PRINCIPLES OF PHYSICS 1

Note: since this syllabus is so long, the Canvas syllabus page will have in-page links to jump between sections; a link to this PDF will also be included near the top of the Canvas page

Course Information

Course Prefix and Number: PHYS 2211
Semester: Fall 2026
Lecture sections: A/HP, B, C, D, E, R, RBS, QH
Lab Sections: W01-W42, HPL, RL, RBL, QHL

Welcome to **Principles of Physics 1**. This is a calculus-based introductory mechanics course that uses computational methods in the lab. We'll be using **Canvas** as the hub for everything in the course: policies, communication, grades, etc. There are many **useful resources** for this course buried in the navigation menu on the left, so we encourage you to poke around and explore.

- Please read the **Syllabus** (this page) in its entirety.
- Course topics and assignments can be found in **Modules** organized on a week-by-week basis.
- Use **this online form** to request a GPS excused absence.
- Frequently asked questions are compiled and answered in the **FAQ** page (linked in the "Getting Started" module).

Course Description (from OSCAR)

An introductory course which will include mechanics (kinematics, dynamics, work and energy, momentum and collisions, and rotational motion and statics), and may also include oscillations and computational methods. This is a calculus-based course.

PHYS 2211 TL;DR

Administrative Questions:

- All general administrative questions go to the **Course Coordinator (Dr Alicea)**. This includes requests for extensions and excused absences.
- Administrative questions about the **remote sections** (Section R/RL for students at GTE, and section RBS/RBL for students in Barcelona) go to Dr Darnton.
- Administrative questions for the **dual enrollment section** (Section QH/QHL) go to Dr Padukka.

See the **FAQ** for a some frequently asked questions.

If you need to be **absent from a lab meeting** due to **illness**, **personal or family emergency**, **religious obligation**, or **participation in a GT-sponsored event**, do not email the Course Coordinator but instead **use this GPS excused absence form**. Only email the Course Coordinator if your reason doesn't fall into one of those four categories.

Course **communication** will happen through **edstem** ("Ed Discussion" in the navigation links on the left).

All **lectures** are in **Howey L1**. Days/times for each section:

- Sections A/HP (Alicea) - M/W, 9:30-10:45am
- Section B (Ghosh) - M/W, 11am-12:15pm
- Section C (Fenton) - M/W, 12:30-1:45pm
- Section D (Du) - T/Th, 9:30-10:45am
- Section E (Kolvin) - T/Th, 11am-12:15pm
- Sections R/RBS (Darnton) and QH (Padukka) - watch the twice-weekly recorded lectures in the **Media Gallery**

Lab Meetings are in the third floor of CULC, and they start on the **second week** of the semester (August 31). Read this page for more information about the lab meetings: **What to expect during Lab Meetings**. Remote and Dual Enrollment sections should consult with their respective coordinators for additional information about their lab meetings.

Lab Experiments are done on two-week cycles and get peer-graded. Read this page for more information about the lab experiments: **Everything you need to know about the Lab Experiments**

Exams happen during the **Monday 6:30pm meeting time**. Test dates: **[TBD]**. Read this page for more information about the exam procedures: **Test Logistics**

Locations for the exams:

- Section A/HP (Alicea) in TBD
- Section B (Ghosh) in TBD
- Section C (Darnton) in TBD
- Section D (Curtis) in TBD
- Section E (Padukka) in TBD
- Section R/RBS (Darnton): your exams will be in person. Wait for an announcement from Dr Darnton with specific details.
- Section QH (Padukka): your exams will be in person. Wait for an announcement from Dr Padukka with specific details.

Final Exam

- The Final Exam for all Atlanta-campus sections is a common exam and takes place on **DATE** at at **6pm**, locations TBD.
- The final exam day/time/location for the Remote Students (Sections R and RBS) and Dual Enrollment students (Section QH) is TBD.
- If you have a **conflict** for the final exam (another final exam at the same time, or three final exams on that date, or an official GT excused absence), contact the Course Coordinator to get added to the list for the Conflict Final, which which will take place on **DATE** at **8am**, location TBD.

