



# Philadelphia University

Faculty of Engineering - Department of Communications and  
Electronics Engineering

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## Course Information

- Title:** Optical Communications (0650445)
- Prerequisite:** Digital Communications (0650425)
- Credit Hours:** 3 credit hours (16 weeks per semester, approximately 44 contact hours)
- Textbook:** "Fiber Optical Communications", Joseph C. Palasis, Fifth Edition, 2005
- References:** "Optical Communication Systems", John Gowar, Prentice Hall, 2001
- Catalog Description:** The course is a requirement for Communication and Electronics engineering students. It introduces the characteristics of light, using optical fiber as wave guides, components for light sources and detectors, Optical system components and design, and WDM systems.

## Course Topics

Week	Topic
1	Course Introduction
2	Fiber Optic Communication Systems
3, 4	Optics Review and Light Wave Fundamental
5, 6	Optic Fiber Wave Guides
7, 8	Light Sources
9, 10	Light Detectors
11, 12	Optical Fiber System Components
13	Modulations and Applications
14, 15	WDM Systems
16	Review, and final exam

## Course Learning Outcomes and Relation to ABET Student Outcomes:

Upon successful completion of this course, a student should be able to:

1.	Understand fundamental and nature of light	[a]
2.	Apply the fundamentals to fiber channels as waveguides	[a, e]
3.	Understand the characteristics and components of optical systems	[e ,j]
4.	Design an optical communication system based on different requirements	[c, e]
5.	Gain knowledge of different wave division system techniques	[j]

### Assessment Instruments:

Evaluation of students' performance (final grade) will be based on the following categories:

**Exams:** Two written exams will be given. Each will cover about 3-weeks of lectures

**Quizzes:** 10-minute quizzes will be given to the students during the semester. These quizzes will cover material discussed during the previous lecture(s).

**Homework:** Problem sets will be given to students. Homework should be solved individually and submitted before the due date.

Copying homework is forbidden, any student caught copying the homework or any part of the homework will receive zero mark for that homework

**Participation:** Questions will be asked during lecture and the student is assessed based on his/her response

**Final Exam:** The final exam will cover all the class material.

### Grading policy:

First Exam	20%
Second Exam	20%
Homework	
Quizzes and participation	20%
Final Exam	40%
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Total:	100%

### Attendance policy:

Absence from classes and/or tutorials shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse, acceptable to and approved by the Dean of the relevant college/faculty, shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

February, 2017