PHYS 1101: General Physics Lab I
Spring 2026

Course Information
Credit hour: 1
Section: 05L
Lab Location: ST 379

Instructor Information
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Course Description
Over the past century, physics has undergone a revolutionary transformation through theories such as quantum mechanics and general relativity. These theories have expanded our understanding of the universe, from the smallest atomic scales to the largest cosmological ones. The application of these theories has significantly advanced other natural sciences and engineering disciplines, shaping innovations that impact our daily lives. For example, airplanes, MRI machines, satellites, metal detectors, smartphones and many other technological advancements would not exist without the underlying knowledge of the physical principles. Physics, therefore, serves an important purpose in modern science, technology and engineering. This course provides students enrolled in **PHYS 1301** with a hands-on learning experience that highlights the essential relationship between theory and experimentation. Neither theory nor experiment stands alone: theoretical predictions guide the design of experiments, and experimental results inspire new theoretical models.

The course begins with a review of core skills, including applied mathematics, the proper use of laboratory equipment, and the application of tools such as Excel for data recording, visualization and analysis. Students will then conduct a sequence of laboratory experiments centered on mechanics, exploring fundamental topics such as motion, forces, energy conservation and momentum. These experiments not only reinforce core physics concepts but also provide practical training in measurement techniques, data interpretation, error evaluation, and uncertainty analysis. In addition to technical proficiency, the course emphasizes broader scientific practices. Students will develop skills in collaboration, critical thinking, problem-solving and scientific communication, all of which are essential for success in STEM fields. By uniting theoretical understanding with practical application, this course provides more than laboratory training; it builds a strong foundation for future study in physics and related disciplines while demonstrating the power of physics to explain, predict, and shape the world around us.

Co-requisite: PHYS 1301. **Prerequisite:** TSI Reading/Writing/Math.

Course Objectives
1. **Critical Thinking:** Students will understand the use of logical discussion and analysis through one or more activities such as comparing multiple viewpoints and explaining the use of the scientific method.
2. **Communication Skills:** Students will understand the use of writing, oral, and visual literacy skills to communicate persuasively and exchange information appropriate to the subject, occasion, and audience.
3. **Teamwork:** Students will understand the use of teamwork skills for collaborative lab activities.

4. **Empirical & Quantitative Skills:** Students will understand mathematical concepts and explain mathematical, technological, and quantitative tools for use in science and everyday life, resulting in informed conclusions.

Learning Outcomes

By the end of this course, students will be able to:

1. Set up and perform basic physics experiments
2. Collect data and draw conclusions from experiments
3. Record experimental work accurately and write clear lab reports
4. Describe linear motion, including displacement, velocity, and acceleration
5. Analyze motion with constant acceleration
6. Apply Newton's laws, including gravity, to physical problems
7. Solve problems using energy concepts

Course Material

There is no published laboratory manual or required textbook for this course. All laboratory instructions and reading assignments will be posted on Blackboard (https://tamusa.blackboard.com) prior to each lab session. Printed copies of the lab manuals and report forms will be provided during the lab. Homework and pre-lab assignments will be completed online through Blackboard. Khan Academy is a free and useful resource, and all students are expected to register using their TAMUSA email and join the course via the link provided on Blackboard.

Requirements

1. **Attendance policy:** Regular and punctual attendance is expected. Lab will start promptly at the appointed time. Your official record of your attendance is kept by your name and signature on the reports submitted. If you are unable to attend a lab either for personal reasons or due to an emergency, please let your instructor know by email as soon as possible.

2. **Lab homework and/or Pre-Lab:** Before beginning an experiment, students are required to read the theory section of the lab manual and complete the assigned online pre-lab on Blackboard. These assignments are designed to prepare students for the experiment, maximize learning during the lab session, and ensure readiness to begin work promptly at the start of class.

3. **Lab Make-up:** There are *no* make-up laboratories for this course. Attendance at scheduled lab sessions is required. Any missed lab will receive a grade of zero unless the student provides a valid, documented excuse approved by the instructor. In case of an emergency, the instructor must be contacted by email within 24 hours of the scheduled lab session.

The following are considered *excusable* absences and require documentation to substantiate the claim of excused absence: US military functions, student sickness documented with a note from a doctor, a death in the immediate family within 15 days of the class period documented with a note to the instructor at the time of the class session and then followed by an official notice of death when available, attending a university sponsored event.

Homework, Pre-Labs, and Lab Reports

- Lab groups will generally consist of 3-4 students. Students would be allowed to choose their own group for each lab session. However, special considerations, such as limited lab equipment, might

require that the instructor assign students to a specific group as needed. Each group submits one lab report for the whole group.

