
Course Work & Quizzes	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Practical Exam	√	√	√	√	√	√	√	√	√	√	√			

Course coordinator: Dr Mohamed EL-Zeweidy ()

Head of Department: Dr. Farouk Shabaan ()

Date: 22/2/2016