



PHY 131.90: Classical Physics I (studio)

Physics and Astronomy

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Course Information

Course Title: Classical Physics I (studio)

Course Designator, Section: PHY 131.90

SBC Designation: SNW

Credits: 4

Pre-requisites, Co-requisites: One of: MAT 125, MAT 131, MAT 141, or AMS 151

Semester, Year: Fall, 2026

Modality: In-person

Mode of Instruction: Studio

Meeting Times: Monday: 2:00PM - 3:20PM
Wednesday: 2:00PM - 3:55PM
Friday: 2:00PM - 3:50PM

Exam Times: Midterm 1: Wednesday, Sept. 23, 8:15 PM - 9:35PM
Midterm 2: Tuesday, Nov. 3, 8:15 PM - 9:35 PM
Final Exam: Thursday, Dec. 10, 2:15 PM - 5:00 PM

Classroom Location: Physics building, room P-118

Instructor Information

Instructor: **Name:** Ross Corliss
Email: ross.corliss @ the usual. (for best results, include "PHY131.90" in the subject line)
Office Hours: TBA
Office Location: Physics C-103

Teaching Asst. **Name:** Jake Shin
Email: jake.shin @ the usual.
Office Hours: TBA
Office Location:

Teaching Asst. **Name:** TBD
Email: TBD
Office Hours: TBA
Office Location:

Required Course Materials

1. **A Subscription to Pearson | Mastering Physics:** This is mandatory and is purchased and accessed via the "Mastering Physics" link in the Table of Contents of the course Brightspace page. Homework, reading, and supplemental materials will be assigned through that platform. A digital copy of the textbook, Douglas C. Giancoli, [Physics for Scientists and Engineers](#), 5th ed., ISBN-13: 9780137488179, is included in your Pearson subscription. Before you proceed, please read the "Mastering Physics FAQ & Troubleshooting" section of the syllabus.
2. **Scientific calculator:** Classwork, homework, labs, and exams will assume you have access to a calculator that has trig functions (sin, cos, tan). Devices that can access the internet (eg a phone) are **not permitted** during exams and are discouraged during class.
3. **A device that can access the internet:** Some course activities will require a device with internet access. You are expected to bring your device with you to every class. If you do not own such a device, you may borrow one through Stony Brook's [Student Laptop Loaner Program](#).

Online Course Materials

1. [Brightspace](#) will be used to provide course materials and communicate with the class. Grades will be posted there.
2. [Vevox](#) will be used to ask "clicker questions" periodically during lectures. A link to this tool is available on Brightspace.
3. [Desmos](#) is a web-based graphing tool which will be especially useful during labs. A link to this tool is available on Brightspace.

Course Description

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.

This is the studio version of the course, which combines lecture and recitations sessions, and is integrated with the laboratory component, [PHY 133](#). Students in this course will attend interactive lectures, participate in group problem-solving, contribute to class-wide discussion, and perform lab experiments that explore the concepts covered in the course.

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.

Two *Midterm Exams* and one *Final Exam* will be given at the times noted in the [Course Information block](#) above. The registrar's policy is that students are responsible for avoiding exam conflicts. Exceptions to this policy will be considered only with serious and adequately documented reasons.

Learning Objectives

By the end of the semester, students will be able to:

1. analyze one- and two-dimensional motion using kinematic equations, graphs, and vectors to describe trajectories involving displacement, velocity, and acceleration.
2. apply Newton's laws and conservation principles to predict the behavior of objects in mechanical interactions, including collisions, oscillations, and rotational motion.
3. apply thermodynamic principles to describe the internal energy, work, and heat transfer changes in gas systems.
4. apply static and dynamic principles of fluids (Pascal's, Archimedes', Bernoulli's) to describe situations involving pressure, buoyancy, and flow.
5. apply experimental techniques, analyze data using mathematical and graphical techniques, and assess experimental uncertainty, in probes of classical physics principles, and communicate findings of those experiments.

Stony Brook Curriculum (SBC) Learning Objective

SNW (Study the Natural World):

1. Explain the methods scientists use to explore natural phenomena including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of data analysis or mathematical modeling.
2. Explain the application of scientific data, concepts, and models in one of the natural sciences.

