



Course Specifications

Program(s) on which this course is given:	Electronics & Electrical Communications Engineering
Major or Minor element of programs:	Major
Department offering the program:	Electronics and Electrical Communications
Department offering the course:	Electronics and Electrical Communications
Academic year / Level:	Third year
Date of original/modified specification approval:	2003/
Semester of course offering:	Second term

A- Basic Information

1.a. Title:	Computer (3)			1.b. Code:	ELC 303B			
2. Units/Credit hours per week:	2.a. Lectures	3	2.b. Tutorial	1	2.c. Practical	--	2.d. Total	4

B- Professional Information

1. Overall Aims of the Course:	Understanding notions of abstract data types Understanding C++ classes Understanding basics of algorithm analysis Understanding dynamic structures and their utility Designing efficient computer programs Enhancing coding styles and program readability
2. Intended Learning Outcomes of Course (ILOs):	a) Knowledge and Understanding
	1. Recognize a range of programming languages and environments (1.6).
	b) Intellectual Skills
	1. Initiate creative thinking for resolving and developing innovative solutions for the practical industrial problems. (3.2) 2. Map requirements to program design and coding (3.7).
	c) Professional and Practical Skills
	1. Employ computational methods and develop algorithms to design experiments and collect, analyze and interpret results (2.2). 2. Design, build and test a system or a project (2.4). 3. Use appropriate tools to measure system performances (2.6).
	d) General and Transferable Skills
	1. Demonstrate efficient IT capabilities (4.2). 2. Fulfill requirements of potential employers (4.9).

3. Contents

Topic	Total hours	Lectures	Tutorial/ Practical
Data Structures and Abstract Data Types	10	8	2
Sorting and Searching	8	6	2
The List ADT	16	12	4
Stacks and Queues	8	6	2
Tables and Hashing	8	6	2
Binary Trees	6	4	2

4. Teaching and Learning Methods	Lectures (Y)	Practical Training/ Laboratory (N)	Seminar/Workshop (N)
	Class Activity (Y)	Case Study (N)	Projects (Y)
	E-learning (N)	Assignments /Homework (Y)	Other:
5. Student Assessment Methods			
5.a. Method		To assess (with reference to the ILOs)	
- Assignments		a1, b1, b2, c1, c2, c3	
- Midterm Exam		a1, b1, b2, c1, c2, c3	
- Mini-projects		b1, b2, d1, d2.	
- Final Exam		a1, b1, b2, c1, c2, c3	
5.b. Assessment Schedule		Week	
- Assignments		2, 5, 8, 11	
- Midterm Test		9	
- Mini-Project		14	
-Final Exam		15	
5.c. Weighting of Assessments			
-Mid-Term Examination		15%	
-Final-term Examination		70 %	
-Project or second Mid-Term		15 %	
-Total		100 %	
6. List of References			
6.a. Course Notes			
6.b. Essential Books (Text Books)			
• Data Structures via C++, A. Michael Berman, Oxford University Press, 1997.			
6.c.Recommended Books.			
N/A			
6.d. Periodicals, Web Sites, ... etc			
7. Facilities Required for Teaching and Learning			
Blackboard/Whiteboard – Computers equipped with C++ Compiler – Internet Access - Library			
Course Coordinator:	Prof. Dr. Khaled M. Fouad Elsayed		
Head of Department:	Dr. Mahmoud El Hadidi		
Date:	June 5, 2011		