

# PHY 122.01, Spring 2024 Syllabus

This course of PHY 122, Section 01, Physics for the Life Sciences meets Tuesday and Thursday from 11:30 am to 12:50 pm in Javits 100.

The lectures will be recorded and the slides will be posted on Brightspace. The lecture recording will be automatically posted by the university, and should be available around 2:00 pm on the day of the lecture.

This course will cover Chapters 17-30 of the electronic textbook described below.

Two midterm exams will be given on February 19<sup>th</sup> from 8:30 pm to 9:50 pm and March 28<sup>th</sup> from 8:30 pm to 9:50 pm, and a final exam will be given on May 9<sup>th</sup> from 11:15 am to 1:45 pm. The registrar's policy is that students are responsible for avoiding exam conflicts, and exceptions will not be granted in this course. This class is taught in an on-line and an in-person format covering the same material. The grading criteria for the both sections is the same.

## Instructors

- Prof. Clark McGrew <[clark.mcgrew@stonybrook.edu](mailto:clark.mcgrew@stonybrook.edu)>
- Prof. Valerio Dao <[valerio.dao@stonybrook.edu](mailto:valerio.dao@stonybrook.edu)>
- Prof. Richard Lefferts (laboratory) <[richard.lefferts@stonybrook.edu](mailto:richard.lefferts@stonybrook.edu)>
- Office hours for the lecture instructors will be held online through the ZOOM link in the combined course Brightspace page (PHY122.00), or, by appointment, in our offices. The instructors will also be available in the help-room (see the help-room schedule).

## Brightspace

**Most of the course administration will be done via Brightspace. For the in-person course there are 4 separate Brightspace pages that you will have to access:**

- PHY122.00 to access section-independent information, such as the homework, the course calendar, recorded lectures and lecture notes, and the zoom link for the TA and Professors' office hours
- PHY122.01 to access section-specific information, such as clicker question scores (more below), and exam-scores.
- The main lab course Brightspace page, run by Prof. Richard Lefferts <[richard.lefferts@stonybrook.edu](mailto:richard.lefferts@stonybrook.edu)>
- A lab course Brightspace run by your lab TA

Please make sure that you have access to your Stony Brook Brightspace account, that these courses are listed there (in 1st week of classes for sure), and that the email address listed in your Brightspace account is one that you monitor. You have to register for the mastering physics homework and your "clicker" via Brightspace; see below.

# Calendar

The calendar shows the material that will be covered in each lecture.

## Firsts for this Semester:

- First lecture: **1/23/2024**
- First *Clickers* for credit (clicker must be registered in Brightspace): **1/30/2024**
- First *Homework* for class due (submitted online): **01/30/2024**
- First *Pre-Lecture Homework* due (submitted online): **1/30/2024 before 11:30 am**
- First week of *Lab Sessions*: **1/29/2024**
- First day the Help Room is staffed: **1/29/2024**

## Format of course

**Class Lectures** will provide an introduction to the material, problem solving practice, and short answer questions to allow you (and the instructor) to ascertain your understanding of the material just after it is presented. You should prepare for the lectures by reading the corresponding section of the e-text, and completing the pre-lecture homework assignment. Lectures are recorded on Tuesday and Thursday, and are available for viewing after they are recorded on the course Brightspace page. The lecture slides will be available on brightspace.

**Required clickers (or app)** are from PointSolutions. The clickers are available in the campus bookstore. More information is below.

**Required Homework problems** will be assigned using an online system called *Mastering Physics*. Additional information is given in the Homework section below.

You should plan to use a calculator for the lectures. It should be able to do trig functions, square root, log, exponential notation. You do not need a fancy graphing calculator. You will also need your calculator for the exams. Your calculator is an important tool for the course, and you should be familiar with it. Calculators may not be shared in the exams. You may not use the calculator function of a mobile phone in the exams.

There are no recitations. The lecture functions as a recitation, insofar as you are guided towards learning how to solve problems on the material in the lecture notes and in the homework problems

## Laboratory

The laboratory is mandatory. There are ten lab experiments during the semester. All lab grades count; none are dropped. If you have an excused absence for missing your lab, you must arrange to make up the lab with the course TAs.