- A printed lab report will be provided during the lab, and all answers must be written on the provided template. A completed lab report shall typically consist of the lab report and an Excel sheet uploaded to the link provided on Blackboard.
- **Lab reports are due at the end of the lab**. Example: If you perform a lab on Monday, March 3, from 8:00 to 10:45 AM, the lab report is due at 10:45 AM that day.
- Late labs will *not* be accepted and will be graded as a zero. The labs have been timed so that all the work can be done during the lab. The students are expected to come prepared to the lab by reading the lab material in advance. This is advised so that there shall be a few problems submitting lab reports on time and, in most cases, should not extend beyond the lab period.
- Pre-labs and homework are on Blackboard, and an announcement will be posted on Blackboard for each assignment. **Pre-labs are due before the lab starts, and homework is due one week from when they are assigned**.
- Group members are *encouraged* to exchange contact information. All students in the group are responsible for delivering the lab report to the instructor on time.
- A student who does not turn in 4 or more lab reports will receive an automatic 'F' in the lab course.
- Grade Rebuttals – If you think there was an error in grading you have one week to report it to your lab instructor from the time the graded work was returned to you. After this time, the grades are considered final.
- This course assumes that all work submitted by students will be generated by the students themselves, working individually or in groups. Students should not have another person/entity do the writing of any portion of an assignment for them, which includes hiring a person or a company to write assignments.

Lab Rules and Expectations

- Cell phones must be **turned off** and always put away.
- **No food or drinks** are allowed in the lab, unless a prior medical approval is obtained from the instructor.
- Students must clean and organize their work area before leaving the lab.
- Only students enrolled in the class are allowed in the lab room.
- You are not permitted to leave early unless given explicit permission from the lab instructor. The following lab may be previewed at the end of the current lab. The instructor will inform the class if it is permissible to leave early.
- Submission by email with a copy to all group members constitutes signing the lab report.

Lab safety and policies

The instructor will discuss certain rules and safety guidelines particular to the Physics laboratory and will provide a hand-out at the beginning of the semester that the students must sign before proceeding. Please follow these policies for your own safety and a good lab experience. Any issue about broken, missing, or defective equipment must be brought to the attention of the lab instructor.

Course Schedule

This is a tentative schedule. Some adjustments should be expected. **Week**	**Date**	**Scheduled Lab**
1	Jan 20	Introduction, Math Assessment I, Safety Instructions
2	Jan 27/28	Units and Dimensions Lab
3	Feb 3/4	1D Kinematics
4	Feb 10/11	Acceleration due to Gravity
5	Feb 17/18	**Exam -1 Prep (No lab)**
6	Feb 24/25	Introduction to Vectors – Force Table
7	Mar 3/4	Projectile Motion I
8	**Mar 10**	**No Lab - Spring Break**
9	Mar 17/18	Projectile Motion II
10	Mar 24/25	Atwood's Machine
11	March 31/April 1	Collisions
12	April 7/8	**Exam -2 Prep (No lab)**
13	April 14/15	Friction
14	April 21/22	Simple Harmonic Motion – Spring Motion
15	April 27/28	**Finals Review Session (No lab)**

Grading

1. Each laboratory assignment is worth a variable number of raw points. Lab grades are calculated as the percentage score earned *by the lab group* and are reported on a 100-point scale.
2. Each homework assignment and/or pre-lab is worth between 20 and 50 points and is not scaled. Students will be given at least one week to complete all homework and pre-lab assignments.
3. Students who arrive more than 20 minutes late to a lab session will not receive attendance credit for that lab.
4. Two math assessments are planned, as indicated in the tentative course schedule. Additional non-graded exercises may be used to assess learning and to help students review any necessary background material.
5. Current and final course grades are determined based on the averages calculated in the grading table below.

Lab Report	75%
Attendance	15%
Group contribution	10%
Total	100%

Letter Grade

F = 0 – 59.99%	D = 60 – 69.99%	C = 70 – 79.99%	B = 80 - 89.99%	A = 90 –100%

Extra Credit

There are few ways to earn extra credit in this course.

1. **Math Assessment :** If a student's score on the second math assessment (which uses the same questions as the first) shows a 65% improvement, measured by the reduction in lost points, the student will earn 5% extra credit added to the final course grade.
2. **Physics in Real Life:** To earn this extra credit, students must submit a short analysis of two or more movie or TV scenes that depict physics inaccurately. The report should explain how each scene does and does not follow the physical laws studied in this course. This assignment is worth up to 5% added to the total course grade. Only one submission per student is permitted during the semester. The report must be submitted by the final lab session.

