OPTI 505L: Fundamentals of Physical Optics Laboratory Syllabus

Instructor:
Professor Tom Milster, College of Optical Sciences, Office Room 729
Email: milster@optics.arizona.edu
Phone: 1-520-626-8280

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
   - Fraunhoffer: 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