Course Instructional Team

[picture]	**Course Coordinator** **Dr Emily Alicea-Muñoz (she/her)** Lecture **Section A/HP** Monday/Wednesday, 9:30am-10:45am **STREAMING LINK** (MS Teams) **Contact:** **ealicea@gatech.edu** **Office:** Howey C-201 (Howey second floor, center hallway) **Office Hours:** TBD
[picture]	**Professor Aishik Ghosh** Lecture **Section B** Monday/Wednesday, 11:00am-12:15pm **Contact:** **AishikGhosh@physics.gatech.edu** **Office:** Howey W-506 (Howey fifth floor) **Office Hours:** TBD
[picture]	**Professor Flavio Fenton** Lecture **Section C** Monday/Wednesday, 12:30pm-1:15pm **Contact:** **flavio.fenton@physics.gatech.edu** **Office:** Howey N-2?? (Howey second floor, north hallway) **Office Hours:** TBD

[picture]	**Professor Chunhui Du** Lecture **Section D** Tuesday/Thursday, 9:30am-10:45am **Contact:** **cdu71@gatech.edu** **Office:** Boggs B-20 (Boggs basement) **Office Hours:** TBD
[picture]	**Professor Itamar Kolvin** Lecture **Section E** Tuesday/Thursday, 11:00am-12:15pm **Contact:** **ikolvin@gatech.edu** **Office:** Howey W-304 (Howey third floor) **Office Hours:** TBD
[picture]	**Coordinator for Remote Sections R/RL and RBS/RBL** **Dr Nick Darnton** **Contact:** ndarnton@gatech.edu **Office:** Howey W-507 (Howey fifth floor) **Office Hours:** TBD
[picture]	**Coordinator for Dual Enrollment Section QH/QHL** **Dr Prabha Padukka** **Contact:** ppadukka3@gatech.edu **Office:** Howey W-107 (Howey first floor, west hallway) **Office Hours:** TBD
[picture]	**Head TA:** TBD **Contact:** TBD **Office:** TBD **Office Hours:** TBD
[picture]	**Lab GTAs and UTAs:** **SPREADSHEET LINK TBD** • **First tab:** Lab Schedule

	• **Second tab:** GTA Contact Info • **Third tab:** UTA Contact Info • Last Updated: [date]
[picture]	**PLUS Leader(s):** TBD **Schedule of PLUS Sessions:** TBD

Course Learning Outcomes

The **topics** covered in this course include:

- The different types of matter and interactions found in nature
- Using the momentum principle to predict future motion
- An atomic model of solids
- The momentum principle in moving reference frames
- Energy conservation including relativistic energy
- Energy in macroscopic systems including thermal energy
- Multi-particle systems and the center of mass
- Collisions including relativistic particle collisions
- Angular momentum and torque

By the end of the course, you will be able to:

- Apply a small set of fundamental physical principles to a wide variety of situations.
- Use these principles to explain a wide variety of physical phenomena.
- Communicating scientific ideas is a big part of the laboratory.
- Make macro-micro connections, based on the atomic nature of matter.
- Model physical systems: make idealizations, simplifying assumptions, estimates.
- Construct computational models to predict the time evolution of system behavior.

Required Course Materials

In an effort to reduce cost to students, we are offering this course using a combination of instructor created content and open-access resources. This means you are not required to purchase a textbook or pay a lab fee. Our curriculum will, however, roughly follow the **Matter & Interactions**, Vol. I: Modern Mechanics, 4th Edition by R. Chabay & B. Sherwood (John Wiley & Sons 2015). **If you prefer having a traditional textbook as a study aid**, we recommend purchasing a used copy (even the 3rd edition should work).

The **Georgia Tech Library** has a few physical copies of the textbook available for students to borrow or to make photocopies. **Ask at the INFODesk: Grove Level, Price Gilbert; QC23.2 .C43 2015**

Alternatively, students who are interested in completing the Weekly Preview assignments (see **The Bucket Points** under **Grading Policy** further down the page) can buy or rent the electronic version of the textbook in Persuall.

The textbook emphasizes the atomic nature of matter and integrates traditional mechanics with thermal physics. There is strong emphasis on the Momentum Principle (Newton's Second Law), the Energy Principle (the first law of thermodynamics) and the Angular Momentum Principle. The main goal of this course is to have students engage in a process central to science: the attempt to model a broad range of physical phenomena using a small set of powerful fundamental principles.

To aid in this goal students will develop computational models that predict the motion of interacting objects. These models will be made using the Visual Python programming language (run in your browser at **www.glowscript.org**). The course also emphasizes the atomic structure of matter, especially the ball and spring model of solids, and photon emission and absorption in quantized systems.

The lab experiments require students to have a smartphone (for video recording) and a laptop/computer (for coding and video analysis). Other materials for the lab experiments will be available in the lab rooms, or else will be household items that anyone can have access to.

