

PHY 132.01 – Classical Physics for Scientists and Engineers II

– Spring 2022 –

General Course Information and Policies

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Course Description (from the [Undergraduate Course Bulletin](#))

Second part of a two-semester physics sequence for physical-sciences or engineering majors who have a strong mathematics background and are ready for a fast learning pace. It covers electromagnetism, electric circuit theory, and optics. Calculus is used concurrently with its development in MAT 132. Three lecture hours and one recitation hour per week. The Laboratory component, PHY 134, may be taken concurrently. Not for credit in addition to PHY 122, PHY 127, or PHY 142. This course has been designated as a High Demand/Controlled Access (HD/CA) course. Students registering for HD/CA courses for the first time will have priority to do so.

Prerequisite: C or higher in PHY 131 or PHY 141

Corequisite: MAT 132 or MAT 142 or MAT 126 or MAT 171 or AMS 161

DEC: E SBC: SNW 3 credits

The *Bulletin's* description, I want to stress this, is very accurate, and no exaggeration: this course will indeed have a fast pace, will require strong mathematical skills, and will cover a substantial amount of often challenging material. A successful outcome requires self-motivation, a serious level of commitment on your part, and a sustained, dedicated effort throughout the semester.

Learning Objectives

Upon completion of the course students should have a solid quantitative understanding of the fundamental principles and concepts of electromagnetism, electric circuit theory, and optics. They should also have a significant amount of experience in applying these principles and concepts to describe in mathematical terms a range of physical systems from these fields, and in solving the resulting equations using elements of algebra, trigonometry and single-variable calculus.

Instructor

Radu Ionaş (radu.ionas@stonybrook.edu; please c.c. all correspondence to **Anthony Mannino**, and specify in the email subject line the course number, **PHY 132**. Allow between 24–48 hours for a reply. Recitation-related inquiries should be addressed directly to your recitation instructor.)

Office hours: MWF 8:55–9:55 am, immediately following the lectures.

Teaching Assistant: *Anthony Mannino* (anthony.mannino@stonybrook.edu).

Lectures

MWF 8:00–8:55 am, *Frey Hall 102*. The lectures will be live-streamed online through Blackboard. Attendance is not mandatory.

Course Administration

The course administration will be done mainly via [Blackboard](#). Important course announcements will be posted in the Announcements section, or broadcast by class email. Lecture slides and various other course materials will be posted regularly in the Course Documents section.

Required Materials

1. A subscription (Student Access Code) to Pearson | Mastering Physics to complete online homework assignments. If you already have one which is not due to expire before the semester end date no purchase is necessary. To register, login to Blackboard and go to the course home folder; then, from the left menu, select Course Tools > Pearson's MyLab & Mastering and follow the instructions there. If you take this route **you will not need a course ID**. Before proceeding with registration please read the important information collected under the heading *Mastering Physics FAQ & Troubleshooting* at the end of this document. Homework will begin to be assigned in the first week of classes, and **it is imperative that you set this up in a timely manner**.
2. Textbook: Douglas C. Giancoli, *Physics for Scientists and Engineers*, 5th edition (ISBN 9780134283470). We estimate to cover to various degrees chapters 21 (Electric Charge and Electric Field) through 35 (Diffraction). Mastering Physics offers the option of purchasing an integrated digital copy of the textbook. I recommend it, but if you obtain the textbook by other means, that should be fine as well.
3. A calculator. This should have: addition, subtraction, multiplication, division, square root, trigonometric and logarithmic functions. It should ideally *not* have the ability to store formulas, as exams will allow no formula sheets. Since this is not always possible, you will simply be required to reset the memory in front of a proctor before taking the exam.
4. An electronic device with a video camera and microphone, supporting Zoom, with an internet browser meeting the requirements for the Mastering Physics platform, and a reliable internet connection capable of streaming video. If you need to borrow an electronic device, please visit SBU's [Laptop Loan Program](#).

Help Resources

You can get help with this course from one of the following free tutoring services:

- *The Physics Help Room* — Physics Building, room A-129, Monday – Friday 9:00 am – 6:00 pm. Graduate and undergraduate teaching assistants, teaching staff and faculty hold office hours at this location.
- *The Academic Success and Tutoring Center (ASTC)* — one-on-one and small-group tutoring by appointment.

An excellent and very useful collection of problem-solving videos can be found on Professor Thomas Hemmick's YouTube channel [here](#). They are organized in playlists by topic — look for the playlists titled Solving Physics II: Chapters 02 through 19.

For a thought-provoking collection of general learning tips and academic success strategies, explore this [website](#) compiled by educational experts from our university.

Recitations

Recitation classes meet once a week. They complement the lecture with a small-class environment designed to foster a closer interaction with both your instructor and your colleagues. While lectures emphasize to a greater extent the concepts and general theory, recitations are focused on applications and problem solving. Take advantage of the interactive format, be active, ask questions about the concepts discussed in the lecture and the problems assigned in the homework. Mastering Physics does not offer detailed explanations for the solutions to the homework problems, and the recitation class is *the* place to have those details filled in. Try as much as possible to have the homework problems that you encounter difficulties with discussed in class. Before the exams there will likely not be enough time to review them all.

Recitation instructors will evaluate your progress with occasional quizzes or by other means which they will establish at the beginning of the semester. At the end of the semester you will receive a cumulative recitation grade counting towards your final grade. To account for possible differences in grading rigor between different recitation instructors your recitation grade may be normalized.

