

# OPTICS

## PHYS 430/530

### Fall 2017

**Instructor:** Dr. Maria Baldini

**Phone:** (630) 252-0494

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You must use your @niu.edu address when you send me an email.

**Class hours:**

- 5:00-6:15 PM TuTh

**Location:** Faraday Hall 237

**Optics lab:** 219 La Tuorette Hall

**Office Hours** (Faraday Hall 220): Tuesday afternoon and every time on Thursday. Appointments strongly encouraged.

### Goals and Philosophy:

Welcome to Physics 430/530! This course is about optics. In this class, we will study the nature of light starting from geometric optics to modern approaches. The class consists in lectures and laboratory experiments in the Optics Lab.

### Course administration:

**Text:** Eugene Hecht, Optics, 5th ed. Other suggested reading: G.R. Fowles, Introduction to Modern Optics.

**Lab. Reports:** Several experiments (9/10 depending on time and progress of the class) will be discussed and performed in the optic laboratory during the entire duration of the class. Each experiment will require a lab report. Theory will be discussed in class before each experiment. The experiment will be carried on in groups and I will provide an handout for each experiment with a description of the equipment and procedures. You are expected to spend some extra time in the Optic lab with your group to work on the experiments. Each student is expected to write a lab report. The lab reports will contain a description of the theory, procedure, data presentation and discussion of the results. I will provide a detailed guideline for the reports during the first weeks of the course. Lab reports will be assigned with a due date and collected.

**Homework:** Homework is assigned with a due date and collected. I will handout printed copies in class. Doing homework is crucial in learning the material and to pass the exams and requires a good amount of time outside class.

**For Graduates (Phys 530):** Projects topics (3 or 4 depending on time and progresses) on advanced optics are planned for the graduated students attending the class. I will provide some extra readings and help you with the bibliography survey. The project topics will result in a short research report and a technical oral presentation (15 min.)

**Blackboard:** I will use Blackboard, the course online management, to upload useful material or documents during the semester.

### Student Evaluation:

- Midterm exam will be held sometime at the end of October (**Midterm exam = 20%**).
- Final Exam is to be held sometime between the 11<sup>th</sup>-15<sup>th</sup> of December (**Final exam = 30%**).
- Lab: 9 labs are required. If you do less than 9 of the experiments (or fail to report on them) your grade will be jeopardized, no matter what your relative standing with respect to the exams and homework. **You need to score at least 60% in the lab to pass the course (Lab Report 35 %)**.
- Homework: Homework are assigned with a due date and collected (**Homework: 15%**).
- Project topics (PHYS 530): Oral presentation and report will have a due date and you will have about a month to prepare (**homework + oral presentations on research topic: 15%**).

### Final Grade:

Your final grade will be determined according to the following scale:

Letter Grade	Percentage
A	>95%
A-	90-94.99%
B+	88-89.99%
B	84-87.99%
B-	80-83.99%
C+	76-79.99%
C	73-75.99%
C-	70-72.99%
D	60-69.99%
F	<60%

I reserve the right to adjust the grades upward based on my opinion of the difficulty level of the assessment tools (exams) used over the semester. Opportunities will be given through the course to increase your final percentage grade by up to 4% with extra credit

### Class policies:

- **Attendance.** Attendance is mandatory. The best way to enjoy and pass this class is to be present and takes good notes. Therefore, laptop/phone cell usage is not allowed during lecturing. I expect you to take notes. You have the possibility to skip class twice without justifications, then you have to present a serious excuse for skipping a class (like a doctor notes).
- **Participation.** I expect each of you to contribute to the class – so please ask questions and be prepared to speak when called upon.

- **Late Work.** Homework/lab report will be firmly due on its due date. Late Homework will be accepted later only with a valid justification but with a 10% penalty per week. The penalty for late submission of lab report is 15% per week. You can work with others on homework but write your own wording. The lowest grade on your homework will be dropped.
- **Tardiness.** If your personal an/or professional schedules prevent you from regularly arriving to class on time, please discuss this with the instructor at the beginning of the semester. Being tardy twice (15 minutes or more) will reduce total earned by 5 points for each late arrival thereafter.
- **Academic dishonesty:**
- I will hold you to the standard of academic honesty that have been established by NIU. Failure to meet this standard will have serious repercussions. Any incidence of academic dishonesty on exam will result on your final grade reduced by at least two letter grade. The full text for NIU Statement of Academic Integrity can be found at: [http://www.niu.edu/academic\\_integrity/students/types/index.shtml](http://www.niu.edu/academic_integrity/students/types/index.shtml)