If You Have a Question or Need Help

- **Emotional, physical, or medical challenges:** Contact the **Student Support Team**, and please **email the instructor** to alert me if you may need accommodations
- **Questions about the material:** Ideally, ask these in class! If you have a question, you're almost certainly not alone. Or worse, someone else might not understand, and might not even realize they're lost. But otherwise:
 - Go the **Physics Help Room** (A-129, A-131) 9:00 AM - 6:00 PM, any weekday, for free help.
 - Attend TA or instructor **office hours**, or reach out to them via email.
 - Reach out to the [Academic Success and Tutoring Center \(ASTC\)](#), which can schedule free one-on-one and small group tutoring starting August 31.

- Follow the links in the **Pearson eText** for flashcards, video, practice tests, and other learning resources.
- Visit [Professor Hemmick's YouTube](#) channel for some excellent problem-solving videos (look for "Solving Physics I").
- Discuss the issue with an LLM (see the course's [AI Policy](#), below).
- **Questions about the labs:** Ideally, ask these in class! Since lab work is always due at the end of the period, you should never have take-home lab work to worry about. If you have questions about the underlying material, see the previous bullet.
- **Questions about exams, grading, logistics:** Reach out to the instructor via email.

Class Structure

The registrar has defined the course meeting times as Monday Lecture (PHY131.90), Wednesday Recitation (PHY131.R90), and Friday Laboratory (PHY131.L90). We will not differentiate between Monday and Wednesday structure, save that Wednesday is a longer session.

Lecture Sessions

Lecture sessions will alternate between lecture-like and recitation-like activities, including guided discussion of the material, physical demonstrations, example problems, and group work. Students may be asked to present their solutions to the class (these presentations are not graded, and assistance will be available). Clicker questions will be interspersed, and comprise 10% of the course grade. Sessions will not be livestreamed.

Lab Sessions

Lab sessions will take place on most Fridays (all lab sessions are Fridays, not all Fridays are lab sessions). The lab schedule and experimental manuals are posted on the [PHY 133.90 Studio Labs webpage](#). Lab assignments are expected to be written by hand during these sessions and turned in at the close of each one. They comprise 25% of your course grade. There are two extra lab sessions at the end of the semester in which you may make up missed labs.

Food is not permitted during lab sessions. Drinks are not permitted unless they are in sealable containers.

Assessments

The assessments used to assign your grade in this course are listed below. To pass this course, you must have a nonzero grade for at least eight of the ten lab sessions, the final exam, and at least one of the two midterms. If you do not satisfy the exam requirement, you will receive an incomplete, and will need to contact the instructor to resolve it. If you do not satisfy the lab requirement, you will receive an automatic F in the course.

Assessment/Assignment/Exam	Points or Percentage	Due Date
Homework Assignments	10	Sundays, 11:59 PM
Clicker Questions	10	in class
Lab Assignments	25	in class
Midterm 1	15	8:15 PM 9/23/26
Midterm 2	15	8:15 PM 11/3/26
Final Exam	25	2:15 PM 12/10/26
Total	100	

Assessment Descriptions

Homework

Homework is completed online on the Mastering Physics platform. Each assignment is also linked directly via Brightspace. Assignments are due on Sunday, 11:59 PM, every week. A penalty of 0.5% per hour (12% per day) is applied to any parts of the homework not turned in by that deadline. The lowest homework grade will be dropped.

Other, ungraded assignments may be made available. These will be clearly marked as optional.

Clicker Questions

Lecture sessions will include multiple-choice questions, which must be answered within a short time window of when they are asked in-class. Students receive 1 point for answering the question at all, and a second point for the correct answer. Clicker questions cannot be answered before or after the session. The lowest clicker grade (session) will be dropped.

Lab Assignments

Lab assignments are completed in class. Details will be provided in each session, but in general all Analysis and Questions items must be addressed. Grading is based on correctness of the analysis, not agreement with the expected results. Up to two missing lab assignments may be made up in special sessions at the end of the semester. Any lab assignments not made up will result in a full letter grade reduction of your grade in addition to a zero on that assignment. Students who are missing more than two lab grades will receive an automatic F for the course.