A lab write up that completes all of the items listed in the manual for each individual lab is due one week from the date of each lab. More information about the format and grading of the lab reports will be given by your laboratory instructor.

**All students are required to complete all labs. Any student receiving a score of zero on more than three labs will fail the laboratory. While the grades for the lecture and laboratory will be averaged to find your final grade, failing either part of the course will result in failing the entire course.**

## Clickers

The bookstore sells clickers or you may download the PointSolutions app for iPhone or Android. Whether you buy one new or reuse one from a previous semester you need to register it through Brightspace. Follow the instructions (in the Black Board documents area) to register your clicker. If your clicker breaks or you lose it, you must register the replacement again. We will have clicker dry runs (i.e. no credit) to check the registration process. All clicker problems must be sorted out by the first date for which clickers count for credit, as listed above. Campus support provides information to help at <https://it.stonybrook.edu/services/clickers>. **We will not go back and retroactively transfer scores because of clicker problems.** This is in part why we drop a number of clicker days (see below).

During the lecture, when you are working on one of the clicker questions, you may discuss the problem quietly with your immediate neighbors. This is intended to help you understand the problem and solve it. "The answer is C" is not the kind of discussion intended here - you deprive yourself of the opportunity to learn and prepare yourself for the exams. You will receive full credit even if you enter the wrong answer, so please try to answer the questions based on your own understanding. Your answers are only used by the instructors to determine which questions have given the students the most difficulty.

**One person operating more than 1 clicker/app (i.e. doing your friend's clicker/app for them) or answering clicker questions when not in class is clear academic dishonesty, and will result in a report to the Academic Judiciary and a reduced grade for the owners of both clickers.**

## Homework and Electronic Textbook (etext)

Homework problems will be assigned using an online system called Mastering Physics (see below). There is a link on the course Brightspace page through which you access and register for Mastering Physics. There will be two sets of online problems assigned for each lecture. The pre-lecture problems count as extra credit. If you have done the reading, they should take less than 10 minutes and must be completed before the lecture starts. The post-lecture problems are expected to take about 60 minutes. The post-lecture problems are due a few days after the lecture, so please check Mastering Physics for details. An additional adaptive problem set may be assigned based on the answers given to the post-lecture problems. The adaptive problems are triggered by wrong answers given during the main problem set, and allow you to make up for wrong answers provided during the set. The adaptive problems count as extra-credit (If you are not assigned adaptive problems, you will automatically receive the extra-credit).

Problem solving is an important skill to be learned, and can only be learned by doing. We recognize that solutions to many of the homework problems can be on-line, but you are strongly encouraged to solve the homework problems on your own. While you should solve the individual homework problems independently, working with your peers is a powerful way to enhance your understanding and is strongly encouraged.

**Mastering Physics and Electronic Textbook:** You must have a Mastering Physics license for the course. This is obtained via the Brightspace link for the course. Detailed instructions can be found in the “Documents” section of the PHY122.00 course. This semester, we will primarily be following “College Physics, a Strategic Approach”, 4th edition, by Knight, Jones, and Field.

## Getting help

To help you with questions related to your homework problems and the laboratory, a help-room will be available (Physics A-132 and online through ZOOM). The zoom link can be found on the PHY122.00 Brightspace, and the schedule will be posted before the 2nd week of classes.

## Exams

**Two midterm exams** and a **final exam** will be given. See the dates at the top of the syllabus. You have to make sure there are no conflicts in your schedule – we will not grant makeup exams. The registrar's policy is that students are responsible for avoiding exam conflicts, and exceptions to the University policy will not be granted in this course. To pass the course, you must have a score for at least one of the two midterms and the final exam. If you cannot take a midterm due to exceptional circumstances (documented illness, death in the immediate family, etc), discuss this with the instructor as soon as possible. We will increase the weights of the other parts of the course accordingly, but, absent exceptional circumstances, will not have make-up exams. If you miss the final, or more than one midterm, with a valid excuse, you will receive an Incomplete in the course and you must contact the instructors to schedule an exam as promptly as possible after the end of the semester. Taking at least two exams is required to pass the course. The exams are scheduled by the registrar during the common exam periods for PHY122. You will need to show your University identification card to the proctors, provide a College Board approved calculator and have a sheet of handwritten notes.

