FUTURE UNIVERSITY IN EGYPT جامعة المستقبل

Faculty of Engineering & Technology

Special Topics in Electronics and Communication Engineering

Information :

Course Code :	COM 581	**Level :**	Undergraduate	**Course Hours :**	3.00- Hours

Department : Specialization of Electronics & Communication

Instructor Information :

Title	Name	Office hours
Lecturer	AHMED SAEED ABDELSAMEA SAYED	9
Assistant Lecturer	Marwa Mohamed Zaki Mohamed Shaheen	

Area Of Study :

- Develop studentsôskills in software tools (MATLAB, Simulink, Multisim and LabVIEW) for problem solving and modeling of various electronic circuits.
- Train studentsôin a programming environment through data acquisition for performing real-time measurements.

Course outcomes :

a.Knowledge and Understanding: :	
1 -	a1. List theories, techniques and analysis of analogue and digital electronics, communication and signal processing systems.
2 -	a2. Recognize the instruction set and program structure of MATLAB and Simulink for problem solving
3 -	a3. Recognize of the instruction set and program structure of LabVIEW and Multisim as an electronic simulation tool
b.Intellectual Skills: :	
1 -	b1. Apply appropriate mathematical and physics knowledge for modelling and analysing electronic and communication systems problems
2 -	b2. Use software tools to develop computer programs for engineering applications and simulation.
3 -	b3. Design communication systems to solve communication systems problems such as communication links and channels.
c.Professional and Practical Skills: :	
1 -	c1. Build a software code to solve electronic and communication problems using theories and techniques of mathematics, basic sciences.
2 -	c2. Design a real model for data acquisition, and give simulation, some practical implementing.
3 -	c3. Read thoroughly datasheets and identify appropriate specifications for required system or component.
d.General and Transferable Skills: :	
1 -	d1. Demonstrate efficient IT capabilities.
2 -	d2. Effectively Manage tasks, time, and resources

3 -	d3. Search for information and engage in life-long self-learning discipline.
4 -	d4. Relate to relevant literatures

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
LabVIEW fundamentals	10	6	4
Random Signal and noise generation	10	6	4
Analog Communication Modulation techniques AM, FM, PM, PAM, PPM, and PWM applications	10	6	4
MATLAB and Simulink Basics. AM, FM, PM, PAM, PPM, and PWM applications	10	6	4
Digital Communication Modulation techniques ASK, FSK, PSK and BER measurements + Mid Term 1	10	6	4
Analog Filters design	10	6	4
Analog and Digital Oscillators	10	6	4
Logic Circuit design and simulation + Mid Term 2	5	3	2

Teaching And Learning Methodologies :

Interactive Lecturing
Discussion
Software tools

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
ÅFinal exam	40.00		
o Assignments/Midterm exams	40.00		
o In Class Quizzes	10.00		
o Participation	10.00		

Course Notes :

1. MATLAB, Simulink, Lab VIEW, and Multisim user guides and manuals
2. Students Lecture Notes and PPTôs.
3. Handouts.
4. Internet resources and sites.