

ELECTRICAL ENGINEERING DEPARTMENT
EE 420 Optical Fiber Communication
First Semester: 2010/2011

Instructor: Dr. H. A. Jamid

TENTATIVE COURSE OUTLINES:

- Introduction to optical communication.
- Advantages of optical fibers in communication.
- Optics review.
- Light wave fundamentals.
- Numerical aperture and acceptance angle.
- Planar optical waveguide.
- Optical fiber waveguide.
- Step-index and graded-index optical fibers.
- Single and multimode optical fibers.
- Bandwidth of optical fibers.
- Loss in optical fibers.
- Optical fiber cables and connections.
- Methods of manufacture of optical fibers.
- Optical sources: the light emitting diodes and laser diode.
- Optical detectors: p-n and p-i-n photodiodes.
- Optical fiber light amplifier.
- Introduction to integrated optics.

Textbook: Optical Fiber Communication by John Senior, 2nd edition.

Reference: Fiber Optics Communications by Joseph C. Palais.

Grading:

- Quizzes 12%
- Design Problem 3%
- Two major exams 30%
- Lab. 20%
- Final exam 35%

Major Exam Dates

- First major exam: Saturday: Nov. 6, 2010 (**during class time**).
- Second major exam: Wednesday: Dec. 22, 2010 (**during class time**).

Important:

- Homework problems will be assigned, but will not be collected.
- Homework assignment and answers will be posted on the course Web-CT.
- Quizzes based on the homework assignment will be held on Wednesdays.
- Many lectures are not covered in the textbook. For this reason, you need to take class notes on a regular basis.

Office Hours: 12:00-1:00 P.M. (SMW).