University: Menoufiya University

College: Faculty of Electronic Engineering

Department: Electronics and electrical communication engineering

Course Specification

1- Course basic information :				
Course Code: EC 327	Course Title: Optical Communications	Academic year:2012/2013 Level (") – Semester : ۲		
Department requirement	Teaching hours: Lecture Tutorial Lab			

2- Aim of the course	- Understand the structure of optical fiber waveguides						
	- know the transmission characteristic of optical fiber waveguide.						
	- Understand the structure of optical sources						
	- know the fabrication steps of optical fibers						
	- Understand the structure of connectors, splices and coupler						
3- Intended Learning Outcomes:							
A- Knowledge and Understanding:	a1) Concepts and theories of mathematics and sciences, appropriate to the Optical Communications						
	a3) Characteristics of engineering materials related to the Optical Communications						
	a4) Principles of design including elements design, process and/or system related to Optical Communications						
	a8) Current engineering technologies as related to Optical Communications						
	a25) Optical communication systems						
B- Intellectual Skills	b2) Select appropriate solutions for engineering problems based on analytical thinking.						
	b7) Solve engineering problems, often on the basis of limited and possibly contradicting information.						

	h15) Analyze the performance of ontic	al wayequides			
C- Professional Skills	b15) Analyze the performance of optical waveguides. c1) Apply knowledge of mathematics, science, information technolog design, business context and engineering practice integrally to solvengineering problems.				
	c4) Practice the neatness and aesthetics in design and approach.				
	c7) Apply numerical modeling methods to engineering problems.				
	c16) Identify appropriate specifications	c16) Identify appropriate specifications for required devices.			
D- General Skills	d1) Collaborate effectively within multidisciplinary team. d3) Communicate effectively.				
	d9) Refer to relevant literatures.				
4- Course Contents	 Introduction . Optical Fiber wave guide. Transmission characteristics of optical fiber wave guides. Optical sources. Fabrication of optical fiber. Connector, splices and coupler. Concepts of optical detectors. Basic Multiplexing and Transmission Technique. Basic ports and transceiver circuits. 				
5- Teaching and	Lectures				
Learning Methods	Tutorials				
	Labs and/or case studies				
	Research assignments				
6- Teaching and Learning Methods for disable students	NA NA				
7- Student Assessment					
a- Assessment	- Weekly sheet exercises at class room				
Methods	- Quizzes				
	- Labs and/or case study for more demonstration.				
	- Mid term, and final exams				
b- Assessment	- Exercise sheet/ Lab assignment :	Weekly			
Schedule	- Quizz-1:	Week no 4			
	- Mid-Term exam:	Week no 8			
	- Quizz-2:	Week no 12			
	- Lab exam:	Week no 15			

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	- Optical Communication Sytems by John Gowar Introduction to Fiber Optics by Ghatak and Thyagrajan - Fiber Optic Communication Technology by Djafer K Mynbaev and Lowell L Scheiner			
c- Recommended books	- Optical Fiber Communications by Selvarajan and Kar - Optoelectronics by Wilson and Hawkes - Introduction to Optical Electronics by Keneth E Jones			
d- Periodicals, Web sitesetc	IEEE periodicals			

- Final – term examination:

Week no 16

Course contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understan ding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
Introduction	1	a1, a3	b2	c1	d1
optical fiber waveguides	2-3	a3, a4	b7	c4	d1, d3
Transmission characteristic of optical fiber waveguide	4-7	a4, a8	b7, b15	c1, c4	d3, d9
optical sources	8-10	a3, a8	b15	c7, c16	d1, d9
fabrication of optical fiber	11-12	a1, a9, a25	b7	c4, c16	d9
connector, splices and	13-14	a4, a8	b15	c7, c16	d1, d9

coupler			
coupler.			

Course coordinator:

Head of Department:

Date: / /