Florida Institute of Technology

ADDING A NEW COURSE TO THE CURRICULUM

This course is available for student registration only after the approval process has been completed.

Subject: ECE  
Course No: 4333  
Credit Hours: 3  
Term to be added to the file: 2004  
(e.g., Fall 2003)

Class Hours: 3  
Lecture Hours: 3  
Lab Hours: 3  
Contact Hours (CEU only):

Department: Electrical Engineering  
Schedule Type: Laboratory  
(e.g., lecture, lab or special project)

College/School:  
• College of Engineering-01
• College of Science and Liberal Arts (science)-20
• College of Science and Liberal Arts (liberal arts)-21

(Please check appropriate box)  
• School of Aeronautics-03  
• SEGS-90  
• School of Management-22  
• School of Psychology-05

Computer Title: Lightwave Laboratory

Catalog Title: Lightwave Laboratory

Catalog Description of Course: (limited to 350 characters, including spaces)

Experiments and projects in fiberoptics, including optoelectronic components and communication and sensor systems. Lectures will cover theory related to experiments.

In addition, you may attach a course syllabus and/or more detailed description.

Restrictions:  
• Prerequisite: (course number)  
• Corequisite: (course number)

Grades to be issued:  
• A, B, C, D, F  
• S, U  
• P, F  
• Other

Additional Restriction: Senior standing or ECE consent of instructor

(e.g., major, class level, department head approval)

If this course replaces a course currently offered in BANNER, please indicate old course information

Subject Alpha Prefix (e.g., CSE)  
Course No. (e.g., 1301)

APPROVALS

Upon completion of appropriate department approvals, submit form to Chair, Graduate Council, or Chair, Undergraduate Curriculum Committee for approval below and forward to Catalog Coordinator.

Barry Grossman  3/21/04  Date  
Chair, Graduate Council  Date

OR

Dean of Associate Dean  4/7/01  Date  
Chair, Undergraduate Curriculum Committee  Date

CATALOG COORDINATOR

SCACRSE  SCADETL  SCAPREQ  SCABASE
SCARRES  Operator Init  Date

Florida Institute of Technology  Office of the Registrar

150 West University Boulevard, Melbourne, FL 32901-6975  (321) 674-8136  Fax (321) 674-7827

RG-107-6031
MEMO

To: Undergraduate Curriculum Committee
From: Dr. Barry Grossman, Professor of Electrical Engineering
Subject: Adding a new course (elective) to the Electrical Engineering curriculum

Please approve this application to add a new course to the EE curriculum, ‘Lightwave Laboratory’. This course consists of lectures and introductory experiments in fiberoptics. Fiberoptic components are discussed and characterized, including: fiber, splices, LED’s and photodetectors. This is followed by experiments in designing and testing a fiberoptic data link and a sensor system. The students then design, build and demonstrate a simple system for communication or sensing. The course complements the required ECE 4332 Electrooptic Devices and Systems course which is primarily basic theory.

This course is needed to provide a hand’s-on elective for students interested in obtaining practical experience in fiberoptics, communication and sensing at the senior undergraduate level. It complements the required (EE) ECE 4332 Electrooptic Devices and Systems. The basic theory is covered in the lectures, thus it does not require that ECE 4332 be taken as a prerequisite.

Based on the positive response I have gotten from the students, I believe this course fills a need for additional electives requested by them as well as their desire to have more hands-on courses which will prepare them for their life after graduation.
Lightwave Laboratory ECE 4333

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Course Outline
Lectures on theory accompany every experiment

- Fiberoptic components for communication and sensing
  - Power loss measurement techniques and equipment
  - Fiber attenuation and acceptance angle measurement
  - Fiberoptic connector installation and performance measurement
- Fiberoptic splices- mechanical and fusion splices
  - Mechanical splices and procedure
  - Fusion splicing equipment operation
  - Measurement of splice loss
- Characterization of LED’s and photodetectors
- Simple fiberoptic data link system experiment
- pH intensity sensor system experiment
- Optical time domain reflectometry experiment
  - Principles and operation
- Design project

Grading

Experiments  60%
Project        20%
Final/Project  20%
               100%