

University : Menoufiya University

College : Faculty of Electronic Engineering

Department : Electronics and electrical communication engineering

## Course Specification

1- Course basic information :		
<b>Course Code:</b> EC 327	<b>Course Title:</b> Optical Communications	<b>Academic year:</b> <b>Level ( ٣ ) – Semester : ٢</b>
<b>Department requirement</b>	<b>Teaching hours:</b> Lecture <input type="text" value="٣"/> Tutorial <input type="text" value="٢"/> Lab <input type="text" value="٠"/>	

<b>2- Aim of the course</b>	<ul style="list-style-type: none"><li>- Understand the structure of optical fiber waveguides</li><li>- know the transmission characteristic of optical fiber waveguide.</li><li>- Understand the structure of optical sources</li><li>- know the fabrication steps of optical fibers</li><li>- Understand the structure of connectors, splices and coupler</li></ul>
3- Intended Learning Outcomes:	
<b>A- Knowledge and Understanding:</b>	<ul style="list-style-type: none"><li>a1) Concepts and theories of mathematics and sciences, appropriate to the Optical Communications</li><li>a3) Characteristics of engineering materials related to the Optical Communications</li><li>a4) Principles of design including elements design, process and/or a system related to Optical Communications</li><li>a8) Current engineering technologies as related to Optical Communications</li><li>a25) Optical communication systems</li></ul>
<b>B- Intellectual Skills</b>	<ul style="list-style-type: none"><li>b2) Select appropriate solutions for engineering problems based on analytical thinking.</li><li>b7) Solve engineering problems, often on the basis of limited and possibly contradicting information.</li></ul>

	b15) Analyze the performance of optical waveguides.
<b>C- Professional Skills</b>	c1) Apply knowledge of mathematics, science, information technology, design, business context and engineering practice integrally to solve engineering problems. 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.
<b>D- General Skills</b>	d1) Collaborate effectively within multidisciplinary team. d3) Communicate effectively. d9) Refer to relevant literatures.
<b>4- Course Contents</b>	Introduction – optical fiber waveguides – Transmission characteristic of optical fiber waveguide - optical sources – fabrication of optical fiber – connector , splices and coupler .
<b>5- Teaching and Learning Methods</b>	Lectures Tutorials Labs and/or case studies Research assignments
<b>6- Teaching and Learning Methods for disable students</b>	NA
<b>7- Student Assessment</b>	
<b>a- Assessment Methods</b>	- Weekly sheet exercises at class room - Quizzes - Labs and/or case study for more demonstration. - Mid term, and final exams
<b>b- Assessment Schedule</b>	- Exercise sheet/ Lab assignment :                      Weekly - Quizz-1:    Week no 4 - Mid-Term exam:    Week no 8 - Quizz-2:    Week no 12 - Lab exam:    Week no 15 - Final – term examination:                                      Week no 16
<b>c- Weighting of Assessment</b>	- Class tutorial and quizzes :                      15 % - Mid-term examination:                              15 % - Final – term examination:                              70 %

	Total 100 %
<b>8- List of text books and references:</b>	
<b>a- Course notes</b>	There are lectures notes prepared in the form of a book authorized by the department
<b>b- Text books</b>	<ul style="list-style-type: none"> <li>- Optical Communication Systems by John Goward.</li> <li>- Introduction to Fiber Optics by Ghatak and Thyagrajan</li> <li>- Fiber Optic Communication Technology by Djafer K Mynbaev and Lowell L Scheiner</li> </ul>
<b>c- Recommended books</b>	<ul style="list-style-type: none"> <li>- Optical Fiber Communications by Selvarajan and Kar</li> <li>- Optoelectronics by Wilson and Hawkes</li> <li>- Introduction to Optical Electronics by Kenneth E Jones</li> </ul>
<b>d- Periodicals, Web sites .....etc</b>	<b>IEEE periodicals</b>

### Course contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	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 coupler.	13-14	a4, a8	b15	c7, c16	d1, d9

**Course coordinator:**

**Head of Department:**

**Date:** / /