Course Modality

The lectures, labs, and exams all happen in-person. The **lectures** are all in the **Howey L1** lecture hall. The **lab meetings** are in the physics lab rooms in the third floor of the CULC building. The **exams** are taken on paper, proctored in-person in various lecture halls throughout campus.

We will use in-class lecture time to engage in **active-learning activities** (e.g. problem-solving, discussion, etc). Important concepts will be introduced in the **pre-lecture videos** and **Weekly Preview** assignments.

During class, please come prepared to use what you have learned by putting larger conceptual ideas together. This approach is a lot more fun than sitting passively listening to a lecture! More importantly, this modality provides many opportunities in class to work through concepts that are giving you trouble. For this to work, you will need to make sure you **come to class prepared** to be an active learner. An abundance of research clearly demonstrates that this method of learning is more effective than a traditional lecture only based class.

How to prepare for class

Sometime during the first week of the semester you should download the PointSolutions app (**iOS**, **Android**) and **register it** for this class (go to Modules > Getting Started > Clickers registration).

- Watch the **pre-lecture videos** listed in each weekly module and/or complete the **Weekly Preview** assignments.
- Identify the concepts that you are having difficulty with so that we can work through these concepts together with clickers and in-class group work. Don't be afraid to ask AND answer questions in class!
- Please remember that we are here to make sure you succeed and if you are having trouble, seek help!

What to bring to class

When you come to lecture, bring **something to take notes** (a laptop, tablet, or notebook). Research shows that students learn more by handwriting notes than by typing them!

You should also make sure to bring a smartphone or other internet-enabled device (to answer the clicker questions), and a calculator (preferably the same calculator you will use during the exams).

Inclusivity and classroom community

We strive to create a classroom in which all students can flourish and learn. Our differences in terms of race, gender identity, sexuality, religion, ability, and age (among others) broaden and enrich our collective understanding, and our backgrounds and identities influence our individual experiences and our interactions with others. We are committed to minimizing bias in course policies and procedures and our own words and actions, and **welcome feedback** should you notice that any aspect of this course is inhibiting your ability to participate and learn.

Specific information for the Remote Sections (R/RL and RBS/RBL)

Students enrolled in **Section R/RL (GT Europe)** and **Section RBS/RBL (Barcelona)** are not required to attend live lectures. Instead, they should watch the recorded lectures that will be hosted in the **Media Gallery**.

If you're in one of these sections and won't be attending live lectures, you will not have a class participation grade (see **The Bucket Points** below). Instead, you your **Homework** category count for both the Homework and Class Participation categories. There are several other (small) differences in grading for the remote sections: see the Remote Sections Syllabus Addendum announcement for details.

Your lab meetings (GPS and lab experiments) will happen remotely through **MS Teams**, where you'll be assisted by a TA. Your lab meetings are **Mondays and Wednesdays at 6:30pm-8:30pm Europe time** which is usually (but not always) 12:30pm-2:30pm Atlanta time, because daylight savings occurs on different dates in the US and Europe.

All information regarding logistics for the remote sections (e.g., how the GPS and labs will work, how the tests will be proctored, etc) will be relayed directly to the students enrolled in these sections by Dr Darnton via the **Announcements** tool here in Canvas.

Specific Information for the Dual Enrollment Section (QH/QHL)

[info goes here, TBD]

Course Schedule

The **Modules** section, which is one of the navigation links on the left, contains the entire course schedule organized on a week-by-week basis.

The first module, **Getting Started**, contains important information (about the course in general, about lab meetings and lab experiments, about exams and assignments) that you **must** read.

Each weekly module is organized in three (or four) sections. The first section lists the **lecture topics** for the week. The second section lists what is going on in the **lab meetings** for that week. The third section lists all **assignments** due by the end of that week. An extra section for **testing** information appears in the modules for weeks in which there is an exam.

For a quick full semester schedule at-a-glance, see this file: **LINK GOES HERE**

Grading Policy

Numerical ranges for final grades are as follows:

- A = 90-100 points
- B = 80-89 points
- C = 70-79 points
- D = 60-69 points
- F = 0-59 points

Final grades will not be curved.

You can use the Canvas **Grades** area to keep track of your progress in this course. However, please note that **the Canvas gradebook cannot accommodate our test weighing scheme or**

the bucket points. This causes a small but sometimes significant error in the overall grade that Canvas reports to students.

