The descriptions and timelines on this syllabus are subject to change at the discretion of the Professor.

Course Information

Course Number/Section	PHYS 1301.501
Course Title	College Physics I
Term	Fall 2025
Days & Times	Tuesday & Thursday 5:30 PM – 6:45 PM
Room	**In person** SCI 1.220

Instructor Contact Information

Instructor	Dr. Alexandre Goncalves Pinheiro
E-mail	agp240000@utdallas.edu

Folder link (QR) with the materials of this course:
https://cometmail-my.sharepoint.com/:f:/g/personal/agp240000_utdallas_edu/EgLjvvXuACdLsW-Ne-dS0foBGHj8oEV4T8CXs23PO6UEYA?e=fvBwh6

Teaching Assistants:

Name	Email	Time and day	Room number
Khalid, Muhammad	Muhammad.Khalid@UTDallas.edu		

University supported Tutoring:
Through the Student Success Center http://studentsuccess.utdallas.edu/

Course Pre-requisites, Co-requisites, and/or Other Restrictions
Prerequisites: MATH 1314 (College Algebra) or equivalent. Corequisite: PHYS 1101. Familiarity with basic mathematics (including algebra, geometry, and trigonometry) is assumed.

Course Description
3 Credit Hours. Algebra based. An introductory course on the fundamentals of physicsincluding a study of space and time, kinematics, forces, energy and momentum, conservation laws, periodic motion, waves and thermodynamics.

Student Learning Objectives/Outcomes
Upon completing this course, students will:

- Be able to compute the sum, scalar multiplication, and vector multiplication of vectors
- Be able to analyze and explain the components of linear and rotational motion (displacement,velocity, acceleration) including graphs and their interrelationships
- Be able to apply different forces and work force problems including the fundamental force ofgravity and Newton's laws
- Be able to classify the different forms of energy and use the conservation of energy to workproblems
- Be able to define momentum and collisions
- Be able to give examples of rotational variables and the relationship between linear androtational variables
- Explain simple harmonic motion and waves including their properties.
- Identify and describe fluids in motion and at rest and interpret basic laws of thermodynamics

Required/suggested Textbooks and Materials
Textbooks
"College Physics: A Strategic Approach"
Authors: Randall D. Knight, Brian Jones, Stuart Field
Publisher: Pearson
Edition: 4th Edition (2018)

"College Physics"
Authors: Hugh D. Young, Philip W. Adams, Raymond Joseph Chastain
Publisher: Pearson
Edition: 11th Edition (2018)

"College Physics"
Authors: Alan Giambattista, Betty McCarthy Richardson, Robert C. Richardson
Publisher: McGraw-Hill Education
Edition: 5th Edition (2018)

"Physics for Scientists and Engineers: A Strategic Approach with Modern Physics"
Authors: Randall D. Knight
Publisher: Pearson
Edition: 4th Edition (2016)

"College Physics" by OpenStax
Authors: Paul Peter Urone, Roger Hinrichs, et al.
Publisher: OpenStax
Edition: 2012

Suggested extra Course Materials
Suggested Readings/Texts
Schaum's Outline – College Physics ISBN-13: 978-0071754873
Schaum's Outline – 3,000 Solved Problems in Physics ISBN-13: 978-0071763462
Fundamentals of Physics 10th Edition by David Halliday, Robert Resnick, Jearl Walker - John Wiley & Sons, Inc
ISBN-13: 978-1118230725

Songs to help you memorize some concepts:

Physics Songs
https://www.youtube.com/playlist?list=OLAK5uy_n1U2fn8fbuxS1791Npu7if8Lr-bua1ZtE

Physics Songs Waves That Collide
https://youtube.com/playlist?list=OLAK5uy_lrtwIpBoIVQGROGAZ_5REtfujCZ6oF5jI&si=889K_Vzx8JkmT88c

Standing Waves and Interference
https://youtube.com/playlist?list=OLAK5uy_n4otO87UtRGxgOu8cE09lsQ-e_YER6-M8&si=7eQh1a755rih4-1y

