Physics 319
Introduction to Optics
MWF 1:00-1:50 pm (plus two hours of laboratory time to be scheduled)
109 Lewis Hall (Laboratory is in Lewis 203)

Prof. Joel Mobley
My office is at the NCPA, Room 1034 – ph:915-6937
jmobley@olemiss.edu (E-mail is the best way to communicate with me.)
Office Hours: Tu 1:00-2:30 in the Optics Lab (Lewis 203)
Other times by appointment at NCPA: Wed, Th, Fri

Final Exam is Wednesday December 10th at 12 pm. The final is comprehensive.

Grading

Homework	15 %	
Laboratory	25 %	**NOTE**: you must earn at least 60% of these points to pass.
Midterm Exams (2)	20 %	
Final Exam	20 %	

Grading Scale

A: 100.0 – 92.0	**B+**: 87.4 – 82.5	**C+**: 74.9 – 70.0	**D**: 62.4 – 50.0
A-: 91.9 – 87.5	**B**: 82.4 – 78.5	**C**: 69.9 – 66.0	
	B-: 78.4 – 75.0	**C-**: 65.9 – 62.5	**F:**<50.0

Textbook – Optics, 4th Ed., by Eugene Hecht (ISBN: 0-8053-8566-5)

Course Description – Intermediate description of electromagnetic wave propagation; topics in geometrical and physical optics including interference diffraction, polarization, and laser physics; lab exercises in physical and geometrical optics.

Learning Objectives
At the completion of this course, the student should be able to describe optical phenomena in terms of the ray, wave and particle models and make appropriate use of these to solve problems. They should also be able to quantitatively link diffraction, interference, reflection and transmission phenomena to the physical properties of light, and the interaction of light with matter and materials.

Rules

- Quizzes may be given depending on attendance. Points will be folded into Midterm Exams scores.

- Refrain from distracting behavior (texting, web surfing, checking email, etc…). Be considerate of your fellow students.

Topics Covered

- Electromagnetic waves
- Properties of light
- Light and matter
    - Propagation in materials, at boundaries
- Ray optics
    - Image formation
    - Lens systems
- Physical optics
    - Diffraction
    - Interference
    - Coherence
- Modern Optics
    - Quantum Physics
    - Lasers
- Selected topics (fiber optic waveguides, etc…)

Laboratory

The laboratory part of the course requires two hours a week. These will be scheduled during the first week of class. These are typically scheduled on Monday, Wednesday and/or Thursday afternoons to end by at least 6 pm.

Laboratories will meet each week after the second week of class.

Important Dates

September 1st	Labor Day Holiday
October 6th	Last day to drop
November 24th -28th	Thanksgiving Holiday
December 5th	Last Day of Class
December 10th	Final Exam