

Syllabus for Physics 125: Classical Physics A (Spring 2018) at Stony Brook University

From the Undergraduate Academic Bulletin

PHY 125: Classical Physics A

First of a three-part sequence intended for physical-sciences or engineering majors. It focuses on the mechanics of point particles and simple oscillators, and emphasizes motion in one and two dimensions and the concepts of momentum and energy. Calculus is used concurrently with its development in MAT 125. Three lecture hours and one recitation hour per week. Not for credit in addition to PHY 121/123, PHY 131, or PHY 141. 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 4 on the mathematics placement examination

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

DEC: E

SBC: SNW

4 credits

Instructors

Lecture (MoWeFr 9:00-9:53am, Harriman Hall 137)

Course Instructor: Navid Vafaei-Najafabadi,

e-mail (For private communication, Reply in 24-48 hours):

navid.vafaei-najafabadi@stonybrook.edu

Office: Physics Building D101

Office hours (preferred method of contact): Wednesday and Thursday 2:30pm-3:30 pm

Recitation sections (starting 2nd week of classes)

R01 Wednesday 12:00 PM-12:53 PM PHYSICS P130 Michael Wilking/John Hobbs

R02 Friday 10:00 AM-10:53 AM PHYSICS P130 Giacinto Piacquadio

R03 Wednesday 10:00 AM-10:53 PM PHYSICS P130 Michael Wilking/John Hobbs

R04 Tuesday 11:30 AM-12:23 PM PHYSICS P127 Navid Vafaei-Najafabadi

Main Topics

The course will cover material presented in **Chapters 1 through 12** of the text book. Main topics include units, dimension and dimension analysis, vector, kinematics, Newton's laws and their applications, Gravitation and planetary motion, work, power, potential and kinetic energy, momentum and collisions, rotational kinematics and dynamics and equilibrium of rigid bodies.

You are responsible for all announcements made in lecture. It is recommended that you read the assigned text material before it is discussed in lecture.

Ingredients for Academic Success

Homework Every Saturday ten to eighteen online homework problems from each chapter will be presented via Mastering Physics servers. The usual deadline would be 11:59 pm on the following Saturday of the week. Homework represents the primary avenue of practice for the course material. Don't wait until the last minute to work on them!

Rules Regarding Homework:

- You may collaborate with your classmates on the homework if you are contributing to the solution. You must personally write up the solution of all problems.
- Do not forget that simply copying somebody's solutions does not help you in a long run (especially on the exam).
- You may (and are encouraged to) use the library and all available resources to help solve the problems. Use of Mathematica, other software tools and spreadsheets are encouraged.
- You should submit homework before the deadline. Homework submitted after the deadline will not be accepted for grading

Recitation sections

PHY 125 includes 4 recitation sections. They are taught by faculty and typically focus on helping students understand how to solve problems. Quizzes will be given in many of the recitation-section meetings and contribute to each student's recitation grade. **Note: there are no recitations in the first week of classes.**

The recitation instructors will maintain the following office hours:

R01/R03 (Wilking/ Hobbs): Wednesday 3:30 pm-4:40 pm in Physics Building D106/D139

R02 (Piacquadio): Friday 11:00 am-12:00pm in Physics Building D110

R04 (Vafaei-Najafabadi): Wednesday and Thursday 2:30 pm-3:30 pm in Physics Building D101

The office hours of the recitation instructors are intended as the primary avenue of support for students who need assistance with course material. Although a Help Room (room A-129 in the physics building) is available to help students, these rooms are primary for classes without recitation section.

Do not come to the Help Room or the office hours unprepared! Expect the staff and instructors to start out by asking you to explain, the "preparation by you" before coming to the Help Room to seek help. Do not expect them to help you on homework problems that you have neither looked at nor attempted. It's your job to be prepared by "knowing what you don't understand" before you come for help.

If you find you are still struggling to understand the course material consider taking advantage of resources provided by the university:

Student Success Resources:

A helpful resource is the "For Students" section linked from the Stony Brook homepage: <http://www.stonybrook.edu/for-students> as well as the Division of Undergraduate Education website: <http://www.stonybrook.edu/commcms/duel/index.html>.

Academic Success and Tutoring Center:

This important program opened in September 2013. Information can be found at: http://www.stonybrook.edu/commcms/academic_success/.

Required Material

1. Textbook: *Physics for Scientists and Engineers*, 4th edition, by D. Giancoli. The campus bookstore sells it in looseleaf form, packaged along with the access code for Mastering Physics.
2. All Course Information distributed via **Blackboard** (such as this syllabus and lecture notes). Check the **PHY 125.01(R01-R04)** Blackboard area! PHY 125-related information posted on Blackboard as "Announcements" will also be sent verbatim via email from within that Blackboard area to all enrolled students. It is University policy (<http://it.stonybrook.edu/news/articles/use-of-email-for-official-communication-policy-coming-this-fall>) that all course-related and other University email be sent to students at their official University email address, commonly: firstname.lastname@stonybrook.edu. It is your responsibility as a student to check your official email frequently. If you send email to your (lecture and/or recitation) instructor, you must use your University email address not some other "personal" email address.

