

# OPTI 505L: Fundamentals of Physical Optics Laboratory Syllabus

## **Instructor:**

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## **Grading Policy:**

- Lab Notebook 60%
- Report 20%
- Quizzes & Participation 20%

## **Outline**

1. Orientation
  - Collimation
  - Gaussian beams
  - Twyman-Green interferometer
2. Basic Interference
  - Young's double slit
3. Diffraction I
  - Fresnel: straight edge, pinhole
  - Fraunhofer: square aperture, circular aperture, multiple slits
4. Diffraction II
  - Gratings
  - Zone plates
  - Volume diffraction
  - Scattering
5. Polarization
6. Coherence I
  - Young's double slit
  - Multiple slits
  - Laser diode
7. Coherence II
  - Michelson interferometer
8. Twyman-Green Interferometer
9. Fizeau Interferometer
10. Shearing Interferometry
11. Phase-Shifting Interferometry
12. Coherence in Microscopy