Exams

Exams are administered in-person at the times noted above. The registrar's policy is that students are responsible for avoiding exam conflicts. Students who miss a midterm for a serious, well-documented reason will be granted an excused absence. Students who miss the final, or both midterms, will receive an Incomplete for the course.

Response Time and Feedback on Assignments

Grades and feedback on all assessments will generally be available within one week of the due date.

Grade Scale

The grading thresholds used in this course are: A 92-100; A- 89-91; B+ 86-88; B 80-85; B- 77-79; C+ 74-76; C 68-73; C- 65-67; D+ 62-64; D 55-61; F 0-54. The thresholds may be lowered, but will not be raised (eg if you receive a 77 you will be guaranteed a B- or better).

Additional information can be found in the [Undergraduate Grading Policy](#).

Course Schedule

We will cover a lot of material in this course, and this schedule may shift due to unforeseen circumstances. Changes will be posted on Brightspace and noted in class.

Date	Topic	Pre-Class Reading
Monday, August 24	1: Introduction, Measurement, Estimating; 2: Describing Motion: Kinematics in 1D	1.1-1.7
Wednesday, August 26	2: Describing Motion	2.1-2.8
Friday, August 28	LAB #1: Acceleration – Picket Fence	
Monday, August 31	2: Describing Motion, 3: Kinematics in Two Dimensions; Vectors	2.7-2.8, 3.1-3.5, 7.2
Wednesday, September 2	3: Kinematics in Two Dimensions	3.6-3.9
Friday, September 4	LAB #2: Projectile Motion	
Monday, September 7	Labor Day: NO CLASS	
Wednesday, September 9	3: Kinematics in Two Dimensions; 4: Dynamics: Newton's Laws of Motion	4.1-4.8
Friday, September 11	LAB #3: Newton's Laws – Atwood's Machine	
Monday, September 14	4: Dynamics: Newton's Laws of Motion	

Date	Topic	Pre-Class Reading
Wednesday, September 16	5: Using Newton's Laws: Friction, Circular Motion, Drag Forces	5.1-5.6
Friday, September 18	LAB #4: Centripetal Force	
Monday, September 21	6: Gravitation and Newton's Synthesis	6.1-6.9
Wednesday, September 23	In-class Review. Midterm 1, 8:15 PM - 9:35 PM	
Friday, September 25	LAB #5: Torque and Statics	
Monday, September 28	7: Work and Energy	7.1-7.4
Wednesday, September 30	7: Work and Energy	
Friday, October 2	LAB #6: Conservation of Linear Momentum	
Monday, October 5	8: Conservation of Energy	8.1-8.8
Wednesday, October 7	9: Linear Momentum	9.1-9.2
Friday, October 9	9.3: Collisions and Impulse	9.3-9.10
Monday, October 12	Fall Break: NO CLASS	
Wednesday, October 14	10: Rotational Motion	10.1-10.3, 10.7-10.8
Friday, October 16	LAB #7: Conservation of Energy	
Monday, October 19	10.4: Torque	10.4-10.6, 10.9-10.10
Wednesday, October 21	11: Angular Momentum; General Rotation	11.1-11.9
Friday, October 23	LAB #8: Fluids	
Monday, October 26	12: Static Equilibrium; Elasticity and Fracture	12.1-12.8
Wednesday, October 28	13: Fluids	13.1-13.6
Friday, October 30	LAB #9: Simple Harmonic Motion	
Monday, November 2	13: Fluids, Review	13.7-13.14

Date	Topic	Pre-Class Reading
Tuesday, November 3	No class (it's Tuesday), but Midterm 2, 8:15 PM - 9:35 PM	
Wednesday, November 4	14: Oscillations	14.1-14.5
Friday, November 6	LAB #10: Sound	
Monday, November 9	14: Oscillations	14.6-14.8
Wednesday, November 11	15: Waves	15.1-15.11
Friday, November 13	First Lab make-up date	
Monday, November 16	16: Sound	16.1-16.9
Wednesday, November 18	17: Temperature, Thermal Expansion, and the Ideal Gas Law	17.1-17.10
Friday, November 20	Second (final!) Lab make-up date	
Monday, November 23	18: Kinetic Theory of Gases	18.1-18.8
Wednesday, November 25	Thanksgiving: NO CLASS	
Friday, November 27	Thanksgiving: NO CLASS	
Monday, November 30	19: Heat and the First Law of Thermodynamics	19.1-19.10
Wednesday, December 2	20: Second Law of Thermodynamics	20.1-20.11
Friday, December 4	Review	
Monday, December 7	Review	
Thursday, December 10	Final Exam, 2:15 PM - 5:00 PM	