You should also check the recitation section **PHY 125.01(R0X)** – X=1 to 4 depending on the section in which you are registered – on Blackboard for material related to your specific recitation section Blackboard area

3. **A calculator** that you know how to use well but must not be able to store formulas. The idea is that you use your calculator to calculate, not to act as a formula sheet during exams. Your calculator should have:
 - a. Addition, subtraction, multiplication, division, exponentiation;
 - b. Trig functions;
 - c. Log functions;
 - d. Square root;
 - e. The option of displaying numbers in scientific (power-of-ten) notation, e.g., 6.67384 E-11.Use the same calculator for homework and exams. Use of a smart-phone calculator is NOT allowed.
4. An account in the **Mastering Physics** system. You can buy (an access code for) this with the looseleaf textbook at the campus book store, or as a separate item from the bookstore, or online at <https://www.masteringphysics.com/site/login.html> You will need the **course ID** to connect to the assignments for this course; it is **MPVAFAEINAJAFABADI19478**.
5. **A “clicker”** from Turning Technologies (TT). You don’t need a separate one for this course; one TT clicker will serve for all Stony Brook classes. The use of the proper smartphone app in lieu of the physical clicker is also acceptable.

Grades

Final grades will be calculated based upon contributions (MT = midterm exam; FE = final exam; Rec = recitation section; HW = homework) weighted by the following percentages:

	MT	Clickers	HW	Rec	FE
Percentage	25	5	20	10	40

Exams

One midterm exam; Wednesday Feb 28, location TBD)

Final exam; Currently scheduled on May 9, 8:30-11:00 PM, location TBD (NOT our regular room)).

You are responsible for insuring that you can attend all exams at the scheduled days and times. An important part of your responsibility at the beginning of the semester is to make sure your schedule will allow for an orderly adherence to the class and exam calendars. If you miss an exam without a valid excuse that must be **documented in writing**, you will NOT be allowed to make up that missed exam. Your grade on it will be zero.

Clickers

In the lecture hall we use the electronic response system from Turning Technologies. Make sure you register your clicker for PHY 125 by the second lecture. You don’t need a separate one for this course; one TT clicker (“Response Card NXT” or “Response Card RF LCD”) will serve for all Stony Brook classes. See <https://it.stonybrook.edu/help/kb/buying-clickers>. You must obtain a “Turning Account License” and should use it to register your clicker device. You can register it here <https://account.turningtechnologies.com/account/>. If you do not already have an account, please use your stonybrook.edu email when registering. Once you are logged in, you can see that Student Store is the last link on the left side of the page. Usually you will want to buy the clicker bundle, which is the first choice on the page. The bundle comes with a clicker and a 4 year license to cover them for their full stay with us at SBU. If you already have a clicker, but they do not have a license, then you may wish to just buy a license, which is the second option.

The “school code” 4SBU is the one you need to enter (<https://it.stonybrook.edu/help/kb/purchasing-a-license-code-for-clickers>). Active links to these web pages should be available in the upper-left “gray” area of the **Blackboard PHY 125.01** home page.

NOTE: You can also use the virtual clicker app called “ResponseWare”.

Make sure to read the **Student FAQs** section of the DoIT clicker website, particularly on how to register your clicker for the class: <https://it.stonybrook.edu/services/clickers>

Academic Integrity

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 are required to report any suspected instances of academic dishonesty to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic integrity website at

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

Academic dishonesty will not be tolerated. In this course, the standards are as follows: In lecture, whenever a “clicker” question is posed, you may discuss it with your neighbors. **However, one person operating two or more clickers is cheating and will result in an Academic Dishonesty complaint being filed by the instructor(s) with the Academic Judiciary against the owners of all involved clickers.** You may discuss with your colleagues (other students or Help Room personnel) the “physics” of assigned homework problems, but you should not ask to be given nor give to others actual solutions to those problems. The reason for this is obvious. You only hurt yourself if you submit answers that you get from somebody else and don’t understand. In an exam in the lecture hall or a quiz in a recitation section, copying answers from another person or use of materials or communication other than what is allowed by the instructors will result in a claim of Academic Dishonesty being filed against you with a recommendation that the penalty be a final grade of **F** in PHY 125.

Americans with Disabilities Act

If you have a physical, psychiatric/emotional, medical or learning disability that may impact on your ability to carry out assigned course work, you should contact the staff in the Disability Support Services office [DSS], ECC (Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

<https://web.stonybrook.edu/newfaculty/StudentResources/Pages/DisabilitySupportServices.aspx>

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information go to the website

<http://www.sunysb.edu/ehs/fire/disabilities.shtml> .

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.

Posting and Updating of This Syllabus and the Schedule Calendar

This Syllabus will be posted on Blackboard. When, from time to time, it may be updated, all students will be notified by an Announcement posted in Blackboard and sent via email to your official University email address. Please make sure you’re looking at the most recent version: Check the first page of each one to see the date of the version you’re looking at!