Some simulations to be used in this course:
www.agopin.com

Assignments & Academic Calendar

Topics, Reading Assignments, Exam Dates

Tentative Schedule

	Date	Lecture#	Lecture Contents	Reading Assignment
26/08	Tue	01	Course introduction, math review, models, measurements.	Ch0, 1
28	Thu	02	Vectors	Ch1
02/09	Tue	03	Motion along a straight line:displacement, time and average velocity	Ch2
4	Thu	04	Motion along a straight line: average andinstantons acceleration, motion with constant acceleration	Ch2
9	Tue	05	Motion in a plane: velocity in a plane,acceleration in a plane, projectile motion.	Ch3
11	Thu	06	Motion in a plane: projectile motion, uniform circular motion, relative velocityin plane.	Ch3
16	**Tue**		**Exam 1**	**Chapters 1,2,3**
18	Thu	07	Newton's laws of motion: force,Newton's first law, mass and second law.	Ch4
23	Tue	08	Newton's laws of motion: mass and second law, mass and weight, third law,free-body diagrams.	Ch4
25	Thu	09	Newton's laws of motion: third law &free-body diagrams	Ch4
30	Tue	10	Applications of Newton's laws: particles	Ch5
02/10	Thu	11	Circular motion and gravitation	Ch6
07	Tue	12	Circular motion and gravitation	Ch6
09	Thu	13	Work and energy	Ch7
14	**Tue**	**14**	**Exam 2**	**Chapters 4,5,6,7**
16	Thu	15	Momentum	Ch8
21	Tue	16	Momentum	Ch8
23	Thu	17	Rotational motion	Ch9
28	Tue	18	Rotational motion	Ch9
30	Thu	19	Dynamics of Rotational Motion	Ch10
04/11	Tue	20	Dynamics of Rotational Motion	Ch10
6	Thu		Exam 3	**Chapters 8, 9, 10**
11	Tue	21	Elasticity and Periodic Motion	Ch11
13	Thu	22	Elasticity and Periodic Motion	Ch11
18	Tue	23	Mechanical Waves and Sound	Ch12
20	Thu	24	Fluid Mechanics	Ch13
25	Tue	----------	Fall Break	
27	Thu	----------	Holiday: Thanksgiving	
02/12	Tue	25	Temperature and Heat / Final Review	Ch14
4	Thu	26	Final exam (Exam 4)	**Chapters 11, 12, 13, 14**

Class Materials

Electronic copies of PowerPoint slides used in class will be posted on eLearning (go to eLearning on the UTD home page). Log in to the section for this class listed as PHYS 1301. Use the slides as guides to prepare your own handwritten notes.

Homework Problem Assignments

Weekly assignments will be set for each chapter we cover throughout the semester. The problems in the assignments are mostly taken from the exercise problem section at the end of each chapter.

The bi-weekly or weekly homework/quiz assignment will be released before or on Friday of that week and will cover the material for that week or the other week with the accumulated materials. The due time for online submission will be at 11:59 PM next week Thursday (Texas time) unless specified on eLearning (with more or less time).

Exercises(for practice) sent by email or main course's folder will not be graded.

Only assignments (homework/quiz/exam) posted on the e-learning platform will be graded to count for the final grade.

It is recommended that you print out your homework problems and do the work on your printouts. This is a convenient way to keep everything together. Successful students have done this in the past.

Examinations
Homework and/or classwork will be assigned. It is possible that some assignments will be designated to be done by teams of students or individually. This will be an optional assignment in terms of team or individual participation. The instructor will define this process in every class. The due dates will be on the next exam for each set of assignments related to the exam.

There will be four major exams: Exam 1, Exam 2, Exam 3, and the Final Exam(Exam 4). All exams will be conducted in person (or online for special cases, such as health issues) in the classroom and submitted online in eLearning as a PDF file with your solutions unless specified otherwise.

Grading policy

One or more of your homework assignments (tests) with the lowest score will not be counted towards your final grade, applying the same rule for the tests/exams. The instructor will compute how many will be dropped based on the number of assignments using a simple formula. For example, the total number of tests/exams to be considered is calculated as n-int(n/3), where n is the number of given tests/exams.

Example: 5 applied tests/exams => 5-int (5/3)=5-1=4 tests/exams to be used for the final average grade. Every exam will be related by the topics to some homework(s) (HMWKs). The final average will be computed using the formula: (50%HMWKs+50%EXAMS)/2

A+ 100
A 92.0
A- 88.5
B+ 86.0
B 80.0
B- 77.5

C+ 75.0
C 69.0
C- 66.5
D+ 64.0
D 58.0
D- 54.5. **F <54.5**

Students are encouraged to attend lectures in person. The student or team will have a chance to earn extra points or bonuses during some classes by solving questions given by the instructor during class time. The points can be added to the next related exam, in terms of topics. The value of these points/bonus questions and their number will be established by the instructor in real-time during each class.