To accurately calculate your final course grade, you **CANNOT** rely on the Canvas gradebook. Instead you MUST use the "What's my grade?" spreadsheet, which can be found under Files > Course Documents > **WhatsMyGrade2211.xlsx**. See this page in the Getting Started module for information on how to use the spreadsheet: **How to accurately calculate your final course grade**

The Core Points

All students must participate in these activities or they will receive a zero for the assignment. Please contact the Course Coordinator if you need to be excused from these activities.

Tests (40 points)

There are **three evening tests** that will happen on **[DATES TBD]**, and are weighted depending on the grade you receive in them: the lowest score is 5 pts, the middle score is 15 pts, and the highest score is 20 pts.

Each test is **75 minutes** long. Students with ODS exam accommodations should contact the Course Coordinator for the specifics of their testing situation.

If you **arrive late** to the test, you have less time to work on the test. Note that you will not be allowed to take the test if you arrive after someone else has already finished and left the exam room.

The tests and the final exam follow the same general **Exam Grading Rubric**

Regrade requests will be available on Gradescope 24-hours after the test grades get posted to Canvas, and must be submitted by the Friday prior to the next test. GTAs will process regrades usually within a week of receiving them. Corrected grades in Gradescope will be synced back to Canvas on the day of the next test.

Please read this page for full details about the exams: **Test Logistics**

Final Exam (25 points)

The final exam is a **common exam**, which means all Atlanta-campus sections of PHYS 2211 take the final exam at the same time, on **DATE at 6pm**. The locations for the final exam will be communicated to you later in the semester. The day/time/location of the final exam for the remote section will also be communicated later in the semester.

If you have a **scheduling conflict** with the final exam (e.g., another final exam at the same time, or if you have three or more final exams on the same day), then you must contact the Course Coordinator to let them know as early as possible. The **Conflict Final** will take place on **DATE at 8am**, location TBD.

The final exam is **2hrs 30min** long. Graded final exams are not returned to students but can be reviewed by appointment with the Course Coordinator after the start of the next semester.

Laboratory (25 points)

The laboratory points are split into **15 points** for the Lab Experiments, and **10 points** for the Group Problem Solving.

Lab Experiments. **15 points** will be earned for the six lab experiments, five of which have peer-graded video lab reports. The last 45-60 minutes of the weekly lab meetings are dedicated to working on your lab experiments.

Note that you must fully complete the majority of the lab experiments in order to pass the class. If you fail to meet this threshold, you will earn an F in the course.

There are two assignments associated with each lab experiment (except Lab 0, which only requires submitting a link). Please read this page for **ALL** the information you must know about the lab experiments: **Everything you need to know about the Lab Experiments**

Group Problem Solving. **10 points** will be earned for actively participating during the Group Problem Solving (**GPS**) activity and submitting your work to Canvas. These will take place during the approximately the first two hours of the scheduled weekly lab meeting time.

The lowest GPS score is dropped at the end of the semester, which means that everyone gets one free no-questions-asked absence.

Please make sure to read this page for ALL the details about the GPS, including its grading rubric: **What to expect during Lab Meetings**

The Bucket Points

There are nine categories of bucket point assignments, totaling 18 points. Students can earn up to **10 points max** toward their final grade through any combination of the bucket point activities.

Note that **you can earn partial credit** in ALL the bucket categories. The bucket points assignments are intended to support student learning and give you flexibility. Pick and choose from as many different types of assignments as needed. Consider it a buffet of physics points.

Bucket points assignments **cannot be excused or made up**. The way to make up for missing bucket points is by doing other bucket activities. You cannot earn extra credit by completing more than 10 bucket points. Once your bucket is full, any additional points overflow and are lost.

General due dates for all assignments (bucket or otherwise) are on Fr**iday nights at 11:59pm Atlanta time**. Note that absolutely no work will be accepted for any assignments submitted after the **Hard Deadline**, which is the last day of classes (Tuesday **DATE**).

Class Participation (6 points)

Monitored through a series of in-class polling-type questions (clickers). You'll need to download and use the PointSolutions app, as mentioned earlier in the subsection **How to prepare for class**.

You are not penalized for wrong answers during lecture but you must complete at least **50%** of the questions in each lecture to earn participation credit for that lecture. To earn clicker credit, you must attend the lecture section for which you are registered.