Technology Requirements:

Please contact the I.T. department (helpdesk@tamusa.edu or call (210) 784 4357) at TAMUSA with any technology related questions. You will need a working computer/laptop, with Windows or Mac, or a Chromebook. You can bring your own laptop or use the one from the lab. The lab computer must first be connected to the internet and only after logging into your account, you can use it. To connect to the internet, use the Amazon ethernet cord and connect the computer to the ethernet port on any of the ports available near the wall of the lab. After logging into your account, you can disconnect and use the laptop at your lab table. You will need software to read/write/edit Excel and to read PDF documents. You will also need a proper internet connection. A basic-level scientific calculator might be needed for the math review sessions. All other calculations in the course will be done in Excel. Excel records the calculation process as well as the answer and this allows the instructor to understand what you have done wrong if you don't have the right answer – something that is not possible with a calculator. You can also download RealCalc scientific calculator app from the app store and install it on your phone. This is a very user-friendly app, and I strongly recommend all of you to use this for all lab calculations.

Academic Integrity: We take this very seriously!

According to the Student Code of Conduct, the following are considered violations of Academic misconduct (but are not limited to): Cheating, Plagiarism, Multiple Submissions, Collusion, Lying, and Bribery.

Plagiarism, or copying the words of others with the intent of making it look like your own. Whether you use someone else's phrase word for word, or whether you try and change a few words, or even if you just borrow someone else's original idea and don't give them credit, that's unethical. Use your own

words whenever possible, give credit to wherever, and put direct quotes inside quotation marks. Cheating Involves trying to trick me or others into thinking you did work that you did not do.
Searching the Internet for homework solutions and copying what you find is considered cheating. Searching the internet for help on a topic is fine, if you don't copy the answer. For example, suppose a question asks, "What are Newton's Laws of Motion?". Typing that phrase into any internet search engine and pasting the text in the answer box is considered cheating. Typing "What are Newton's Laws of Motion" into any internet search engine, reading a few web pages, and summarizing the information in your own words is not cheating. Borrowing a previous student's homework, exams, or solution sets is considered cheating.
Collusion is defined as working with another person to cheat. This can include copying someone else's answers to an exam or assignment, doing work for another student, buying or otherwise obtaining homework/exam solutions from any source online or offline, or any other instance of multiple people engaging in some form of Cheating or Dishonesty. Working with other students on an assignment is fine as long as everyone contributes, and each student does their work.
If you have any questions on whether a specific action is considered dishonest, please ask me before engaging in the activity. There is no need to be embarrassed about asking, and there is no penalty for asking.

Texas A&M University San Antonio Important Policies and Resources

TEXAS A&M UNIVERSITY
SAN ANTONIO

University Email Policy and Course Communications

All correspondence between professors and students must occur via university email accounts. You must have your Jaguar email account ready and working. If it is not working, contact the help desk at helpdesk@tamusa.edu or at 210-784-HELP (4357). If you don't hear back within 48 hours, contact them again. They have many requests during the first part of the semester, so you may need to follow up with them.

Academic Accommodations for Individuals with Disabilities

Texas A&M University-San Antonio is committed to providing all students with reasonable access to learning opportunities and accommodations in accordance with The Americans with Disabilities Act, as amended, and Section 504 of the Rehabilitation Act. If you experience barriers to your education due to a disability or think you may have a disability, Disability Support Services is in the Central Academic Building, Suite 210. You can also contact us via phone at (210) 784-1335, visit us at the website or email us at dss@tamusa.edu. Disabilities may include, but are not limited to, attentional, learning, mental health, sensory, physical, or chronic health

conditions. All students are encouraged to discuss their academic accommodation with Disability Support Services and their instructors as soon as possible.

Academic Learning Center

All currently enrolled students at Texas A&M University-San Antonio can utilize the Academic Learning Center for subject-area tutoring. The Academic Learning Center provides free course-based tutoring to all currently enrolled students at Texas A&M University-San Antonio. Students wishing to work with a tutor can make appointments through the Brainfuse online tutoring platform. Brainfuse can be accessed in the Tools section of Blackboard. You can contact the Academic Learning Center by emailing tutoring@tamusa.edu, calling (210) 784- 1307, or visiting the Central Academic Building, room 202. Online tutoring is also available for after hours and weekend assistance.

While tutoring hours may change based on tutor schedules and availability, the current tutoring hours for MATH in the ALC are as follows:

Day of the Week	**Appointments Available**	**Walk-in Tutoring (no appointment needed)**
Monday	8:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Tuesday	8:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Wednesday	8:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Thursday	8:00 AM – 6:00 PM	9:00 AM – 5:00 PM
Friday	8:00 AM – 5:00 PM	11:00 AM – 4:00 PM

Counseling/Mental Health Resources

As a college student, there may be times when personal stressors interfere with your academic performance and negatively impact your daily functioning. If you are experiencing emotional difficulties or mental health concerns, support is available to you through the Student Counseling Center (SCC). To schedule an appointment, visit our website, call 210-784-1331 or visit Madla 120 between the hours of 8:00 AM and 5:00 PM.

