Course Information

PHYS 1301.001 - College Physics I - Fall 2023, Monday, Wednesday 4:30p-5:45p, SCI 1.220

Professor Contact Information

Dr. Kaloyan Penev, Assistant Professor
E-mail: kaloyan.penev@utdallas.edu
Office hours: Monday, Wednesday 5:55 — 6:55 pm (right after class) and by appointment at other times.
You are strongly encouraged to take advantage of the office hours, including to discuss quizzes, homework and exams

Teaching Assistants

Homework assistance and Tutoring will be provided by two TAs. You can attend any TA's office hours regardless if they are the official TA for our section or not. The syllabus will be updated once more information about the TA's schedule is available.

- TBD

Tutoring is also available through the student success center:

For info, see

`http://www.utdallas.edu/studentsuccess/mathlab/index.html`

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Prerequisite: MATH 1314

Corequisite: PHYS 1101

Course Description

3 Credit Hours. Algebra based. Basic physics including a study of space and time, kinematics, forces, energy and momentum, conservation laws, rotational motion, torques, and harmonic oscillation. Three lectures per week.

Required Textbook and Materials

Textbook: "College Physics", ANY edition, by Young, et. al.

Online Howemork: You will need to purchase a key for Pearson's My Lab and Mastering website. Step-by-step instructions are attached at the end of this syllabus. One option for getting the text book is to request an e-version of the text when purchasing the "My Lab and Mastering" key.

If you need to postpone paying for access to mastering physics, (e.g. if you are waiting on financial aid), the mastering physics website has a 14 day free trial that you can use in the mean time so you do not fall behind.

Grading Policy

- Four exams, 66 points, (Lowest of the first 3 exams will be replaced by average of other two. Final exam can not be dropped)
- Homework: 20 points, homework score drops by 20% per day late.
- In-class quetions/Quizzes: 8 points.
- Pre-class quizzes: 6 points
- Learning evaluation: up to 3 bonus points (2 points for simply taking the tests + 1 point performance bonus, see below).
- Attending office hours before exam 1: 1 bonus point. If you cannot make the regular office hours I am happy to schedule time that works for you.

Note on eLearning grade center: It is impossible to set-up the grading scheme outlined in this syllabus on eLearning. As a result, you will not be able to see a running total grade. Instead I will do my best to upload estimated letter grades shortly after each exam that will be calculated using all the rules specified in this syllabus.

Approximate Grading Scale

The following is for guidance only. Grading will be on a curve with:

30% — 40% of students getting A
20% — 30% of students getting B
20% — 30% of students getting C

Exams

Exams will be administered through the testing center. Each exam will be open for several days. Testing center capacity is finite, and often limited. **It is your responsibility to register for your test early to guarantee your spot. You MUST register at least 72 hours in advance for any test you take!!! I have no ability to allow late registrations or any other accommodations!**

Each exam can be taken at any time over the multi-day window, which always includes a Saturday. This provides plenty of flexibility to accommodate unexpected obstacles students may encounter. Make up exams will be considered only for very extreme and well documented reasons beyond the student's control.

Homework

Assignments will be given for each chapter in the textbook. Those wil be accessible through the "Homework and Pre-class Quizzes" folder on the course eLearning page. Accessing the assignments will require registration for the Pearson's My Lab and Mastering website.

Due to the large number of students, it is impossible for the instructor and the half TA assigned to this course to grade hand-written homework. Hence, all homework assignments and exams will be graded online and no handwritten homework will be accepted. Homework must be done by the student and only the student.

The adaptive follow-up assignmenst that appear on Pearson are for practice only. They are not part of your grade.

Along with HW 1, two additional assignments will appear that are not part of your grade. One is a tutorial on how to use Pearson's My Lab and Mastering website and the other is a brief primer on basic mathematics knowledge studenst are assumed to be familiar with before starting class.

