

## Physics 2611: General Physics II

*Spring 2023*

### *Course Outline*

**Description:** (From the course catalog) "Study of electric and magnetic fields and their effects; introduction to electric circuits; light as an electromagnetic wave; introduction to geometrical and physical optics."

**Learning Goals:** To be specific, upon successful completion of this course a student will be able to

- 1) Identify the electric and magnetic field, in vector components, of simple charge- and current-assemblies
- 2) Understand DC and AC circuit analysis, and have some understanding of their use in technology applications. Understand in- and out- of phase components, power transmitted and circulating.
- 3) Be versant in light/wave phenomena, and appreciate the deep connections between those phenomena and Maxwell's equations for the electromagnetic field. Facility with diffraction, evanescence, color, photon, scattering, dispersion.

This course is a General Education course in the Natural Sciences Domain and emphasizes General Education goal.

**GOAL:** Students will demonstrate understanding of the basic facts, principles, theories, and methods of science. Students will demonstrate the interdependence of science and technology and the influence of science and technology on society.

- Students will demonstrate the knowledge and application of scientific principles.
- Students will use and interpret formulas, graphs, and tables.

**Prerequisites:** (From the course catalog) Physics 2610. Also you must have completed or be concurrently enrolled in MATH 1572 (Calculus II).

We will have occasions to use calculus in this course, but for the most part, your facility with basic algebra, trigonometry and other forms of quantitative reasoning (reading and writing graphs, conversions of units, etc.) will be practiced throughout and serve you well.

**Textbook:** *Physics for Scientists and Engineers, 9<sup>th</sup> Ed.*, by R. A. Serway and J. W. Jewett, a Brooks-Cole Publication, ISBN-10 1-113-95408-1

The discrete volume II may suffice for this course, which will detail and master the material in Chapters 23-39.

Supplemental references available upon request.

**Attendance:** Attendance will be recorded, usually each class period in the form of a short online question pertinent to the class. There will be no makeups for exams, quizzes, and in class work that counts toward your grade, and so it is imperative that you are in class and ready to participate fully. The class will meet in room 2006 of Ward Beecher Hall at 5-7pm, Monday and Wednesday.

**Homework:** In addition to book problems we will be using a FREE online homework site (written and managed by your instructor). By going to the class website (below) and logging in to that week's homework script, each student receives a unique problem set. A student is allowed multiple attempts (~5) at answering each question to receive full credit and can continue trying up to 10 times to receive partial credit. The online homework will also give you some immediate feedback and you will typically be given between 4-7 days to complete each online homework.

There are many options if you get stuck on a problem. **Please work together!** You will learn as much from each other, struggling through these problems together, as you will from me! **Check the course blog for hints.** After hours e-mailing your instructor with a question or to ask for a hint to get unstuck has turned out to be a very natural way to get timely aid. Sometimes sending a photograph of your written work also helps.

For the book problems, the answers to the odd numbered problems are in the back of the book, and of course, you can always Chegg the rest...DON'T DO IT, 'CAUSE YOU WON'T REALLY LEARN!! Clearly since each person has different numbers for each problem, I can pretty easily tell who has used Chegg and I will catch you and kick you out of the class for cheating (see Academic Integrity statement below). Chegg (and their ilk) = cheating. Of course, your instructor will often provide on-line answer keys after the due date of the assignment. Since many of these questions (both from the online homework and from the book) will be the basis of quiz and exam problems it is really essential that YOU WORK through ALL of the assigned problems *and other ones like them in your book!*

**Chapter Quizzes:** There will be chapter quizzes, typically a few days after we finish a chapter (or two or so) in lecture. It will be announced before hand and there will not be a quiz for every chapter.

Each quiz will take about 30 minutes, and will test conceptual and analytical mastery of the chapter material. No cheat sheet (see below) will be allowed for these smaller in-class quizzes. Answer keys will be made available immediately to you on the course web site or in your hand on paper as you leave the quiz. The quiz problems and the assigned homework are likely to overlap significantly. There will be about 3-5 quizzes over the course of the semester.

There will be no make up quizzes and no surprise quizzes. There will be no exceptions to this rule. Most of the quizzes will happen on Wednesday or Friday.

**Midterms:** There will be three midterms; Each of these midterms will be a full class period (50 minutes) long. They are all closed book, though you will be allowed one 8'-by-11' inch "cheat sheet" (both sides) that you will sign and hand in with you exam. The midterm dates are

**Wednesday, Feb. 1, and**  
**Wednesday, March 1, and**  
**Wednesday, Apr. 12**

There will be no make up exams. If you miss one for a valid excuse (which must be agreed upon with the professor *before* the exam) the average of your other two exams will count as the missed exam.

**Final Exam:** The comprehensive final exam will cover chapters 23 through 35. It will be a two hour exam that will take place on **Monday, May 1, 5:30-7:30pm**

**Grading policy:** Each midterm is worth 100 points. The in-class chapter quizzes will be averaged to a 100 point score (thus each quiz will each be worth about 25points and aggregate attendance score worth 25 points). The in-class 'warmup' problems (combined with attendance) will be averaged into a 50 point score. The homework will also be averaged into a 300 point score. The final exam will count for 250 points, leading to a total of 1000 points.

The resulting grading scale will be

850+ A  
750-850 B  
600-750 C  
500-600 D  
500- F

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e-mail: [dcphtn@gmail.com](mailto:dcphtn@gmail.com), do not use the YSU quemail or 360windows as I only check that about 1/week.

**Important Note:** Prof. Crescimanno only reads his YSU MS360-mail infrequently, SO do not use YSU MS360-mail to communicate anything of any urgency to him! Use instead the e-mailing addresses above.

Course Website at: <http://mjccrescimanno.people.ysu.edu/2611/>

Office Hours: M: 10-11am, T:9-10am and 2-3pm, , W:11-12am, F: 2-3am but many other (day-)time(s) by appointment!

**University Policies:**

University policies can be found online and provide you guidance on your rights as a student in this course. The links below take you directly to a specific policy. Should you have any questions about a policy, please do not hesitate to contact me using the information at the top of the syllabus.

(Online at <https://ysu.edu/institute-teaching-and-learning/syllabus-university-policies>)

Statement of Non-Discrimination from the University

Academic Integrity/Honesty

Student Accessibility

Incomplete Grade Policy

Attendance