Quick summary of how to calculate your class participation grade:

- Answer at least half of the clicker questions in each lecture to earn one point for that lecture. If you answer less than half of the questions you won't earn the point, even if you were in class that day.
- There are N lectures with clicker questions during the semester (for example, N=25). If you earn the participation point in each lecture then you have N points. If you miss a lecture or don't answer enough clicker questions you miss points (for example, if there are 25 lectures and you missed two lectures, then you finish the semester with 23 clicker points).
- Your clicker score is the percentage of lectures in which you earned points (in this example, 23/25 = 92%).
- Multiply your percentage by 0.06 to know how many points you earn for class participation (in this example, 92% of 6 points is 5.52 points).

Remember that class participation is in the Bucket category, so any missed clicker points due to absences (excused or otherwise) are **not excused**, but rather you can make them up by doing other Bucket assignments.

Homework (4 points)

There are weekly homeworks starting on Week 2 of the semester. These are completed online, in the **WeBWork** platform.

Each homework can have a different number of problems, and each problem can have a different number of sub-parts. There are infinite attempts for every sub-part of every problem, with no

penalty for the number of attempts. Each homework is graded for accuracy, and the score is synced to Canvas expressed as a percentage.

Homework problems can be numeric or symbolic. Numerical values in homework problems are randomly assigned, so the same problem will display different numbers for different students. Look at the page **Webwork Syntax** in the Getting Started module for details on how to enter symbolic expressions into WeBWork.

The due dates for all homeworks are **Fridays at 11:59pm** at the **END** of each week (i.e., the Week N homework is due at the end of Week N). Each homework has a late **submission grace period** equal to one week (i.e., the Week N homework can be completed until the end of Week N+1), **except for the last homework of the semester**, whose grace period ends on the Hard Deadline (which is a Tuesday, not a Friday). You can earn full credit for the homework if you submit within the grace period. Submissions after the end of the grace period earn no credit.

Note that the **Syllabus Quiz** assignment is part of the Homework category, but this one is a Canvas quiz instead of a WeBWork assignment. Additionally, the **Gradescope Practice** assignment is also in the Homework category.

Remember that homework is in the Bucket category, so missed homeworks are **not excused**, but rather you can make them up by doing other Bucket assignments. And because the homeworks already have a one-week grace period, homework **extensions will not be granted** except for extenuating circumstances.

aiPlato Reviews (2 points)

There will be one review assignment available for each test and the final exam, to be completed in the aiPlato platform. **aPlato** includes a physics-focused AI tutor that can give you step-by-by-step guidance on how to solve problems. As in, you can enter your work and ask it to check if you did it right, and if you didn't then it can help you correct your approach.

We recommend you first do the **ungraded aPlato tutorial** assignment (which will become available early in the semester) to become familiar with the platform and interface. This assignment will become available early in the semester. Each review assignment will be open for about one week, before each test.

Since these review assignments are in the Bucket category, missed review assignments are **not excused**, and **deadlines will not be extended**.

Weekly Previews (1 point)

These are interactive assignments delivered through the **Perusall** platform. The due dates for the Weekly Previews are on **Fridays at 11:59pm before the START of each week** (meaning, the Week N preview assignment is due before the start of Week N; or in other words, the week N

preview is due at the end of week N-1). For more details, see this page in the Getting Started module: **How do the Weekly Preview assignments work?**

The weekly previews are primarily textbook reading assignments. Students can **rent or purchase the electronic textbook in Persuall** if they want to earn the bucket point for the Weekly Previews.

Remember that the weekly previews are in the Bucket category, so missed weekly preview assignments are **not excused**, but rather you can make them up by doing other Bucket assignments. The deadlines for these assignments will also **not be extended**.

Test Wrappers (1 point)

These are reflection exercises to help you focus on common errors and time management. There are three tests, which means there are **three** test wrappers, and therefore each individual test wrapper can earn you 1/3 of a bucket point. Missed test wrappers will not be excused, since they are in the Bucket category, and their deadlines are not extended.

The test wrapper for Test N becomes available the Sunday after Test N (which is when grades are usually posted), and must be completed by the Friday before Test N+1. The one exception is the Test 3 Wrapper, which is due on the Hard Deadline (which is a Tuesday, not a Friday).

Wiki Resource (1 point)

Make a substantial improvement to an assigned topic on our class wiki resource. Must be completed/submitted by the Hard Deadline.

Public Lecture Reviews (1 point)

Attend evening lecture(s) by visiting scientists and submit a short video explaining what you learned in the public lecture.

If there are N public lectures, then each public lecture review earns you 1/N bucket points. The due dates for these vary, but can be usually expected to be roughly two weeks after the day of each public lecture.