Pre-class Quizzes:

Research shows that reading the textbook before coming to class is a much more efficient use of student time (less effort results in more learning) than seeing material in class for the first time. To encourage this, studenst will be expected to read the textbook before class and answer a very brief quiz on the material using the same Pearson's My Lab and Mastering website used for homework. Quizzes will be due by noon on the day of lecture. In addition to encouraging reading the textbook, this will also allow me to gauge what concepts students are struggling with and adjust the lecture accordingly. Quizzes will be available through the "Homework and Pre-class Quizzes" folder on the course eLearning page.

Pre-class quizzes will be graded on whether the answers demonstrate the student has actually read the material before answering, full credit will be given even if the answers are wrong due to mis-understanding. There will be no quiz before lecture 1 and the first two quizzes will not be included in the grade to acccommodate students that add the class late.

In-class Questions:

Lectures will include multiple choice questions that will allow me to gauge how effectively a given topic was covered in class. In order to avoid adding extra costs for students, questions will be presented using the BlackBoard Collaborate polling function (see `https://help.blackboard.com/Collaborate/Ultra/Participant/Participate_in_Sessions/Polls`).

At the beginning of each class students should go to the course home page, click the "Black-Board Collaborate" link in the side panel and join the course room.

Simply answering the questions in real time for a given lecture will earn you half the credit **regardless of the correctness of the answers**. The remaining half of the credit will be earned if you answer correctly more than 50% of all questions during all lectures covered by

a particular exam. For example you need to answer correctly at least 50% of the questions for the lectures on chapters 1, 2 and 3 and submit answers to all questions (correct or not) to get full score for the in-class portion for these chapters.

Any academic dishonesty on homework, quizzes, or exams will be reported to the dean and prosecuted.

Class Schedule

Lecture Date	Textbook Chapter	Topic
Aug 21	1	Physical Quantities and Vectors
Aug 23	1	Physical Quantities and Vectors
Aug 28	2	1D Motion (HW 1 due)
Aug 30	2	1D Motion
Sep 6	3	2D Motion (HW 2 due)
Sep 11	3	2D Motion
Sep 13	1 — 3	Catch up + **exam 1 review** (HW 3 due)
Sep 14—16	1 — 3	**Exam 1**
Sep 18	4	Newton's laws of motion and forces
Sep 20	4	Newton's laws of motion and forces
Sep 25	5	Application of Newton's laws (HW 4 due)
Sep 27	5	Application of Newton's laws
Oct 2	6	Circular motion/Gravitation (HW 5 due)
Oct 4	6	Circular motion/Gravitation
Oct 9	4 — 6	Catch up + **exam 2 review** (HW 6 due)
Oct 12—14	4 — 6	**Exam 2**
Oct 11	7	Work and Kinetic Energy
Oct 16	7	Potential Energy and Energy Conversion
Oct 18	8	Momentum, Impulse & Collisions (HW 7 due)
Oct 23	8	Momentum, Impulse & Collisions
Oct 25	9	Rotational motion (HW 8 due)
Oct 30	9	Rotational motion
Nov 1	7 — 9	Catch up + **exam 3 review** (HW 9 due)
Nov 2—4	7 — 9	**Exam 3**
Nov 6	10	Dynamics of rotational motion
Nov 8	10	Dynamics of rotational motion
Nov 13	11	Periodic motion (HW 10 due)
Nov 15	11	Periodic motion
Nov 27	12	Waves and Sound (HW 11 due)
Nov 29	12	Waves and Sound
Dec 4	13	Fluids
Dec 6	10 — 13	Catch up + **exam 4 review** (HW 12 due)
Final exam period	10 — 13	**exam 4**

Student Learning Objectives/Outcomes

- Add and subtract vector quantities, perform scalar and vector products, determine vector magnitudes and angles relative to a reference frame.
- Demonstrate how position, velocity, acceleration and time are related mathematically, particularly under conditions of constant acceleration.
- For 2D systems, apply position, velocity and acceleration as vector quantities, including situations of circular motion and relative velocity.
- Understand Newton's three laws relating forces and motion Apply Newton's laws to predict motion for various geometries and for problems involving friction.
- Understand and use conservation of energy, work, kinetic energy, and power.
- Interrelate momentum and impulse; understand conservation of momentum; apply momentum to collisions.
- Understand rotational motion, angular momentum, moments of inertia and how they relate to kinetic energy.
- Understand simple harmonic motion: when does it occur, what are its properties and mathematical description.
- The mathematical description of waves, their relation to simple harmonic motion, the principle of superposition, properties of waves such as wave functions, dynamics, and power.
- Understand the basics of fluid mechanics, such as density, pressure, and buoyancy.