Student Success Resources:

How to Be a Successful Student in This Course

There are multiple resources, university offices, and help desks that are available to assist you with everything from advising, tutoring, accessibility and much more.

Review some Academic Success Strategies and visit the [Student Resources page](#) for links to resources on campus.

- Log into Brightspace regularly: If you make a habit of logging in daily you will not miss any announcements, and will spot any deadlines you might have overlooked.
- Use the homework: Think of homework as independent practice with the material, not simply as a race to submit correct answers. Successful students will start working on the material well before it is due to allow time to actively engage with the material, discover questions they may wish to ask, and to allow flexibility if they encounter issues outside of class which cause unexpected delays.
- Ask questions: Attend office hours, or visit the Physics Help Room, or discuss tricky issues with an LLM (see the course [AI Policy](#)).
- Seek help early: If things are starting to get away from you, either in the course or outside, reach out to the instructor, TAs, and the resources below.

Wellness & Support Statement

Stony Brook values student well-being, including mental health, and recognizes that a variety of factors can impact emotional wellness and academic success including stress, anxiety, depression, substance use, sexual violence, family or relationship concerns, and political conflict. [Resources are available](#) if you experience challenges or wellness concerns that affect your ability to be successful in class, and you are encouraged to reach out for help when you need it.

In the event of a short-term absence from class, students are encouraged to communicate immediately and work directly with instructor. However, if a student is struggling with an extended absence due to hospitalization, family illness or death, they are encouraged to reach out to the Student Support Team.

Technical Requirements and Assistance

[Brightspace](#) is Stony Brook University's digital learning environment. It is used for the facilitation of communications between faculty and students, submission of assignments, and secure posting of grades and feedback in your courses. To access Brightspace, go to mycourses.stonybrook.edu and use your SBU NetID and password. If you are unsure of your NetID, visit [Finding Your NetID and Password](#) for more information.

Sometimes submitting coursework via a tablet and/or mobile device can be challenging. Computers equipped with the appropriate software are available for use at the various [SINC site computer labs](#). Both physical and virtual labs are available. You can also borrow a computer through [SBU's Laptop Loan Program](#).

Visit the [Technical Requirements page](#) for additional information regarding hardware and software options.

Please use the following information if you need technical assistance at any time during the course or to report a problem with Brightspace:

Brightspace Support via SUNY Helpdesk

- Phone: 1-844-673-6786
- Submit a [ticket or chat online](#)

Stony Brook University: Academic Technology Services

- Phone: 631-632-9800
- Email: AcademicTechnologies@stonybrook.edu

Course Policies

Privacy Policies

This course employs various educational technologies to enhance the learning experience. Links to the privacy policies of these tools are available on the [Syllabus Addendum webpage](#).

AI Policy

Large Language Models (LLMs) such as ChatGPT exist. Outside of the classroom, it is impossible to prevent their use, and so this class does not forbid them.

- **Homework:** You are permitted to use these tools on your homework but be aware that it is a powerful tool, but can be an incredible impediment to learning. There is a spectrum of usage cases, from best idea to worst.
 - Good Usage: After giving a serious try on a homework problem, you may then use AI to discuss the problem. It can walk you through whichever parts you got lost on, and can work with you, untiringly, until you feel you understand -- and it can let you know when you have the idea right! You can even ask it to ask you another problem, so you can check your understanding.
 - Bad Usage: We cannot prevent you from using AI to give you the answers. This will guarantee you good grades on the homework (10% of your grade), but will not help you practice your own understanding, and will make you less prepared for the exams (55% of your grade).
- **Lab assignments:** You are **not permitted** to use AI during lab sessions.
- **Exams:** You are **not permitted** to use AI during exams. Electronic devices other than scientific calculators (see [Required Course Materials](#)) are not permitted. Attempting to circumvent this rule constitutes a violation of the [University Academic Integrity Policy](#) and can result in a referral to the academic judiciary.

