# ETRO 166 : Introduction to Fiber Optics

**Credits:** 3
**Class Hours:** 3 lecture
**Prerequisites:** Qualified for ENG 100. Qualified for MATH 103.
**Description:** This course is an introduction to fiber optic communications, providing a basic background and featuring hands-on training for installation and maintenance. Emphasis will be on fiber optic data links for Local Area Network (LAN) applications. The basic background will cover the technology for fiber optic communications: fiber, cables, splices and connectors, emitters and detectors, transmitters and receivers, data links, LANs, and equipment for installation and maintenance.
**Semester Offered:** Fall, Spring
**Course Student Learning Outcomes (CSLOs):**

1. Describe the characteristics of fiber optic components (optical fiber, cables, connectors, splices, sources, detectors, multiplexers, amplifiers).
2. Function effectively as a member of a team to solve problems, produce documentation, and present information, demonstrating appropriate personal, professional, and social ethics and responsibility.
3. Describe the evolution of communication systems in information transmission and the uses and advantages of fiber optic systems.
4. Determine fiber link budgets in different installation scenarios.
5. Assemble, analyze, and test fiber optic systems using tools of the trade such as fusion splicers, OTDRs, optical spectrum analyzers, and optical power meters.