Midterm Survey (1 point)

The College of Sciences has developed a Midterm Survey to allow instructors to receive early feedback from their students. The survey will become available somewhere around the middle of the semester and will stay open for 2-3 weeks. If you complete the survey, you'll earn one bucket point.

Edstem Participation (1 point)

You can earn up to 1 bucket point by actively participating in edstem. We use a somewhat complicated formula that includes sigmoid functions to compute your participation score, but the important thing for you to know is that your edstem participation is weighed as follows:

- Asking questions = 5%
- Posting comments/follow-ups = 5%
- Answering questions = 10%
- Having an answer accepted (checkmarked) = 30%
- Getting a post or comment "hearted" = 10%
- Getting a post or comment endorsed by an instructor = 40%

Please note that everything you post in edstem is **anonymous** on the front end, but the edstem backend keeps track of these statistics for each participant (including instructors and TAs). So although not even the instructors can see who you are if you post anonymously, at the end of the semester the Course Coordinator is able to download the course analytics from edstem and calculate your edstem participation grade.

The Course Coordinator will post the edstem participation grades to Canvas after the final exam.

The Extra Credit

You have the opportunity to earn up to 1 point of extra credit to be added to your final course grade. This can be earned by completing the Physics Pre/Post Tests.

- If you do the **Physics 1 Pre-Test** (only available during Weeks 1-2 of the semester) you earn 0.5pt of extra credit.
- If you do the **Physics 1 Post-Test** (only available on Weeks 15-16 of the semester), you can earn up to 0.5pt of extra credit, depending on your score in the post-test. For example: if you scored 80% in the post-test, then you earned 80% of 0.5pt, which is 0.4pt.

You can do the pre-test only, or the post-test only, or both, or neither, which means you can earn anywhere between 0 and 1 points of extra credit.

Once these assignments close on their due dates, they will not be reopened.

Course Policies

These are our general guidelines for handling absences, getting help, or academic misconduct. If you are unsure about any of the course policies, please contact the Course Coordinator for help.

Attendance Policy

Attendance to **lectures** is required. Class participation will be monitored through a series of in-class polling-type questions (clickers). Students must complete at least 50% of the questions in each lecture to earn the participation point for that lecture. Class participation is in the **Bucket Points** category of assignments, so any missed points can be made up by completing other Bucket assignments.

Attendance to the **lab meetings** (where students work on GPS and Lab Experiments) is **mandatory**. Students who need to miss a lab meeting must complete the **GPS Excused Absence form** (see **Excused Absences** subsection below) to be excused from the GPS. Since Lab Experiments follow two-week cycles, missing one lab meeting does **NOT** excuse a student from completing the corresponding lab experiment.

Excused Absences

Students may be excused from assignments in the Core Points at the recommendation of the Dean of Students office or the office of the Registrar.

Test Absences

If you have to miss a test (e.g., because of illness, or emergency, or religious obligations, etc), you need to follow the instructions in this page to request an excused absence: **https://studentlife.gatech.edu/resources/class-attendance**

Please contact the **Course Coordinator** as soon as you submit your request to the Dean of Students to let them know that you have requested documentation for an excused absence. You do NOT need to wait for the Dean of Student's office to get back to you with their decision before contacting the Course Coordinator.

The final exam score is used in place of a missing test score (we call this **"final exam replacement"**). This means that your missing test is marked as 'excused' until you take the final exam and it gets graded, then whatever grade you got in the final exam is also used in place of the missing test grade.

Final Exam Absences

A student who misses the final exam and is unable to take the makeup final during the conflict period will need to take a grade of **Incomplete (I)** for the course, and then take the final exam on the following semester to fulfill the Incomplete grade.

In order to qualify for an Incomplete grade, the student must have been passing the course up to the point where the Incomplete grade is requested.

GPS Absences

The lowest GPS score is dropped, so every student gets ONE free no-questions-asked absence from the lab meetings.

If you've already used your free absence and find yourself **ill** (e.g., if you have covid or covid-like symptoms), or have an **emergency** on the day of your lab meeting, or have a **religious obligation**, or need to attend an **Institute-approved** event, then **you must use THIS online form** to request an excused absence for the missed GPS. Do not email the Course Coordinator for this.

You need to sign in with your GT credentials to access the form and enter your GTID as well. Please read the instructions in the form before filling it out. You should include some kind of documentation for your excused absence (for example, a picture of a positive COVID test).

Once you have submitted the form, you will receive an automated email that confirms your submission. The Course Coordinator will apply the excused absences in the Canvas gradebook once a week.

