



**University/Academy:** Arab Academy for Science, Technology & Maritime Transport  
**Faculty/Institute:** College of Engineering & Technology  
**Program:** B.Sc Computer Engineering

### Form no. (12): Course Specification

#### 1- Course Data

Course Code: <b>CC319</b>	Course Title: <b>Advanced Programming</b>	Academic Year/Level: <b>3<sup>th</sup> year / 5<sup>th</sup> semester</b>
Specialization: <b>Computer Engineering</b>	No. of Instructional Units <b>3</b>	Lecture <b>2</b>
		Practical <b>2</b>

#### 2- Course Aim

- Understand the goals of Object-Oriented Programming as they contrast with Structured Problem Solving
- Identify the components of Object-Oriented Programming including Classes, Objects, Data Abstraction, Encapsulation, Inheritance, Polymorphism and Error Handling.
- Discuss and compare the differences between procedural and Object-Oriented problems and solutions
- Discuss how elements of objects are accessed including composition of objects
- Design and implement solutions using a prominent object oriented programming language
- Effectively debug programs

#### 3- Intended Learning Outcomes

<b>a- Knowledge and Understanding</b>	<b>Through knowledge and understanding, students will be able to:</b> <ul style="list-style-type: none"> <li>• Show basic Concepts of C# programming language</li> <li>• Interpret:           <ul style="list-style-type: none"> <li>• Variables and Data types</li> <li>• Controlled statements (if-else , switch)</li> <li>• methods, arrays</li> <li>• Classes and objects.</li> <li>• Inheritance, polymorphism</li> <li>• Error Handling</li> </ul> </li> </ul>
<b>b- Intellectual Skills</b>	<b>Through intellectual skills, students will be able to:</b> <ul style="list-style-type: none"> <li>• Use C# language to solve problems</li> <li>• Map the problem to a program</li> <li>• Apply Object Oriented techniques to produce program with high quality</li> </ul>
<b>c- Professional Skills</b>	<b>Through professional and practical skills, students will be able to:</b> <ul style="list-style-type: none"> <li>• Write Console and windows programs using C#</li> <li>• Write, Compile, and execute C# programs</li> <li>• Use Visual Studio 2010 IDE.</li> <li>• Debug programs.</li> </ul>
<b>d- General Skills</b>	<b>Through general and transferable skills, students will be able to:</b> <ul style="list-style-type: none"> <li>• Practice:           <ul style="list-style-type: none"> <li>• Problem solving Skills.</li> <li>• Software engineering Skills.</li> <li>• Designing programs Skills</li> </ul> </li> </ul>

#### 4- Course Content

<b>Week No.1</b>	Introduction to C# programming language
<b>Week No.2</b>	Input/output statement, Conditional statement
<b>Week No.3</b>	Iterations & windows application design
<b>Week No.4</b>	Arrays & methods
<b>Week No.5</b>	Classes & objects I & Error Handling
<b>Week No.6</b>	Classes & objects II & Error Handling
<b>Week No.7</b>	7 <sup>th</sup> Week Exam
<b>Week No.8</b>	Inheritance I
<b>Week No.9</b>	Inheritance II
<b>Week No.10</b>	String object
<b>Week No.11</b>	Polymorphism
<b>Week No.12</b>	12 <sup>th</sup> Week Exam.
<b>Week No.13</b>	Polymorphism II
<b>Week No.14</b>	Abstract classes & interfaces
<b>Week No.15</b>	Exception handling
<b>Week No.16</b>	Presentation of projects and Final Exam.

#### 5- Teaching and Learning Methods

<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Tutorials</li> <li>• Reports &amp; sheets</li> <li>• Laboratories</li> <li>• Seminars</li> </ul>
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#### 6-Teaching and Learning Methods for Students with Special Needs

<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Tutorials</li> <li>• Reports &amp; sheets</li> <li>• Laboratories</li> <li>• Seminars</li> </ul>
<p>The academic advisors of each student, as well as dedicated department TAs monitor the students' progress and solve any problem he/she may encounter.</p>

#### 7- Student Assessment

<b>a-Procedures used</b>	1-Written Examinations to assess The Intended Learning Outcomes.	
	2-Class Activities (Reports, Discussions, -----) to assess The Intellectual Skills.	
<b>b- Schedule:</b>	Assessment 1	7 <sup>th</sup> Week Written Exam
	Assessment 2	12 <sup>th</sup> Week Written Exam
	Assessment 3	Continuous
	Assessment 4	16 <sup>th</sup> Week Final Written Exam
<b>c- Weighing of Assessment</b>	7 <sup>th</sup> Week Examination	30 %
	12 <sup>th</sup> Week Examination	20 %
	Final-term Examination	40 %
	Oral Examination	00 %
	Practical Examination	00 %
	Semester Work	10 %
	Total	100%

**8- List of References:**

<b>a- Course Notes</b>	
<b>b- Required Books</b> (Textbooks)	<ul style="list-style-type: none"><li>• Deitel &amp; Associates, Harvey M. Deitel, Paul J. Deitel, P. J. Deitel, Visual C# 2005 How To Program, Prentice Hall</li></ul>
<b>c- Recommended Books</b>	<ul style="list-style-type: none"><li>• Doug Bell, Mike Parr, C# for Students, Addison Wesley,</li><li>• Herbert Schildt, C# 2.0: The Complete Reference, Osborne/McGraw-Hill.</li></ul>
<b>d- Periodicals, Web Sites, etc.</b>	

**Course Instructor:**  
**Dr. Ihab Abdalla**

**Program Manager:**  
**Prof. Dr. Mohamad AbouEI-Nasr**

**Dean of College of Engineering and Technology of AASTMT**  
**Name: Prof. Moustafa Hussein Aly**

**Executive Manager of Quality Assurance Center of AASTMT**  
**Name: Prof. Aziz Ezzat**

Signature:

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