

Lecturer: Roger Olson
Office: Science 018
Office Hours: To Be Announced, or by appointment
Lecture: Mon, Wed, Fri, 8:00 – 8:50 pm, in SCI 011
Lab: Mon or Wed 2–3:50 pm, in SCI 014
Lab Instructor: Jaime Gingerich
Website: www.saintjoe.edu/~rogero/physics122
Text: *Physics*, 8th Edition, Cutnell and Johnson (Wiley)

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Course Catalog Description: *General Physics II: Optics, Electricity and Atomic Structure*. This course is a sequel to Physics 121. It studies electricity and magnetism, light and optics, and it briefly sketches some selected topics in Modern Physics.

Course Web Site: Most handouts given in class will also be posted on the course website (shown above). Lecture notes will be posted as pdf files, usually a day or two before lecture. I strongly recommend that you print out and bring the lecture notes to class.

Office Hours: If you have questions about the homework or topics discussed in lecture, please stop by my office and ask your questions. One-on-one interaction is the best way for you to learn!

This course has two components:

- **Lecture:** The lecture is where I introduce new material, and give you the tools you will need to understand each subject. The emphasis in lecture will be to introduce the basic *concepts* for each area and how they fit together. Please ask questions! I realize that this material is new and challenging to each one of you, and I expect you to ask questions, no matter how basic or advanced they are.
- **Laboratory:** Lab meets once a week. At your first lab meeting, you will receive a lab syllabus that will explain the policies for lab. You must pass lab in order to pass the course.

Grading: Your grade will be determined as follows:

Homework	150
Lab	150
Lecture quizzes	150
2 Exams (each 150 pts)	300
<u>Final Exam</u>	<u>300</u>
Total	1050

Homework: Several problems will be assigned for you to work through each week. Your homework will be submitted on-line through CHIP: Computerized Homework In Physics. CHIP allows you to receive instant feedback on your homework, and additional tries if your first answer is incorrect. You will receive a handout detailing how to access CHIP. Homework is due before midnight on Thursdays. After the due date, you have one week when you may complete or correct any problems from that homework set, and receive 50% of the available credit (as long as you have not used all of the attempts that are allowed for credit). At the end of the semester the total of the graded homework will be scaled to 150 points.

Lab: As detailed in the lab syllabus, the lab will be worth 150 points. Note that you must pass the lab in order to pass the course!

Lecture Quizzes: We will frequently have quizzes in lecture. Most of the quizzes will take the form of Group Problem Solving, where you are able to work in groups of three towards the solution of the problem. Most of these problems will be concept-based, requiring you to understand the concept in order to solve the problem in a timely manner. The quizzes can cover both last lecture's material and the current lecture's material. Excused absences for missed lecture quizzes must be accompanied by documentation within *one week* of the absence. However, you may have one excused absence for being ill without a doctor's note (provided you contact me within one week of the absence). Your lowest two quiz scores will be dropped. (When we have more than one quiz per day, the total grade for all the quizzes counts as one "quiz score".) The total of the graded quizzes will be scaled to 150 points at the end of the semester.

Exams: There will be two exams on the dates listed below. There will also be a final exam during finals week. The exams will be closed book and closed notes, but you will be provided with an equation sheet for each exam.

Exam Dates

Week of February 8th
Week of March 22nd

Makeup exam policy: In order to be eligible to take a makeup exam, you must contact me to discuss your problem or excuse before the exam.

Letter grades: The grading scale is listed below. I reserve the right to make small adjustments in the grade cut-offs, but do not expect to make any large adjustments. Your up-to-date grade for each component is available online through CHIP.

100 – 93	A	89 – 87	B+	79 – 77	C+	69 – 67	D+
92 – 90	A-	86 – 83	B	76 – 73	C	66 – 60	D
		82 – 80	B-	72 – 70	C-	59 – 0	F

General Remarks. The importance of working problems and addressing the questions at the end of the chapter cannot be overstated. Just as you can't get ready for a race by watching someone else run, you cannot learn to solve problems by simply watching someone else go through the problem for you. There are no shortcuts – you simply must practice, practice, practice! Time spend in learning the conceptual underpinnings is very important and will help you learn to solve numerical problems much faster. Formulas are of little help if you don't understand the concept. If you find yourself flipping through the book looking for the formula to solve a problem, you should realize that you need to study the concept more before you attempt the problem. If you have a good grasp of the concept, you should be able to solve the problem without looking through the whole chapter to find the "magic" equation.

I firmly believe that each of you can gain a solid conceptual understanding of physics! Please come to my office hours if you are experiencing difficulty in the course!