

Three Rivers Community College
PHO 290 Advanced Laser Topics
3 Credits

Judy Donnelly
C272 jdonnelly@lasertechonline.org

Prerequisites: PHO 240 (Introduction to Lasers) This means you will also have taken two semesters of optics and math through at least Precalculus. You should also have taken at least one EET course although that is not an official prerequisite.

Course Objectives and Method

You have studied many topics in optics and have had an introduction to laser physics and technology. Many of the topics you've seen probably seem to be unrelated to each other and you may not have a good idea of how (or if) they relate to current technology. The goal of Advanced Laser Topics is to complete a research project to demonstrate your knowledge of optics/photonics applications and the breadth of knowledge you have attained.

In completing this project you will (outcomes)

- Analyze a problem and succinctly state the problem you are trying to solve
- Set goals and develop a timeline for accomplishing your project
- Keep neat and thorough records of your research notes and experimental results in a bound lab journal
- Produce weekly and interim progress reports as required
- Contact technology experts as needed, including TRCC faculty, industry advisors and industry technical support personnel
- Produce a report on the completed project demonstrating senior level communication skills
- Develop an effective poster presentation for the LFOT IAC committee meeting at the end of the semester.

Required Text: You will need a bound laboratory notebook to record notes, ideas, data-everything you do in this course. Here is a resource for keeping a laboratory notebook:
<http://www.ruf.rice.edu/~bioslabs/tools/notebook/notebook.html>

Attendance Policy

You are expected to attend each session. If you must be absent, you are expected to contact the instructor and any teammates you may be working with. The lab will be open extended hours so you will have time to work on your project. (Details TBD)

If there is a weather advisory and it is not clear if class will be held, call my office phone (885-2353) after 7:30 AM on the day of the class to find out if I will be in.

Choosing a Project

Ideas will be provided, or you may choose a project of your own with instructor approval. You may work in teams of up to three members *however* you will be graded on your own

contribution as evidenced by your laboratory notebook and instructor observation. Team members will also be asked to evaluate each other's contributions to the effort using a provided rubric.

Grading method:

- 10% project weekly report- is progress evident?
- 10% project interim report
- 30% results: Did you get the project to work? Do your results make sense? Do you have an evaluation of your results (conclusion)? Did you clean up after yourself?
- 10% peer grade: A grading rubric will be provided .
- 30% Instructor evaluation of report and lab notebook