

Course Syllabus

FIBER OPTICS IN TELECOMMUNICATIONS

Printed by: jfmoncay

Program: Telecommunications Engineering

1. Course number and name

TELG1018 - FIBER OPTICS IN TELECOMMUNICATIONS

2. Credits and contact hours

3 credits and 3 contact hours

3. Instructor's course or coordinator's name

GERMAN RICARDO VARGAS LOPEZ

4. Text book, title, author, and year

- Jeff Hecht. Understanding Fiber Optics (5th Ed.)

a. Other supplemental materials

- Shiva Kumar, M. Jamal Deen. Fiber Optic Communications: Fundamentals and Applications (1st Ed.)

5. Specific course information

- a. Brief description of the content of the course (catalog description)

This course studies optical fiber technology in communication systems, which allows the transmission of information at a distance with high capacity. The study of the propagation of light in mono-mode and multi-mode fibers is contemplated. In addition, the passive and active components of a fiber optic system are discussed, as well as technical specifications, standards and basic fiber measurement for the design of links. The course culminates with topics about submarine cables, optical multiplexing technology and optical networks.

- b. Prerequisites

COMMUNICATIONS SYSTEMS - TELG1003

SWITCHING NETWORKS DESIGN - TELG1013

- c. This course is: Required

6. Specific goals for the course

- a. Specific outcomes of instruction

1.- To understand the fundamental aspects of fiber optic systems by studying their basic components for the connectivity solutions.

2.- To test simulations or measurements of optical communication systems for the understanding of the functional principles of such systems.

3.- To specify optical communication technologies through the appropriate selection of optical components and systems for application in telecommunications networks.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

- An ability to function on multidisciplinary teams



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- An ability to identify, formulate and solve engineering problems
- An ability to communicate effectively in English

7. Brief list of topics to be covered

- 1.- Introduction and physical principles.
- 2.- The optical fiber.
- 3.- Components of an optical communication system.
- 4.- Standards and measurements in optical fibers.
- 5.- Optical communication systems.
- 6.- Optical networks.