## Grades

Your final grade will be based on the following.

- 15% Homework
- 10% Clicker score
- 15% **Each** of two midterms
- 25% Labs
- 20% Final Exam

Notes:

- The clicker score grade is based on providing an answer during lecture (participation). The answer does not need to be correct.
- The clicker score grade is based on providing a correct answer while you watch the video.
- The lowest 5 clicker scores will be dropped when grading. No homework or lab scores will be dropped.
- Up to 5% of extra credit is be available based on completing pre-lecture and adaptive homework assignments
- You must independently pass both the laboratory and the lecture portion of the class. Failing either will cause you to fail the class.

The grading scale will be adjusted to reflect the overall class performance.

- 90% : Guaranteed to be an “A”
- 75% : Guaranteed to be a “B” or better
- 60% : Guaranteed to be a “C” or better

## Standard University Policy

**A. Student Accessibility Support Services (SASC):** If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at [sasc@stonybrook.edu](mailto:sasc@stonybrook.edu). They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website:

<https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guide-disabilities> and search Fire Safety and Evacuation and Disabilities.

**B. 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 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](http://www.stonybrook.edu/commcms/academic_integrity/index.html)

**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. Students not following University policies during class will be deemed to be “disruptive” (e.g. if the University chooses to require certain public health policies, the policies must be followed).

**D. Student Participation in University-Sponsored Activities:** Students may have to miss class as a result of their participation in an event or activity sponsored by the University. This course will operate in compliance with the University policy set forth at: [https://www.stonybrook.edu/sb/bulletin/current/policiesandregulations/policies\\_expectations/participation\\_univspnsored\\_activities.php](https://www.stonybrook.edu/sb/bulletin/current/policiesandregulations/policies_expectations/participation_univspnsored_activities.php). In particular, you should notify us in advance, but definitely before the final date of the 'add/drop' period, of your intention to miss any class, exams, or labs that will arise due to such activities. At that time, we can discuss how you will be able to secure the work covered.

**E. Religious Holidays:** This course will operate in compliance with the University's policy regarding religious holidays, set forth at: [http://www.stonybrook.edu/commcms/provost/faculty/handbook/employment/religious\\_holidays\\_policy.php](http://www.stonybrook.edu/commcms/provost/faculty/handbook/employment/religious_holidays_policy.php). In particular, you should notify us in advance, but definitely before the final date of the 'add/drop' period, of your intention to be out for religious observance. At that time, we can discuss how you will be able to secure the work covered.

### **VIII. Some Important Tips for Success:**

- Physics depends heavily on mathematics. At this level, you'll need working familiarity with trigonometry and algebra, and a preparation to understand the ideas of calculus. So it is very important for your success that you meet the course prerequisites. Actually, calculus was invented to solve physics problems, and so we hope this course helps you understand some of the math you may have struggled to see the point of.
- Be familiar with your calculator, and use the same one for exams and the lab that you use for homework. You don't want to be spending valuable exam time figuring out how to use your calculator!
- Keep up to date with the material. The class has to move fast to cover everything, and most material builds on earlier topics.
- Read the book along with the lectures, and turn in as many of the homework.
- University guidelines state: "Students are expected to be 'on task' for 40-45 clock hours per credit, per semester. 'On task' pertains to all instructional activities (exams, homework, lectures, discussions, etc.)." That works out to ten to twelve hours per week for this four-credit course.
- Do the homework! Don't just use Chegg, Google, Bing, Course Hero, etc. to look up the answer. It may be a quick way to finish the assignment, but it won't nourish your understanding, and it very much will not help you to retain the concepts. Most of our exam problems are going to be very similar to the homework and the survey questions. If you've only looked at the solutions before the exam, you will have trouble with the exam. If you have solved the problems, you will be prepared.
- Most of the course administration will be done via Brightspace. Please make sure that you have access to your Stony Brook Brightspace account, that this course is listed there, and that the email address listed in your Brightspace account is

one that you monitor. The detailed course calendar, and lots of other useful information is available in Brightspace

- We encourage you to visit us in our on-line office hours, email us with questions, and visit the on-line Help Room!