

PHY 131.01 – Physics for Scientists and Engineers

★ Fall 2020 ★

General Course Information and Policies

Important Note: Every effort will be made to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. It is your responsibility to check Blackboard for corrections or updates to the syllabus. Any changes will be clearly noted in course announcements or through Stony Brook email.

Last updated: [2020-08-06 19:14](#)

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

First 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 mechanics, wave motion, kinetic theory, and thermodynamics. Calculus is used concurrently with its development in MAT 131. Three lecture hours and one recitation hour per week. The Laboratory component, PHY 133 (Lab 1), could be taken concurrently. Not for credit in addition to PHY 121, PHY 125, or PHY 141. Advanced Placement Physics or a very strong course in high school Physics is recommended. 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: MAT 123 or level 5 on the mathematics placement examination.

Corequisite: MAT 125 or MAT 131 or MAT 141 or AMS 151.

DEC: E **SBC:** SNW 3 credits

Indeed, this course will have a fast pace and will cover a substantial amount of often challenging material. Be aware that 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 completing the course you should demonstrate a solid conceptual understanding of the fundamental principles of Classical Mechanics and Thermodynamics, and should have accumulated significant experience in describing a range of classical physical systems in mathematical terms, as well as in solving quantitative physics problems using elements of algebra, trigonometry and single-variable calculus.

Instructor

Radu Ionaş

Email: Radu.Ionas@stonybrook.edu (please c.c. emails to ★★ at ★★ @stonybrook.edu)

Office hours: MWF from 9:00–10:00 am, immediately following the lectures, on a dedicated Zoom link if privacy is required.

Lectures

The lectures will be live-streamed online through Blackboard-integrated Zoom on MWF from 8:00–8:53 am. Video recordings of the lectures will be available for subsequent viewing.

How We Will Communicate

The course administration will be done mainly via [Blackboard](#). Course announcements, updates a.s.o. will be posted there or sent to you via class email. You will also have access to lecture slides, practice problems and various other course materials.

Course-related questions should be posted in the General Questions Forum in the Discussions section of Blackboard. For personal/private issues, email me directly. Please allow between 24–48 hours for an email reply. Your Stony Brook University email must be used for all University-related communications.

Required Materials

1. Textbook: Giancoli, *Physics for Scientists and Engineers with Modern Physics*, 4th edition (Pearson Prentice Hall). We estimate to cover to various degrees sections 1 (Introduction, Measurement, Estimating) through 20 (Second Law of Thermodynamics).
2. A subscription to [MasteringPhysics.com](#) to complete online homework assignments. You must purchase a student access code to create a MasteringPhysics account and then link this to your Blackboard account by following the instructions provided. Homework will begin to be assigned in the first week of classes, and **it is crucial that you set this up in a timely manner.**
3. An electronic device with a video camera and microphone, supporting Zoom, with an internet browser meeting the requirements for the MasteringPhysics platform, and a reliable internet connection capable of streaming video.
4. A calculator. This should have: addition, subtraction, multiplication, division, square root, trigonometric and logarithmic functions.

Help Resources

For a list of ways in which you can get help with this course follow [this link](#).

Recitations

Recitation classes meet once a week, online as well. They complement the lecture with a small-class environment designed to foster a closer interaction with both your instructor and your colleagues. While lectures will emphasize to a greater extent the theory, recitations will be focused on applications and problem solving. Take advantage as much as possible of the interactive format, ask questions about the concepts discussed in the lecture and the problems assigned in the homework. 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
Instructor 1	
Instructor 2	
Instructor 3	
Instructor 4	
Instructor 5	

Homework

Homework will be assigned every week online through [MasteringPhysics.com](https://www.masteringphysics.com). 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 *second* Sunday after that at 9:00 pm. Given the large number of students enrolled in the class 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.** However, in counterpart I will not consider it as a hard deadline, and I will set instead a small 10%/day penalty for skipping it (even if by a few minutes: typically you will have almost two weeks to work on each homework; start working on it sufficiently early to allow yourself time to finish, as well as to process unexpected problems, which are sure to happen).

Exams

There will be *three* 40-minute midterm exams and one longer final exam (see the Course Schedule below for the precise dates and times). Each midterm exam will be administered through the MasteringPhysics platform during one of our regular Monday lecture hours, and will be from the material covered from the time of the previous exam (or the beginning of the semester, for the first one) until the time of the exam. The final exam will be administered online as well in a manner to be announced later, but will be from the whole material. **All students will be expected to take the exams on the dates scheduled, so please plan accordingly.** Only documented serious reasons for missing an exam will be considered, [in accordance with university policies](#). However, to balance this out and afford you an opportunity to make up for an incidental adverse circumstance without incurring a penalty, when computing your final grade I will only take into account the best two out of your three midterm exam scores.

Grading

Your total final score will be calculated based on the following percentages:

	Percentage
Best 2 out of 3 midterm exams	20% each
Final exam	30%
Online homework	15%
Recitation grade	15%

Important note: This grading scheme assumes that the final exam will be proctored in some way or another using an online proctoring platform recommended by SBU (which is expected to be announced at a later time). If that will turn out not be the case, I reserve the right to reduce its percentual weight in the final score to a more equitable value.

The grades will be curved, which means that your letter grade will be influenced by your performance relative to the rest of the class. In this grading system it is important that you earn as many points as possible. To help you assess your progress, an approximate curve will be made after each exam and the homework score distribution will be released at regular intervals. Your course grade will be determined by the final curve, which will be calculated similarly to the partial curves, but out of the total final scores.

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)
08/24 – 08/28	1, 2
08/31 – 09/04	2
09/07 – 09/11	3
09/14 – 09/18	4 Midterm exam 1: 09/14 8:00–8:40 am
09/21 – 09/25	5
09/28 – 10/02	6, 7
10/05 – 10/09	8
10/12 – 10/16	9 Midterm exam 2: 10/12 8:00–8:40 am
10/19 – 10/23	10
10/26 – 10/30	11, 13 (skip 12)
11/02 – 11/06	13, 14
11/09 – 11/13	14, 15, 16 (abbrev.) Midterm exam 3: 11/09 8:00–8:40 am
11/16 – 11/20	17, 18, 19
11/23 – 11/27	Thanksgiving break
11/30 – 12/04	19, 20
12/07	Final exam: 12/10 11:15–1:45 pm

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.

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 at

http://www.stonybrook.edu/commcms/academic_integrity/index.html

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 University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.