Electronic Ciruits Design Using Computer

Dr. Fatma Hanafy ElFouly

Electronic Circuits Design using Computer

Title	**: Electronic Circuits Design using Computer**
Code	**:ECE 312**
Professor	**: Fatma Hanafy ElFouly**
Room Number	**: 107 ج**

Basic information		
Teaching Hours:	Lectures: 0	**Tutorial: 0**
	Practical: 6	**Total: 6**

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Grading system					
Teacher Opinion	Reports / sheets / Activities	30%	30	-	-
	Attendance			-	-
	Quiz 1 / Quiz 2			40%	12
	Mid-term exam			60%	18
Practical / Oral	Practical Attendance	30%	30	10%	3
	Lab. Reports			10%	3
	Lab. Activities / Projects			-	-
	Final oral / practical exam			80%	24
Final Exam		40%	40		
Total		100%	100		

Practical Topics

Week No.	Topic	Lecture hours	Tutorial hours	Practical hours
1	▪ Introduction ▪ FPGA structure ▪ Introduction to CAD tools	-	-	6
2	▪ Fundamental VHDL units ▪ Data Types ▪ Operators ▪ Assignment Statements	-	-	6
3	▪ Multiplexers	-	-	6
4	▪ Decoders ▪ Encoders	-	-	6
5	▪ Latches ▪ Flip Flop ▪ Parallel register ▪ Shift register	-	-	6
6	▪ Counters	-	-	6
7	▪ Half Adder, Full Adder, Parallel Adder ▪ Half, Full, Parallel subtractor using Parallel Adders	-	-	6
8	▪ Introduction to Finite State Machines	-	-	6
9	▪ Mid Term			1
10	▪ Traffic Light Controller example	-	-	6
11	▪ FSM as Sequence Detectors	-	-	6
12	▪ Timing Simulation, Synthesis, Place and Route	-	-	6
13	▪ Pin Assignments, FPGA configuration	-	-	6
14	▪ Oral/Practical	-	-	
15	▪ Final Exam	-	-	2