Attendance Policy

The [Clicker](#) and [Lab Assignment](#) components of this course require your presence in class.

Late Work Policy

Late work policies are described per-assessment, in the [Assessment Descriptions section](#). Homework will be accepted late for reduced credit. Lab assignments will not be accepted after the end of the relevant lab session. Clicker question responses will not be accepted after the question window has closed.

Make-up sessions and the 'drop lowest' grading scheme are designed to account for unforeseen issues, illness, etc. Exceptions will only be considered in serious, well-documented cases.

Incomplete Policy

Students who have a missing grade for the final exam or for both midterms will automatically receive an incomplete. Details are described in the [Assessments](#) section.

Under emergency/special circumstances, students may also specifically petition for an incomplete grade. Circumstances must be documented and significant enough to merit an incomplete. If you need to request an incomplete for this course, contact the instructor for approval as far in advance as possible. Additional information can be found in the [Undergraduate Incomplete Policy](#).

Bibliographical Information/Reference List

A digital copy of Douglas C. Giancoli, [Physics for Scientists and Engineers](#), 5th ed., ISBN-13: 9780137488179, is included in the required Pearson subscription.

Mastering Physics FAQ & Troubleshooting

- How do I register? Follow the Mastering Physics link in the Brightspace content page and follow the instructions there. To obtain credit for the homework you must correctly enter your Stony Brook student identification number when registering for the mastering physics course, and your name on the Mastering Physics roster must match your name in the Brightspace roster.
- What is the course ID? If you follow the registration instructions, you will not be asked for a course ID.
- I have a subscription already, do I need to buy a new one? If your subscription does not expire before the end of this course, you do not need to purchase a new one.
- I am not sure if I want to stay in this course. Can I put off buying a subscription? Yes. You can select temporary access when you sign up. If you decide to commit to the course, follow these [instructions on upgrading from temporary to permanent access](#).
- What subscription should I choose? I don't know. You definitely want access that lasts the entire semester. You may also wish to consider whether you will want access for future semesters (PHY132 studio often uses Pearson, and other courses in your curriculum may as well).
- I am having problems signing up/signing in/using the site. First, make sure you are enabling pop-up windows from the site. Try logging in in a private/incognito browser

and see if the issue persists. Describe your specific issue clearly in a search engine and look for advice there. If you are still having trouble, contact [Pearson Technical Support](#). If the issue is not quickly resolved, let the instructor know.

University Policies

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, Stony Brook Union Suite 107, (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.

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, visit [Environmental Health and Safety](#).

Academic Integrity Statement

Each student must pursue their 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. Faculty in the Health Sciences Center (School of Health Professions, 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](#).

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. 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.

Accessibility

Stony Brook University is committed to ensuring a supportive, inclusive, and equitable learning environment for all members of our community, which includes upholding the principles of [Title II of the Americans with Disabilities Act \(ADA\)](#). As a student in this course, it is important to recognize your role in ensuring that all classmates, including those who use assistive technologies, can fully engage with and comprehend the course content. Therefore, any digital materials you create and share, such as assignments, presentations, or shared documents, must

be designed to be digitally accessible using the most up to date version of the [WCAG 2.1 Level AA guidelines](#). Accessible practices include, but are not limited to, providing alternative text for images, using clear heading structures, and ensuring captions for any video or audio you incorporate. Guidance and assistance in making your digital content accessible can be found on the [Accessibility Resources for Students](#) page. For additional support, please visit [Deque University](#).

Understand When You May Drop This Course

If you need to drop or withdraw from the course, it is your responsibility to be aware of the tuition liability deadlines listed on the registrar's [Academic Calendar](#). Before making the decision to drop/withdraw you are welcome to contact me to discuss. You should also review the [Undergraduate Course Load and Course Withdrawal Policy](#). If you do leave the course, kindly let me know.

Course Materials and Copyright Statement

Course material accessed from Brightspace, Zoom, Echo 360, VoiceThread, etc. is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.