	Office Hours
Prof. Erlend Graf	
Prof. Vladimir Goldman	
Prof. Justin Kaidi	

Homework

Homework will be assigned every week online through Mastering Physics. Before you begin working on your first assignment click on the Grading Policy link located on the upper right corner of the page and read carefully how your score is calculated. As a rule, homework will be assigned on the Monday before the relevant material is covered in the lecture and will have a due date on the next Sunday at 9:00 pm. Given the large enrollment of this course I will not be able to process the many demands for deadline deferral that I know from experience are going to come my way every Sunday evening. **So I will institute a strict no-deferral policy, regardless of whether you have justifiable reasons for missing it or not.** (Exceptions will be made for very serious reasons, such as medical emergencies or mental hardship.) However, in counterpart, I will not consider it a hard deadline, but set instead a small penalty of 0.5% per hour overdue (this amounts to a penalty of 12% per day overdue, which, to be clear, **affects only the credit earned after the due date**). It is always good practice to start working on your assignments early enough to allow yourself time not only to finish, but also to handle possible unexpected delays.

Exams

We will have two midterm and one final exam; their dates and times are listed in the Course Schedule section below. All three exams will be administered in-person, subject to the epidemiological conditions at the time; exam locations will be announced on Blackboard before each exam. The midterm exams will cover the material discussed in the lecture from the beginning of the semester in the case of the first one, and from the previous midterm exam in the case of the second one, until the time of the exam. The final exam on the other hand will be comprehensive (i.e. from the whole material). **All students will be expected to take the exams on the dates scheduled, so please plan accordingly.** Only exceptionally serious and documented reasons for missing an exam will be considered. If before an exam you have been exposed to someone who tested positive for COVID-19 or experience symptoms compatible with COVID-19 but cannot produce a positive

test result, you must call the [Student Health Services Contact Tracing Line](#) at (631) 632-6176 and then forward to me their instructions.

Grading

Your *final score* will be calculated at the end of the semester based on these percentage weights:

Midterm exam 1	15%
Midterm exam 2	15%
Final exam	35%
Online homework	15%
Recitation grade	20%

The following *approximate* (!) conversion table will then be used to convert your final score into a letter grade:

Grade	A	A-	B+	B	B-	C+	C	D	F
% \geq	87	85	83	72	70	68	55	45	<45

This conversion scheme should be seen as indicative, and I reserve the right to make adjustments to it, even substantial ones if necessary. In the event that due to adverse developments in our epidemiological circumstances any one of the exams will not be given in-person, this scheme will be abandoned and the grades will be curved. (This means that your performance with respect to the rest of the class will constitute in that case the pre-eminent factor determining your grade. More details will be provided at the time.)

Course Policy on ...

- **Exam schedule conflicts:** If you register for this course it is your responsibility to make sure that there are no schedule conflicts for the midterm and final exams with other courses or activities that you may undertake. A schedule conflict will *not* constitute a valid reason for a make-up exam to be given.
- **Extra credit:** There will be no extra credit, or any other possibility to round up a letter grade at the end of the course. It is up to you to monitor your progress during the semester and take timely action to improve your score while such an action can still be taken.

Course Schedule

Week	Projected sections from Giancoli to be covered (updated weekly)	
1/24 – 1/28	21.1–8	
1/31 – 2/04	21.9–10, 22.1–3	
2/07 – 2/11	23.1–5, 7, 8	
2/14 – 2/18	24.1–6	
2/21 – 2/25	25.1–6	Midterm 1: 2/23 7:50–9:15 pm
2/28 – 3/04	26.1–5, 7	Drop down by 3/04 at 4:00 pm
3/07 – 3/11	27.1–4, 7–9	
3/14 – 3/18	Spring Recess	
3/21 – 3/25	28.1–6	
3/28 – 4/01	29.1–4, 6, 7	GPNC or W by 4/01 at 4:00 pm

4/04 – 4/08	30.2–9	Midterm 2: 4/06 7:50–9:15 pm
4/11 – 4/15	31.1–8	
4/18 – 4/22	32.1–8	
4/25 – 4/29	33.1–4, 8	
5/02 – 5/06	34.1–3, 35.1	
5/09 – 5/13		Final exam: 5/12 2:15–5:00 pm

Standard University Policy

A. Student Accessibility Support Center Statement: If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, 128 ECC Building, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

B. Academic Integrity Statement: Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person’s work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the [Academic Judiciary website](#).

C. Critical Incident Management: Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Student Conduct and Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students’ ability to learn. Until/unless the [latest COVID guidance](#) is explicitly amended by SBU, during Spring 2022 “disruptive behavior” will include refusal to wear a mask during classes.

D. Religious Holidays: This course will operate in compliance with the University’s policy regarding religious holidays, set forth [here](#). In particular, you should notify the instructor in advance, but definitely before the final date of the ‘add/drop’ period, of your intention to be out for religious observance.

Mastering Physics FAQ & Troubleshooting

- You *must* register for Mastering Physics through Blackboard as indicated on page 2 of the syllabus. If you are asked for a course ID, that is a sure sign that you didn’t; a course ID simply won’t work.
- When registering, use your [stonybrook.edu](#) email address. Also, spell your name exactly as it appears in Blackboard, including letter capitalizations.
- If you are not sure whether you want to stay in this course you may want to consider signing up for temporary access. This will need to be upgraded to full access after the grace period expires (by following the instructions [here](#)).
- Mastering Physics offers the option of purchasing an integrated digital copy of the textbook. I recommend it, but if you obtain the textbook by other means, that should be fine as well.

- If you experience error messages while signing up or signing in, try
 - enabling pop-up windows
 - clearing website data
 - restarting your device
 - switching to another browser: Mozilla Firefox, Google Chrome, Microsoft Edge, or other
 - logging-in from a different device, such as a tablet, a phone, or another laptop.
- If you are using a Mac computer and your browser displays the message *Not Secure* when accessing Mastering Physics, [change the trust settings](#) of the Pearson certificate in Keychain Access to *Always Trust*.
- If all these measures fail, contact Pearson’s Customer Support [here](#).