

Syllabus for Physics 125: Classical Physics A (Spring 2016) at Stony Brook University

(Revised 1/21/2016)

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 HLL 137)

Mengkun Liu: mengkun.liu@stonybrook.edu. Office: B-105. Phone (631) 632-8175 (no voice mail: always try email first).

Recitation sections (starting 2nd week of classes)

R01 (Wed, 12:00PM-12:53 pm, P-116 physics): Prof. Averin,

R02 (Fri, 10:00AM-10:53AM, P-113 physics): Prof. Zahed

R04 (Tue, 11:30AM-12:23PM, P-116 physics): Prof. Liu

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.

Course Organization (in 4 parts)

Homework Every Sunday 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 that coverage of that chapter was completed in lecture. Don't wait until the last minute to work on them. **Very important:** Doing all the homework yourself is crucial for success in PHY 125. We know from past semesters that not doing homework yourself is the main ingredient in a recipe for getting a poor grade! You cannot master the course material if you do not do the homework yourself. Most of the questions in the mid-term and final exams are related to the homework questions. A few questions will only be mentioned in the lecture.

You are responsible for all announcements made in lecture.

You should read the assigned text material before it is discussed in lecture.

Recitation sections (R01, R02, R04) [R03 was cancelled]

PHY 125 includes 3 recitation sections. They are taught by faculty and typically focus on helping students understand how to solve homework 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.**

Help Room (A-129 or A-131 physics building)

The schedule (Monday- Friday during most workday hours) for the A-129 and A-131 Help Room will be posted electronically on the PHY 125.01 Blackboard area and physically on the A-129 or A-131 door by the second week of classes. Make sure you take advantage of the free assistance the Help Room provides before you find yourself getting into trouble in PHY 125 and then, maybe, are considering hiring a tutor. **When you go to the Help Room, take the textbook with you!**

Do not come to the Help Room unprepared. Expect the Help Room staff to start out by asking you to explain, in detail, 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.

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). 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: firstname.lastname@stonybrook.edu. It is your responsibility as a student to check your email at least once per day at this address. If you send email to your (lecture and/or recitation) instructor, you must use your University email address not some other "personal" email address.
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 <http://www.pearsonmylabandmastering.com/northamerica/masteringphysics/> You will need the **course ID** to connect to the assignments for this course; it is **MLIU2016**.
5. A "clicker" from Turning Technologies (TT) (available in the university bookstore). You don't need a separate one for this course; one TT clicker will serve for all Stony Brook classes.

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 1	MT 2	HW	Rec	FE
Percentage	15	15	15	15	40

Exams

The two midterm exams; March 7, Monday and April 11 Monday (The same room as the lecture hall)

Final exam; May 11 th 8:30 pm – 11:00 pm (TBD).

You are responsible for insuring that you can attend all exams at the scheduled days and times. No excuses will be allowed for any foreseeable circumstance. An important part of your ``Preparation by you'' duties at the beginning of the semester is to make sure your own life schedule will allow for an orderly adherence to the Schedule Calendar for PHY 125. 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 before the first lecture, which begins at 9:00 am on Monday, 25 January. 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://store.turningtechnologies.com/> . The "school code" 4SBU is the one you need to enter. Active links to these web pages should be available in the upper-left ``gray'' area of the Blackboard PHY 125.01 home page. It is your responsibility to obtain the proper clicker and to register it properly before the second week of the lecture. The course faculty cannot do this for you. NOTE: PHY 125 does NOT use the virtual clicker app called ``ResponseWare''. You do NOT need "ResponseWare" and should NOT register for it.

Review before exams

Some brief review will be done during each recitation section meeting, especially in the one preceding each course-wide exam. As shown in the Schedule Calendar, there are two midterms and one final exam that will be given. Before each exam the lecturer (Prof. Liu) will give brief reviews at the lectures before the exams and will provide useful, reasonable indicators for the kinds of problems that will be on the exams. Exam problems will cover a range from ``easy'' to ``difficult''.

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 and the Schedule Calendar will be posted on Blackboard. When, from time to time, they are 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!