Technical Support
If you experience any problems with your UTD account, you may send an email to: assist@utdallas.edu or eLearning@utdallas.edu . You may also call the UTD Computer Helpdeskat 972-883-2911.

Course & Instructor Policies
Make-up exams
There will be no make-up exams, except for prearranged serious interferences that you can document PRIOR to the date of the exam. E-mail the instructor your request for missing the exam and the reason BEFORE the exam is given.

Class Attendance
Students are encouraged to attend lectures in person. The student or team will have a chance to earn extra points or bonuses during some classes by solving questions given by the instructor during class time. The points can be added to the next related exam, in terms of topics. The value of these points/bonus questions and their number will be established by the instructor in real-time during each class.

Classroom Citizenship
For the benefit of your fellow students and instructor, you are expected to practice common courtesy about all class interactions.

Disruption of class will be grounds for reduction in your grade.

During class time please mute your electronic devices and "raise hand" to ask questions.

Comet Creed
This creed was voted on by the UT Dallas student body in 2014. It is a standard that Cometschoose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

University Policies and Procedures
The following link constitutes the University's policies and procedures segment of the course syllabus. Please go to https://go.utdallas.edu/syllabus-policiesfor these policies.

The University of Texas at Dallas is committed to providing reasonable accommodation for allpersons with disabilities. The syllabus is available in alternate formats upon request. If you are seeking classroom accommodations under the Americans with Disabilities Act (2008), you are required to register with the accessibility Resource Center (ARC), located in the Administration Building, Suite 2.224. Their phone number is 972-883-2098,
email: studentaccess@utdallas.edu and website is https://accessability.utdallas.edu . To receive academic accommodations for this class, please obtain the proper accessibility Resource Center(ARC) letter of accommodation and meet with me at the beginning of the semester.

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I will take attendance every class. If you have a major issue (sports, health, transportation, etc.), email me—your message will serve as documentation, and our course values integrity and honesty. classes must be taken in person; this is not an online course. If you have more than 25% absences without documented emails, this will raise a red flag and we may need to discuss your performance, especially if you are failing tests. Absences can lead to failing the course; however, I will be fair and award attendance credit when you email me and/or provide supporting documents.

https://registrar.utexas.edu/schedules/mode#:~:text=In%2Dperson%20classes%20may%20have,online%20and%20in%2Dperson%20experiences.

Instruction Mode Definitions | Office of the Registrar
In-Person Class (Face-to-face) - Classes designated as in-person are those for which there is at least some material critical for the class that cannot be acquired without in-person attendance. Most of these classes involve learning skills or using equipment that would not be available remotely. In-person classes may have some content presented online, but students who register for classes ...
registrar.utexas.edu

Instruction Mode Definitions

- **In-Person Class** (Face-to-face) - Classes designated as in-person are those for which there is at least some material critical for the class that cannot be acquired without in-person attendance. Most of these classes involve learning skills or using equipment that would not be available remotely. In-person classes may have some content presented online, but students who register for classes without coming to campus cannot take these classes.
- **Hybrid Class** (Hybrid/Blended Course) - A hybrid class utilizes both online and in-person experiences. A hybrid class is one designed for the instructor and students to meet in person part of the time and online other times.
- **Online Class** (Internet) - An online class is a class designed from the ground up assuming that all students will attend the main class experience online. Material in these classes may be presented synchronously or asynchronously.
- **Correspondence** (Correspondence) - Paper-based or electronic Instructional exchange where student is not present on campus.

- **Two-Way Interactive** (Two-way Interactive Video) - Students gather to view a lesson presented via Internet or other media. The students and instructor can interact with each other instantly although they are in different physical locations.
- **Web-Enhanced** (Web-enhanced) - Traditional campus-based course where the instructor and the students are in the same physical location at the same time, but interact largely via the web or other electronic means.
- **Multiple or Other Electronic Media (Multi-Media)**- Use only if no other single mode accounts for 51% of the instruction or if the electronic instruction mode is not listed above.

*The terms you see in parentheses are the instructional mode terms as noted in the online course schedule.