Course	**EEOP 6310**
Course Title	**OPTICAL COMMUNICATION SYSTEMS**
Professor	Prof. Lakshman Tamil
Term	Fall 2016
Meetings	FRI 01:00PM – 03:45PM, ECSS 2.410

Professor's Contact Information

Office Phone	972.883.2197
Other Phone	972.883.6789
Office Location	ECSN 2.912
Email Address	laxman@utdallas.edu
Office Hours	Mon. & Wed. 10:00AM -11:00AM
Other Information	All course materials are posted in eLearning and students should submit all homework via eLearning

General Course Information

Pre-requisites, Co-requisites, & other restrictions

EE 3350 or Equivalent

Course Description

This is a graduate level course and it covers aspects of operating principles of fiber optical communication systems and technologies. Includes characteristics of optical fibers, laser diodes, optical amplifiers, dispersion compensators and photo detectors. Effect of loss, dispersion, nonlinearity and noise on signal transmission and methods of signal modulation, detection, and coding schemes used are also discussed. Design of transmitters, receivers and systems and application to all-optical networks are also covered.

Learning Outcomes

- Ability to understand the role of semiconductor lasers and photo detectors, optical amplifiers and dispersion compensators in a fiber communication system
- Ability to analyze the effect of loss, dispersion, nonlinearity and noise in an optical fiber communication system
- Ability to understand the use of advanced detection, modulation and coding schemes for fiber communication systems
- Ability to analyze as well as design optical transmitters, receivers and a complete fiber communication system

Required Texts & Materials

M. Cvijetic and I. B. Djordjevic, Advanced Optical Communication Systems and Networks, Artech Book House, Boston, MA, 2013.

Suggested Texts, Readings, & Materials

G. Agarwal, Fiber-Optic Communication Systems, Wiley Inter-Science, New York, NY, 2005.

Leonid G. Kazovsky, Sergio Benedetto, and Alan E. Willner, Optical Fiber Communication Systems, Artech House, Norwood, MA, 1996.

Assignments & Academic Calendar
[Topics, Reading Assignments, Due Dates, Exam Dates]

Aug. 26	Chapter 1	
Sept. 02	Chapter 1	
Sept. 09	Chapter 2	
Sept. 16	Chapter 2	
Sept. 23	Chapter 3	
Sept. 30	Chapter 3	**Project-I** Design of TX & RX due.
Oct. 07	Chapter 4	
Oct. 14	Chapter 4	**HW#1 Due** (Chapter 1 and 2)
Oct. 21	Chapter 4	
Oct. 28	**Exam I**	Chapter1, 2 & 3; open book and open notes; 2hours; no partial credit; at testing center; online testing via elearning but available only at testing center; at least half the problems will be similar to the homework problems. **HW#2 Due** (Chapter 3)
Nov. 04	Chapter 5	
Nov. 11	Chapter 5	**HW#3 Due** (Chapter 4)
Nov. 18	Chapter 5	
Nov. 25	Chapter 6	**HW#4 Due** (Chapter 5)
Dec. 02	Chapter 6	**Project-II**: Design of 40 wavelength x 10Gb/s per wavelength due
Dec. 09	**Exam-II**	Chapter 1 through 6; open book and open notes; 2:30 hours; no partial credit; at testing center; online testing vise learning but available only at testing center; at least half the problems will be similar to homework problems. **Time: 02:00-04:45 PM** **HW#5 Due (Chapter6)**

Course Policies

Grading (credit) Criteria	Exam I 25% Exam II 25% Project I 20% Project II 30%
Make-up Exams	Can be arranged under extenuating circumstances
Extra Credit	Submission of Home works is optional. If the home works are submitted before the day of the exam that covers these home works, then the student can get extra credit points not exceeding one-half of the corresponding total exam credits. For example if you submit HW#1, and HW#2 before Exam-I, you can get a maximum of 12.5 extra points. The extra points can be used to offset a failing grade or upgrade to the next better grade
Late Work	Will not be accepted unless approved in advance
Special Assignments	**None**
Class Attendance	**Mandatory**
Classroom Citizenship	**Strongly encouraged**

Comet Creed	*This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:* *"As a Comet, I pledge honesty, integrity, and service in all that I do."*
UT Dallas Syllabus Policies and Procedures	*The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.* *Please go to http://go.utdallas.edu/syllabus-policies for these policies.*

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.