Excuses or Extensions for Lab Experiments

Note that a GPS excused absence DOES NOT excuse you from any of the lab experiment assignments! If you need to submit a lab report late, or are unable to submit a lab report or its associated peer grades (e.g., because of illness, academic travel, etc), then you must email the Course Coordinator as soon as possible. In general, you will get an extension on the due date to submit the lab report and/or be excused from submitting peer grades. Include the phrase **"PHYS 2211 - lab report extension"** in the subject line of your email to expedite the process.

Excuses for Bucket Points assignments

We do NOT extend due dates nor excuse missing work for any of the Bucket Point assignments: Class Participation, Homework, aiPlato Reviews, Weekly Previews, Test Wrappers, Wiki Resource, Public Lecture Reviews, Midterm Surveys, Edstem Participation. If you miss any Bucket Point assignments, then you can make up the missed points by doing other Bucket category assignments.

Academic Integrity

Students are expected to maintain the highest standards of academic integrity. All work submitted must be original and properly cited. Plagiarism, cheating, or any form of academic dishonesty will result in immediate consequences as outlined in the university's academic integrity policy.

The policy on academic honesty as stated in the **Honor Code** will be fully enforced during this course for both the instructors and student. All Honor code violations will be referred to the Dean of Students office.

Permitted Collaboration

Collaboration with other students in this course on homework assignments, lab assignments, and in-class activities is permitted and encouraged. For lab experiments, students are allowed to collaborate in performing the experiment and collecting data, but all data analysis, coding, and video lab reports must be individual.

- Using **Chegg** (or similar) and/or **ChatGPT** (or any other generative AI**) to copy or entirely produce any assignment** (e.g., homework, lab reports) is **NOT allowed**.
- If you use a generative AI to **assist** with **small** things in a lab report, then you must cite what AI you used and for what specific things you used it.
- See the **Use of Generative AI** subsection below for more information.

Prohibited Collaboration

Collaboration is NOT PERMITTED during tests or the final exam. These activities are closed internet, closed books, closed notes, with the following exceptions:

- Students are allowed a copy of the **formula sheet** found on Canvas (which will be included in the exam papers).
- Students are allowed **blank sheets of paper** (which will be included in the exam papers).
- Students are allowed a **calculator** (as long as it cannot communicate with other calculators, which means smartphone calculator apps are not allowed).

Every student must work on the tests and final exam individually and receive **no assistance** from any other person or resource. This includes, but is not limited to: other students, non-students, cheat-sheets, online resources external to Georgia Tech (e.g., Chegg), or any kind of generative AI (e.g., ChatGPT). Additionally, any exam work submitted outside of the testing period will not be graded.

Students who violate the academic misconduct policies will be reported to the Office of Student Integrity (OSI).

Use of Generative AI

(this includes ChatGPT, Gemini, Copilot, etc)

We encourage you to use AI tools to deepen your understanding, **provided you do the work yourself**. Here is how we recommend to use AI effectively in this course:

- **Lecture Synthesis.** Example: "I didn't quite catch why we have to use an integral to calculate the work done by a non-constant force. Can you summarize the key steps and explain why this is needed?"
- **Self-Quizzing.** Example: "I have a test on the Angular Momentum Principle coming up. Please generate 5 conceptual multiple-choice questions to test my understanding of cross products, torque, and angular momentum."
- **Code Debugging.** Example: "My GlowScript code has a syntax error on line 12. Can you help me find the typo?" However, you MUST NOT ask it to write the physics logic for you.
- **Exam Review (aiPlato).** We have partnered with aiPlato.ai to provide specialized Exam Review Assignments created by your instructors and validated by aiPlato (see the Bucket Points earlier in the page). Unlike generic chatbots, this tool is specifically tuned for physics education, and doing those assignments can earn you bucket points.

The "trust but verify" rule

AI models are often confident but wrong when working through math or physics problems. If an AI gives you an explanation that conflicts with your notes, or if you feel like you "sort of" get it but not fully, please come to Office Hours to discuss with an instructor -- and **bring the receipt!** Show your instructor what the AI told you. We can help you identify if the AI made a subtle physics error (which is common), or if it used advanced techniques beyond the scope of the class (it happens sometimes), or if there is a gap in your own understanding. Using AI should increase, not decrease, your engagement with faculty!