The objectives above will be assessed during the semester as follows:

- All objectives have corresponding questions on the three exams.
- Homework assignments will stress the applications of concepts to various situations.
- In-class quizzes will consist of conceptual or quantitative questions related to these objectives

Learning evaluation for introductory physics courses

In an effort to evaluate the effectiveness of our physics instruction, we are conducting two multiple choice tests to probe student performance at the beginning and end of this course. The tests will allow you to earn up to 3% bonus credit to your final grade. You will receive 2% by simply taking the two tests — your grade will NOT depend on your performance for the test. You will also earn a 1% additional bonus on your final grade if your post–test grade is above the average. There will be no credit given for taking only one quiz. Each test is a 50 minute, multiple choice exam.

The tests will be administered by the Testing Center on the first floor of the Synergy Park North 2 building (SPN2). The quizzes will be on a **separate eLearning site:** `PHYS`

1301.701. You will only be able to do the pretest and posttest from the Testing Center, but you can logon and do a 'sample quiz' (not about physics!) from any computer. (This is to let you check that your account works.)

Test dates for the learning evaluation are not yet available. Syllabus will be updated when dates are fixed. You register for these exams the same way you do for regular exams, through the testing center website:

https://ets.utdallas.edu/testing-center

If you have an accommodation from OSA that involves extended time for tests, then either email Dr. Mac Alevey the accommodations letter (at paulmac@utdallas.edu) or hand it to him at his office (SCI 3.168).

Register for both tests early in order to guarantee space. You will not be able to register less than 72 hours before you start the test.

Please go to the PHYS 1301.701 site and do the sample test to verify you are properly enrolled in the exam section. Students that have not received the right eLearning link should contact

elearning@utdallas.edu

The actual exam will finish 50 minutes after you click 'Begin Assessment' (but the test might not even take that long). You must complete the test in a single interval 50 minutes or less.

UT Dallas Syllabus Policies and Procedures

The University's policies and procedures segment of the course syllabus can be found at:

http://go.utdallas.edu/syllabus-policies

These descriptions and timelines are subject to change at the discretion of the Professor.

Pearson | Mastering | Physics

Student Registration Instructions for Blackboard

First, open your Pearson content

1. Log in to Blackboard as a student and enter your course.
2. Depending on your course setup, do one of the following. Don't know your setup?
   - Select the content area provided by your instructor or **Tools** from the left navigation and, if applicable, **Content Market Tools**. Then select **Pearson's MyLab & Mastering**, **Access Pearson**, or any other Pearson link.
   - Select a Pearson link under Course Content. Or, under Books & Tools, select **View course & institution tools**, and then the **Pearson MyLab & Mastering** or **Access Pearson** image.
   - **Barnes & Noble, Follett Willo, RedShelf, and VitalSource:** Select the Course Materials link and then check your opt status. If applicable, select **Launch Courseware** or **Access Courseware.**
3. If prompted, select **Open Pearson**.
4. Select **Open MyLab & Mastering** to go to the course home page or select a link under Student Links.

Next, get access to your Pearson content

1. Link your student Blackboard and Pearson accounts. In some cases, your Pearson account might be automatically created and linked for you.
2. If prompted, select an access option:
   - Enter a prepaid access code that came with your textbook or from the bookstore.
   - Buy access using a credit card or PayPal account.
   - If available, get temporary access without payment for 14 days.
3. Select **Go to my course**.

We recommend you always enter your Mastering Physics course from Blackboard.

Need assistance?

Browser requirements

Student Help