



## Course Syllabus

| <b>Course</b>                 | <b>Fiber Optic System and Devices<br/>11312 - PHO* K251 - T1</b>  | <b>Lab, Fiber Optic System and Devices<br/>11313 - PHO* K252 - T1A</b>  |
|-------------------------------|---|---|
| <b>Credits</b>                | <b>3</b>  | <b>1</b>  |
| <b>Prerequisites</b>          | EET* K105/106, MAT* K186, and PHO* K101   | EET* K105/106, MAT* K186, and PHO* K101   |
| <b>Co-requisites</b>          | PHO K253  | PHO K251  |
| <b>Attributes</b>             | Open Elective, Tech Lab   | Open Elective, Tech Lab   |
| <b>Type</b>                   | Lecture   | <b>Lab</b>  |
| <b>Time</b>                   | MW 10:46-11:59 AM   | <b>M 1:00-2:40 PM</b>   |
| <b>Classroom</b>              | <b>Three Rivers CC B209</b>   | <b>1:00</b>   |
| <b>Dates</b>                  | 1/21/09 - 5/19/09   | 1/21/09 - 5/19/09   |
| <b>Instructor</b>             | Dan Courtney<br><a href="mailto:dan.courtney@jdsu.com">dan.courtney@jdsu.com</a><br><a href="mailto:dcourtney@trcc.commnet.edu">dcourtney@trcc.commnet.edu</a><br>860-243-6723  | Judy Donnelly   |
| <b>Text</b>                   | <b>K251 Technician's Guide to Fiber Optics 4th ed.,<br/>Donald J. Sterling and Leo Chartrand, Cengage<br/>Publishers</b>  | N/A   |
| <b>Course<br/>Description</b> | Co-requisite: PHO* K252 is required for LFOT majors<br>This course will introduce parameters describing optical fibers, fiber optic system components, waveguide transmission as well as non-telecommunications uses of fiber. Fiber coupling, splicing, and testing will also be covered. Concepts from optics and electronics will be used extensively to explain the operation of fiber systems and devices. | This laboratory course accompanies PHO* K251 and provides practical experience applying and testing fiber optic connectors and splices, fusion splicing, and using instrumentation such as optical loss test sets and the optical time domain reflectometer (OTDR). Students will measure fiber optic parameters and work active and passive devices commonly found in fiber optic systems. |
| <b>Course Topics</b>          | Background and Applications<br>Fiber Types and Characteristics<br>Connectors and Splicing<br>Fiber Optic Cables<br>Sources and Detectors<br>Transmitters and Receivers<br>Fiber Optic Components<br>Fiber Optic Sensors and Other Applications<br>Integrated Optics<br>Optical Communications Systems<br>Test Equipment<br>Special Topics   | Plastic Fiber<br>Numerical Aperture<br>Attenuation<br>Connectorization 1<br>Connectorization 2<br>Single Mode Connectors<br>OTDR<br>Fiber Optic Sensor<br>Homemade Coupler  |