

Instructor: Prof. Carmen S. Menoni
Class Schedule: Monday Eng. B105; Lab: TBD: ERC B212
Office: Engineering EC101E and ERC B325, tel: 491.8659

Email correspondence: to carmen.menoni@colostate.edu – Use in subject line: “ECE404” or email through CANVAS

- 11 experiments – one every week. **You must complete all to earn a passing grade.**
 - The labs are set up for a week and students can come back to take more data if needed.
- Work is carried out in teams of 2 or 3 people
- Teams are dynamic in that it is expected that throughout the semester every student must have worked with all of the others. How to team up is on your own, however two speakers during the weekly in-class presentation can not be from the same team.
- All reports must be written in your lab notebook
- All presentations need to be uploaded into CANVAS
- Grade is equally split between lab notebook reports and your presentations
- Each student will bring to the lab a page-numbered notebook.

GRADING OF LAB REPORTS/PRESENTATIONS (100 points each)

| | | |
|------------------------|--------|------------|
| Parts 1,2,3 | —————> | 20 points |
| Part 4 | —————> | 20 |
| Part 5 | —————> | 40 |
| Part 6 | —————> | 10 |
| Style and organization | —————> | 100 points |

SECTIONS OF THE PROJECT REPORT AND LAB PRESENTATIONS

1. Introduction describing technical concepts and objective
2. Experimental setup
3. Experimental Procedure
4. Data and key observations
5. Results and analysis
6. Conclusion

Parts 1 and 2 to be completed ahead of the lab. They should not be a copy of the guide. Else, style points are 0.

Parts 4 to be completed during lab

Part 5&6 to be completed after the lab

All reports must be written in the lab notebook. There is a printer in the classroom that allows you to plot data or pictures taken during the lab. You can paste material in the notebook during lab.

Reports are individual work

Graphs can be hand-drawn or plotted with software. When software is used, print and paste in the notebook

You need a lab notebook with pages numbered. Pages can not be cut out from the notebook. If a page is left intentionally blank, it has to be marked as such.

- From the following week onwards, we will meet once a week in the classroom and once in the lab.
- The specific lab of the week will be mounted during a whole week for each student to have the opportunity to collect all data.
- If you need to get into the lab and is locked, please come to see Prof. Menoni on B325 (ERC).
- There will be 3 presentations every week. Each student is given 10 minutes - and 5 minutes for discussion
- Presentations should contain not more than 10 slides. Presentations need to include name of lab partners.
- The schedule of presentations will be posted on CANVAS. To accommodate this schedule, you will need to rotate lab partner.

Although the lab is team work, the lab notebook, lab report and presentation are individual work.

The aim of the lab notebook is to provide sufficient information such that someone who reads it can perform the experiment

A laboratory guide will be available in CANVAS one week ahead of the lab

| LAB # | TITLE | WEEK | LAB REPORT DUE A WEEK AFTER |
|-------|--|------|--------------------------------|
| 1 | OPTICAL CAVITIES, ALIGNMENT AND STABILITY | 2 | |
| 2 | GAUSSIAN BEAM CHARACTERIZATION | 3 | Combined report of Lab 1 and 2 |
| 3 | TRANSVERSE MODES IN AN OPTICAL CAVITY | 4 | YES |
| 4 | OUTPUT POWER VS DISCHARGE CURRENT FOR A HE-NE LASER | 5 | YES |
| 5 | BREWSTER ANGLE AND THE POLARIZATION OF LIGHT | 6 | YES |
| 6 | LIGHT EMITTING DIODE & LASER DIODE CHARACTERISTICS (A&B) | 7 | YES |
| 7 | NUMERICAL APERTURE OF OPTICAL FIBERS | 8 | YES |
| 8 | OPTICAL FIBER ATTENUATION | 9 | YES |
| 9 | OPTICAL FIBER LINK | 10 | YES |
| 10 | OPTICAL DOMAIN REFLECTOMETRY | 11 | YES |
| 11 | HOLOGRAPHY | 12 | YES |