

Three Rivers Community Technical College
PHO 251 Fiber Optic Systems and Devices
3 credits

Course Description

This course is designed to introduce you to the basic principles of fiber optics and to give you a working knowledge of fiber optic systems and applications. Course lectures will be supplemented with instructor handouts and demonstrations. The laboratory section is designed to complement the lecture as well as give you hands-on experience with fiber optic termination and test procedures. In addition, we will have several field trips to see state of the art in fiber drawing and testing, as well as applications such as remote source lighting and fiber sensors

Prerequisites: PHO 101

Texts

1. Jeff Hecht, Understanding Fiber Optics, fifth edition
2. Instructors Notes and Handouts; web sites and journal articles

Attendance Policy

Because the course involves ongoing projects and experiments, you must be in class on time and every time. If you need to miss a class for a legitimate reason, please contact me (885-2353) and your teammates beforehand.

WHAT YOU'LL BE GRADED ON:

Lab Reports (See PHO 252)

Tests

Tests will focus material you will need to know for job interviews . Open-ended questions based on industry applications will also be included. Usually in-class tests are on conceptual material (no calculations). Some tests may be take-home, with group work encouraged; these will be more complex problems for you to solve.

Projects and "other"

This category includes assignments such as PBL challenges, graded homework, reports on field trips, etc.- that is, clearly not a test but not a lab report either.

Final grade

Tests and quizzes	50%
Lab reports	30%
"Other"	20%

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Late work

I really hate grading late work. Once I hand a graded assignment back to the class, your work will NOT be accepted.

Cell phone policy

Cell phones and pagers must be turned off during class or lab activity time. Yes, this means you. Multitasking does not work. Really.

Students with Disabilities

If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact the Disabilities Counseling Services at 383-5240. To avoid any delay in the receipt of accommodations, you should contact the counselor as soon as possible. Please note that I cannot provide accommodations based upon disability until I have received an accommodation letter from the Disabilities Counselor.

Course Topics

- Review of optics as needed
- Fiber optic characterization
 - Numerical aperture
 - Attenuation
 - Modes
 - Dispersion
- Fiberoptic devices: Couplers, connectors, taps, gratings, etc
- System considerations: bandwidth and loss
- Non-telecomm uses of fiber
 - lighting
 - sensors
 - imaging
 - fused fiber devices

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