

University : Menoufiya University

College : Faculty of Electronic Engineering

Department : Electronics and electrical communication engineering

Course Specification

1- Course basic information :		
Course Code: EC 429	Course Title: Microwave Electronics	Academic year: 2012/2013 Level (ة) – Semester : 2
Department requirement	Teaching hours: Lecture <input type="text" value="3"/> Tutorial <input type="text" value="2"/> Lab <input type="text" value="."/>	

2- Aim of the course	<ul style="list-style-type: none">• Learn the basic concept of Microwave Tubes.• Understand the Solid State Amplifiers and learn how to design a microwave transmission amplifier• Understand the fundamental operations of Parametric Amplifiers- RF Oscillators– Microwave oscillators and mixers
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3- Intended Learning Outcomes:	
A- Knowledge and Understanding:	a1) Concepts and theories of mathematics and sciences, appropriate to the Microwave Electronics. a4) Principles of design including elements design, process and/or a system related to specific Microwave Electronics. a5) Methodologies of solving engineering problems, data collection and interpretation a8) Current engineering technologies as related to Microwave Electronics a23) Microwave applications
B- Intellectual Skills	b1) Select appropriate mathematical and computer-based methods for modeling and analyzing problems. b3) Think in a creative and innovative way in problem solving and design. b5) Assess and evaluate the characteristics and performance of components, systems and processes. b12) Create systematic and methodic approaches when dealing with

	new and advancing technology.
C- Professional Skills	c1) Apply knowledge of mathematics, science, design, integrally to solve engineering problems. c2) Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services. c4) Practice the neatness and aesthetics in design and approach. c7) Apply numerical modeling methods to engineering problems. c16) Identify appropriate specifications for required devices.
D- General Skills	d3) Communicate effectively. d6) Effectively manage tasks, time, and resources. d9) Refer to relevant literatures.
4- Course Contents	Microwave Tubes- Solid State Amplifiers-Parametric Amplifiers - Oscillators and Mixers
5- Teaching and Learning Methods	<ul style="list-style-type: none"> - Lectures - Tutorials - case studies - Research assignments
6- Teaching and Learning Methods for disable students	NA
7- Student Assessment	
a- Assessment Methods	<ul style="list-style-type: none"> - Weekly sheet exercises at class room - Quizzes - Labs and/or case study for more demonstration. - Mid term, and final exams
b- Assessment Schedule	<ul style="list-style-type: none"> - Exercise sheet/ Lab assignment : Weekly - Quizz-1: Week <u>no</u> 4 - Mid-Term exam: Week <u>no</u> 8 - Quizz-2: Week <u>no</u> 12 - Lab exam: Week <u>no</u> 15 - Final – term examination: Week <u>no</u> 16
c- Weighting of Assessment	<ul style="list-style-type: none"> - Class tutorial and quizzes : 5 % - Mid-term examination: 15 % - Case study: 5 % - Final – term examination: 70 % - Other types of assessment: 5 % <p style="text-align: right;">Total <u>100 %</u></p>

8- List of text books and references:	
a- Course notes	There are lectures notes prepared in the form of a book authorized by the department
b- Text books	[1] R. E. Collin:" Foundations for Microwave Engineering," 2 nd edition, McGraw-Hill International Editions, 1992
c- Recommended books	[1]Foundations for microstrip circuit design, by: T.C.Edwards. [2]Microwave Engineering, by: D.Pozar
d- Periodicals, Web sitesetc	IEEE Transactions on Microwave Theory and Techniques. IEEE Microwave Magazine

Course contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Microwave Tubes	1-4	A1,a5	B1,b5	C1,c2	D6
Solid State Amplifiers	5-6	A4,a5	B3,b5	C4,c7	D3,d6
Parametric Amplifiers	9-11	A8,a23	B12	C7,c16	d3
Oscillators and Mixers	12-14	A1,a4	B3	C16	D6,d9

Course coordinator:

Head of Department:

Date: / /