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 & Electrical Communications Engineering
Department offering the course:	Electronics & Electrical Communications Engineering
Academic year / Level:	1st year
Date of original/modified specification approval:	2003/
Semester of course offering:	1st Semester

A- Basic Information

1.a. Title:	Computers-1A			**1.b. Code:**	ELC 103A			
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:	Introduce department freshmen to the basic concepts and ideas of binary logic design and designing digital systems, which are essential part of computer, digital control and communication systems.
2. Intended Learning Outcomes of Course (ILOs):	**a) Knowledge and Understanding**
	1. Describe functions of the basic building blocks of a digital system (1.1, 1.7). 2. Identify various architectures (1.2). 3. Explain the design concepts for analyzing computer systems (1.7). 4. Explain the basic operations of cache and main memory, I/O operations, bus, interrupt and peripheral devices as well as analyzing the performance of different designs (1.7).
	b) Intellectual Skills
	1. Use Karnaugh map for simplification (3.1). 2. Develop simple programs/sub-functions using CISC assembly language such as MC68000 (3.1).
	c) Professional and Practical Skills
	1. Design simple sequential & combination circuits using logic gates and flip-flops (2.4).

3. Contents

Topic	Total hours	Lectures	Tutorial/ Practical
Digital Computers and Information	5	4	1
Boolean Algebra, Logic Gates and logic functions	7	5	2
Simplification of logic functions	6	5	1
Combinational Logic Circuits design	6	4	2
Adders, Subtractors, Multipliers, Code Converters, Binary Magnitude Comparator,	12	10	2
Decoders & Encoders, Multiplexers & De-multiplexers, Read-Only Memory (ROM)	10	8	2
Sequential Logic	10	6	4

4. Teaching and Learning Methods	Lectures (Y)	Practical Training/ Laboratory (N)	Seminar/Workshop (N)
	Class Activity (Y)	Case Study (N)	Projects (N)
	E-learning (N)	Assignments /Homework (Y)	Other:

5. Student Assessment Methods	
5.a. Method	**To assess (with reference to the ILOs)**
- Class test	a1, a2, a3, a4, b1, b2
- Mid-term exam	a1, a4, a5, b1, b2,c1
- Final Exam	a1, a2, a3, a4, b1, b2, c1
5.b. Assessment Schedule	**Week**
- Assessment 1; Class test	4
- Assessment 2; Mid-term exam	8
- Assessment 3; Final exam	15
5.c. Weighting of Assessments	
- Mid-Term Examination	20 %
- Final-term Examination	70 %
- Semester Work (class test)	10 %
-Total	100 %
6. List of References	
6.a. Course Notes	
6.b. Essential Books (Text Books)	
• Logic and computer design fundamentals " M. Morris Mano".	
6.c. Recommended Books.	
• N/A	
6.d. Periodicals, Web Sites, … etc: N/A	
7. Facilities Required for Teaching and Learning	
PCs for LABs and Digital Training Kits	
Course Coordinator:	**Prof. Dr. Nemat Abdel Kader**
Head of Department:	**Prof. Dr. Mahmoud El-Hadidi**
Date:	**18.6.2011**