University / Academy : Menoufiya University

College / Institute : Faculty of Electronic Engineering

Department : Electronics and ELECTRICAL Communications engineering

Course Specification

1- Course basic information :		
Course Code: EC 221	**Course Title:** Communications Engineering	**Academic year:** **Level (2) – Semester : 1**
Faculty requirement	**Teaching hours: Lecture** 3 **Tutorial** 2 **Lab**	

2- Aim of the course	• Know the basic elements of any communications system and the necessity for modulation in a radio communications system. • Recognize the major types of modulations used in broadcasting communications systems. • Describe the propagation of radio waves in free space and over land. • Understand the basic configuration of terrestrial microwave communications systems. • Know and understand the basic principles of radar systems. • Learn the basics of satellite communications systems. • Know and understand the function of the basic elements of digital communications systems. • Be familiar with different transmission media. • Get the principles of analog to digital conversion. • Be familiar with the fundamentals of data communications. • Understand fundamental concepts of cellular systems.
3- Intended Learning Outcomes:	
A- Knowledge and Understanding:	a1) Concepts and theories of mathematics and sciences, appropriate to the COMMUNICATION ENGINEERING. a2) Basics of information and communication technology (ICT) a3) Characteristics of engineering materials related to the Communication engineering. a4) Principles of design including elements design, process and/or a system related to specific communication engineering. a5) Methodologies of solving engineering problems, data collection and

	interpretation.
B- Intellectual Skills	b1) Select appropriate mathematical and computer-based methods for modeling and analyzing problems. b2) Select appropriate solutions for engineering problems based on analytical thinking. b3) Think in a creative and innovative way in problem solving and design. b4) Combine, exchange, and assess different ideas, views, and knowledge from a range of sources.
C- Professional Skills	c1) Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems. 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. c5) Use computational facilities and techniques, measuring instruments
D- General Skills	d1) Collaborate effectively within multidisciplinary team. d3) Communicate effectively. d4) Demonstrate efficient IT capabilities. d9) Refer to relevant literatures.
4- Course Contents	Introduction-Communication Systems and Transmission Media-Broadcasting Communication Systems-Basic Telephony Systems-Computer Communication Systems-Optical Communication Systems-Modern Communication Systems-Pulse Modulation Systems-Radar Systems-Modern Communication systems.
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**

	- Mid-Term exam: **Week no 8** **- Quizz-2:** **Week no** **- Lab exam:** **Week no** **- Final – term examination:** **Week no**
c- Weighting of Assessment	**- Class tutorial and quizzes :** **10 %** **- Mid-term examination:** **15 %** **- Case study and/or practical exam:** **0 %** **- Final – term examination:** **70 %** **- Other types of assessment:** **5 %** **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	Lectures notes prepared in the form of a book authorized by **Dr. Abdel Azez Taha Shalaby** and **Dr. Abdel Mageed Sharshar**
c- Recommended books	[1] Michael Duck, Peter Bishop, and Richard Read Data, Communications for Engineering, Addison-Wesley Publishing Company, 1996. [2] w. stallings, data and computer communications, Macmillan publishing company ,NewYork,1985. [3] D.W. Davis, and D.L.A. Barber, Communication Networks for computers .John Wiley & sons, NewYork, 1973. [4] A.B. Carlson, Communication systems, 3rd ed., MCGRAW – Hill book company, NEWYORK, 1986.
d- Periodicals, Web sites ……etc	www.tkne.net/vb/f49 www.cedmagazine.com/ www.commeng.com/ www.ecdept.iitkgp.ernet.in/ www.xerox.com/.../TL_whitepaper_customer_**communications**_Paul_Lundy.pdf www.iitd.ac.in/pg/pdf/deptt/ee/ce.pdf www.nitt.edu/academics/departments/ece/ www.iiu.edu.my/iccce/10 www.soe.cusat.ac.in/placement/syllabus/ec.pdf www.ieeerit.in/files/BTech-ECE-Syllabus-MGU-BTech.pdf www.fh-kaernten.at/cms_eng/ceit.htm

Course contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Introduction-Communication Systems and Transmission Media	1-2	A1, A3, A5	B1, B2, B4	C1, C2, C3	D1, D3, D9
Broadcasting Communication Systems-Basic Telephony Systems	3-4	A1, A2, A5	B1, B3	C4, C5	D1, D4
Computer Communication Systems-Optical Communication Systems	5-7	A1, A3, A4	B1, B2	C1, C3, C5	D3, D4
Modern Communication Systems-Pulse Modulation Systems	9-11	A1, A2, A5	B1, B2, B3	C1, C4. C5	D1, D3, D9
Radar Systems-Modern Communication systems.	13-14	A1, A4, A5	B1, B4	C4, C5	D4, D9

Course coordinator: **Head of Department:**

Date: / /