University : Menoufiya University

College : Faculty of Electronic Engineering

Department : Electronics and electrical communication engineering

Course Specification

1- Course basic information :		
Course Code: EC 321	**Course Title:** Network Theory	**Academic year:** **Level (3) – Semester : 1**
Department requirement	**Teaching hours: Lecture** ٣ **Tutorial** ٢ **Lab** ٠	

2- Aim of the course	• Knowing the concept of network theory. • Allowing the students to synthesize the one port and two port network. • Allowing the students to synthesize the prototype filters, modern filters, and active filters.
3- Intended Learning Outcomes:	
A- Knowledge and Understanding:	a1) Concepts and theories of mathematics and sciences, appropriate to the Network Theory. a3) Characteristics of engineering materials related to the Network Theory. a4) Principles of design including elements design, process and/or a system related to specific Network Theorys. a14) Basics of design and analyzing electronic engineering systems, while considering the constraints of applying inappropriate technology and the needs of commercial risk evaluation; a15) Principles of Analyzing and design of electronic circuits and components;
B- Intellectual Skills	b5) Assess and evaluate the characteristics and performance of components, systems and processes. b6) Investigate the failure of components, systems, and processes. b16) Synthesis and integrate electronic systems for certain specific function using the right equipment.
C- Professional Skills	c2) Professionally merge the engineering knowledge, understanding, and feedback to improve design, products and/or services. c3) Create and/or re-design a process, component or system, and carry

	out specialized engineering designs. c4) Practice the neatness and aesthetics in design and approach.
D- General Skills	d1) Collaborate effectively within multidisciplinary team. d7) Search for information and engage in life-long self learning Network Theory. d9) Refer to relevant literatures.
4- Course Contents	**Network Functions -Approximation all Pole filters-Passive Synthesis-Elements of Active Synthesis-Sensitivity.**
5- Teaching and Learning Methods	- **Lectures** - **Tutorials** - **Labs and/or case studies** - **Research assignments**
6- Teaching and Learning Methods for disable students	**NA**
7- Student Assessment	
a- Assessment Methods	**- Weekly sheet exercises at class room** **- Quizzes** **- Labs and/or case study for more demonstration.** **- Mid term, and final exams**
b- Assessment Schedule	**- Exercise sheet/ Lab assignment : Weekly** **- Quizz-1: Week no 4** **- Mid-Term exam: Week no 8** **- Quizz-2: Week no12** **- Final – term examination: Week no 16**
c- Weighting of Assessment	**- Class tutorial and quizzes : 15 %** **- Mid-term examination: 15 %** **- Final – term examination: 70 %** **Total 100 %**
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	Norman Balabanian,"Networks Systems ", Printce Hall, New Gersy, 1985.
c- Recommended books	[1] Dov. Hazony, "Elements of Networks Synthesis", Rinhold Pub. corporation, 1962 [2] F. R. Conner,"Networks", Edward Arnold Publishing Ltd, 1979 [3] Andreas Antoniou, "Digital filters", Tata McGraw Hill, Inc., 1979.
d- Periodicals, Web sites ……etc	1- IEEE Transaction on Networks **2-** IEEE Transaction on Communications **3-** Website of Networks and Filter

Course contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Network Functions	1-3	a1,a4	b5,b6	c2,c3	d1,d7
Approximation all Pole filters	4-7	a3,a14	b6,b16	c3	d9
Passive Synthesis	9-11	a3,a15	b5,b6	c2	d1,d9
Elements of Active Synthesis	12	a1,a14	b5	c3	d7
Sensitivity .	13-14	a3,a4	b16	c3,c4	d1,d9

Course coordinator: **Head of Department:**

Date: / /