Prohibited Uses of AI

- **The Solver.** DO NOT input homework or exam review problems prompts to copy and paste an answer. This creates an illusion of competence that will evaporate during the exam. You may think you're just doing it to save time, but in the end it will come back to bite you, so don't do it.
- **Lab Reports.** You may not use AI to generate the script, voiceover, or slides for your video lab reports. The presentation must feature your voice and your logic.
- **Exams.** The use of any AI tools during exams is strictly prohibited.

Core Impacts

This is a **Core IMPACTS** course that is part of the Technology, Mathematics & Sciences area.

Core IMPACTS refers to the core curriculum, which provides students with essential knowledge in foundational academic areas. This course will help master course content, and support students' broad academic and career goals.

This course should direct students toward a broad **Orienting Question**:

- How do I ask scientific questions or use data, mathematics or technology to understand the universe?

Completion of this course should enable students to meet the following **Learning Outcome**:

- Students will use the scientific method and laboratory procedures or mathematical and computational methods to analyze data, solve problems and explain natural phenomena.

Course content, activities and exercises in this course should help students develop the following **Career-Ready Competencies:**

- Inquiry and Analysis
- Problem-Solving
- Teamwork

Accommodations for Students with Disabilities

A student with learning needs that require special accommodation should contact the Office of Disability Services at 404-894-2563 or **http://disabilityservices.gatech.edu/** to make an appointment to discuss their special needs and to obtain an accommodations letter. Once a letter is obtained, you should email the Course Coordinator in order to set up a time to discuss your learning needs. In general we are able to accommodate all requests given advanced notice.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The **Student-Faculty Expectations** articulate some basic expectations that you can have of us and that we have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, we encourage you to remain committed to the ideals of Georgia Tech while in this class.

How to succeed in this course

As a member of the Georgia Tech community, your instructors are committed to creating a learning environment in which every student feels safe and included. Because we are individuals with varying needs, we are reliant on student feedback to achieve this goal. To that end, we invite students to enter into dialogue with us about the things we can start, stop, and continue doing to make our classroom an environment in which every student feels valued and can engage actively in our learning community.

The secret to succeeding in this course is to actively participate during lectures, during lab meetings, in homeworks, and through online discussions. The more authentically you engage with the material the better you will perform during assessments. In general the course is scheduled so that during a given week an actively engaged student would spend **12-14 hours** with this course:

- **[1 hr/wk]** interact with material (e.g., videos, readings) that will be covered before coming to lecture or lab
- **[6 hrs/wk]** attend lectures and lab meetings, actively participating, taking notes, and asking questions to clear up points of confusion
- **[1 hr/wk]** review your lecture notes and any notes taken during the GPS portion of the lab meeting, to keep up with the material and make note of any topics or skills for which you need help (e.g., make a list of questions to ask in office hours!)
- **[1-2 hrs/wk]** complete any work on the lab experiments that you weren't able to get to during the lab meeting time, including the creation of your video lab report (which cannot be done during the lab meeting time)
- **[1-2 hrs/wk]** work through the homework questions to check for understanding and not just to get the correct answer
- **[1 hr/wk]** practice solving new problems leading up to a test. Work through old exams and quizzes, attempt some of the extra problems, redo your GPS problems without looking at your notes or the solutions**. Reading written solutions or watching video solutions only *FEELS* like learning, it's not *actual* learning!** Keep in mind though that **you should not memorize** how to do those specific problems, since exam problems will be different from what's done in lectures, homeworks, GPS, and old tests. Focus on understanding the concepts and the underlying principles, and how to apply them to new problems.
- **[1 hr/wk]** get help early on and often from experts. Your instructors are available to discuss physics related problems during **office hours**. You can also get help online from other students, TAs, and instructors in our online class forum (edstem). Click on **GT Student Resources** on the navigation links to the left to find information about free tutoring services found on campus.

Any issue related to the administration of the course should be directed to the Course Coordinator. Because so many students are taking introductory physics courses, the Course

Coordinator generally receives MANY emails and may take them up to a week to reply. Don't be shy about attending the office hours of the Course Coordinator or any of the instructors! If necessary, you can also schedule a on-on-one meeting with the Course Coordinator outside of office hours, especially if it's to discuss grades.

Campus Resources

It is not usual for any of us to find ourselves in need of support during stressful periods. For a full list of student support resources please see the **GT Student Resources** link in the nav-links on the left-side menu.

The Undergraduate Research Opportunities Program (UROP) provides resources and support for undergraduate research students and their mentors. Visit **https://undergradresearch.gatech.edu/** or contact UROP at **urop@gatech.edu** for more information.