

University / Academy: Menoufia University

College / Institute: Faculty of Electronic Engineering

Department: Computer Science and Engineering

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## Course Specification

1- Course basic information :		
Course Code: CSE 161	Course Title: Computers Operations	Academic year: 2011/2012 Level (1) – Semester : 1
University requirement	Teaching hours: Lecture <input type="text" value="2"/> Tutorial <input type="text" value="1"/> Lab <input type="text" value="2"/>	

2- Aim of the course	<ul style="list-style-type: none"><li>• Know the fundamentals of data structures and algorithms</li><li>• Understand how to design algorithms.</li><li>• Have ability to write different algorithms for sorting, search tree,...</li><li>• Understand how to analysis algorithms.</li></ul>
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### 3- Intended Learning Outcomes:

A- Knowledge and Understanding:	a2. Basics of information and communication technology (ICT). a5. Methodologies of solving engineering problems, data collection and interpretation. a8. Current engineering technologies as related to computer science and engineering. a13. Engineering principles in the fields of programming languages. a15. Principles of Analyzing and design of electronic circuits and components
B- Intellectual Skills	b2. Select appropriate solutions for engineering problems based on analytical thinking. b3. Think in a creative and innovative way in problem solving and design.

	b8. Select and appraise appropriate ICT tools to a variety of engineering problems.
<b>C- Professional Skills</b>	c1. Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems. c15. Write computer programs on professional levels achieving acceptable quality measures in software development.
<b>D- General Skills</b>	d1. Collaborate effectively within multidisciplinary team. d4. Demonstrate efficient IT capabilities. d9. Refer to relevant literatures.
<b>4- Course Contents</b>	Basic Data Structures - Abstract Data Structures - Recursive Algorithms - Complexity Analysis - Sorting Algorithms - Searching Algorithms – Introduction to versions and characteristics of Windows - Other tools of Visual Programming. Using Microsoft Developer Studio - Graphical User Interface (GUI) - Introduction to object-oriented programming in C++ Principles of OOP - Structures and classes Motivation for classes – Scope resolution operator - Memory management - Modular design and encapsulation - Windows Programming versus C++ WP as a kind of OOP. Introduction to Visual C++ and Microsoft Foundation Classes (MFC).
<b>5- Teaching and Learning Methods</b>	<ul style="list-style-type: none"> <li>- Lectures</li> <li>- Tutorials</li> <li>- Labs and/or case studies</li> <li>- Research assignments</li> </ul>
<b>6- Teaching and Learning Methods for disable students</b>	<ul style="list-style-type: none"> <li>- NA</li> </ul>
<b>7- Student Assessment</b>	
<b>a- Assessment Methods</b>	<ul style="list-style-type: none"> <li>- Weekly sheet exercises at class room</li> <li>- Quizzes</li> <li>- Labs and/or case study for more demonstration.</li> <li>- Mid term, and final exams</li> </ul>

<b>b- Assessment Schedule</b>	- Exercise sheet/ Lab assignment : - Quiz-1: - Mid-Term exam: - Quiz-2: - Lab exam: - Final – term examination:	Weekly Week no 3 Week no 8 Week no 11 Week no 15 Week no 16
<b>c- Weighting of Assessment</b>	- Class tutorial and quizzes: - Mid-term examination:  - Case study and/or practical exam: - Final – term examination: - Other types of assessment:	4 % 11 %  24 % 60 % ..... % <u>          </u> Total 100 %

### 8- List of text books and references:

<b>a- Course notes</b>	Lectures notes prepared in the form of a book authorized by the department
<b>b- Text books</b>	Adam Drozdek, “Data Structures and Algorithms in C++”, Second Edition, Brooks/Cole, A Division of Thomson Learning, 2001
<b>c- Recommended books</b>	None
<b>d- Periodicals, Web sites .....etc</b>	IEEE transactions on computers and software.

### Course contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Basic Data Structures - Abstract Data Structures -	1	a2	--	--	d4
Recursive Algorithms - Complexity Analysis - Sorting Algorithms - Searching Algorithms –	2-3	a2, a5	b2	c1	d1, d4
Introduction to versions and characteristics of	4-6	a5, a13	b2, b3	c15	d1, d4

Windows - Other tools of Visual Programming. Using Microsoft Developer Studio -					
Graphical User Interface (GUI) -	7	a8, a13	b2, b8	c15	d1, d4
Introduction to object-oriented programming in C++ Principles of OOP	9	a5, a8	b3, b8	c15	d4, d9
- Structures and classes Motivation for classes –	10-11	a2, a8	b2, b3	c15	d1, d9
Scope resolution operator - Memory management -	12	a2, a13	b3, b8	c1, c15	d4, d9
Modular design and encapsulation - Windows Programming versus C++ WP as a kind of OOP.	13	a5, a13	b2, b8	c15	d1, d4
Introduction to Visual C++ and Microsoft Foundation Classes (MFC).	14	a15	b8	c1	d9

**Course coordinator:**

**Dr. Gamal M. Attiya**

**Head of Department:**

**Prof. Dr. Nawal El-Feshawy**

**Date: / /**