All mental health services provided by the SCC are free and confidential (as the law allows). The Student Counseling Center provides brief individual and group therapy, crisis intervention, consultation, case management, and prevention services. Crisis support is available 24/7/365 by calling the SCC at 210-784-1331 or through the TELUS student support App.

The TELUS Student Support App provides a variety of mental health resources to include 24/7/365 support for in the moment distress, crisis support, an anonymous peer-to-peer support network, mental health screenings, podcasts, and articles to improve your mental wellbeing.

Emergency Preparedness

JagE Alert is Texas A&M University-San Antonio's mass notification system. In the event of an emergency, such as inclement weather, students, staff and faculty, who are registered, will have

the option to receive a text message, email with instructions and updates. To register or update your information visit the Jag E Alert System website. You can access more information about Emergency Operations Plan and the Emergency Action Plan on our website. Download the SafeZone App for emergencies or call (210) 784-1911. Non-Emergency (210) 784-1900.

Financial Aid and Verification of Attendance

According to the following federal regulation, 34 CFR 668.21: U.S. Department of Education (DoE) Title IV regulation, a student can only receive Title IV funds based on Title IV eligibility criteria which include class attendance. If Title IV funds are disbursed to ineligible students (including students who fail to begin attendance), the institution must return these funds to the U.S. DoE within 30 days of becoming aware that the student will not or has not begun attendance. Faculty will provide the Office of Financial Aid with an electronic notification if a student has not attended by the published Census Date (the first week of class). Any student receiving federal financial aid who does not attend prior to the published Census Date (the first week of class) will have their aid terminated and returned to the DoE. Please note that any student who stops attending at any time during the semester may also need to return a portion of their federal aid.

Jaguar Writing, Language, and Digital Composing Center (WLDCC)

The Jaguar Writing Center provides writing support to graduate and undergraduate students in all three colleges as well as faculty and staff. Writing tutors work with students to develop reading skills, prepare oral presentations, plan, draft, and revise their written assignments. Our language tutors support students enrolled in Spanish courses and students composing in Spanish for any assignment. Our digital studio tutors support students working on digital projects such as e-portfolios, class presentations, or other digital multimedia projects.

The Writing Center offers face-to-face, synchronous online, and asynchronous digital appointments. Students can schedule appointments with the Writing Center in JagWire under the **Student Services tab**. Click on **Writing, Language, and Digital Composing Center** to make your appointment. Students wanting to work in real time with a tutor can schedule an **Online Appointment.** Students wishing to receive asynchronous, written feedback from a tutor can schedule an **e-Tutoring appointment**. More information about what services we offer, how to make an appointment, and how to access your appointment can be found on the Writing Center's website. The Writing Center can also be reached by emailing: writingcenter@tamusa.edu.

Meeting Basic Needs

Any student who has difficulty affording groceries or accessing sufficient food to eat every day or who lacks a safe and stable place to live and believes this may affect their performance in the course, is urged to submit a CARE report for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to direct you to available resources. The General's Store is a food pantry that is available on campus as well.

Military Affairs

Veterans and active-duty military personnel are welcomed and encouraged to visit the Office of Military Affairs for any question involving federal or state VA Education Benefits. Visit the Patriots' Casa building, room 202, or to contact the Office of Military Affairs with any questions at military.va@tamusa.edu or (210)784-1397.

Religious Observances

Texas A&M University-San Antonio recognizes the wide variety of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided with an opportunity to make up any examination, study, or course work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes for regular session classes.

Statement of Harassment and Discrimination

Texas A&M University-San Antonio is committed to the fundamental principles of academic freedom, equal opportunity, and human dignity. To fulfill its multiple missions as an institution of higher learning, A&M-San Antonio encourages a climate that values and nurtures collegiality and the uniqueness of the individual on our campus and within our state, nation, and world. All decisions and actions involving students and employees are to be based on applicable law and individual merit. Texas A&M University-San Antonio, in accordance with applicable federal and state law, prohibits discrimination, including harassment, based on race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, or pregnancy/parenting status. Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the University's Civil Rights Officer at 210-784-2061 or titleix@tamusa.edu. Texas A&M University-San Antonio faculty are committed to providing a safe learning environment for all students and for the university. If you have experienced any form of sex discrimination or harassment, including sexual assault, sexual harassment, domestic or dating violence, or stalking based on sex, know that help and support are available. A&M-San Antonio's Title IX Coordinator can support those impacted by such conduct in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The university strongly encourages all students to report any such incidents to the Title IX Coordinator. Please be aware that all A&M-San Antonio employees (other than those designated as confidential resources such as counselors and trained victim advocates) are required to report information about such discrimination and harassment to the university. This means that if you tell a faculty member about a situation of sexual harassment, sexual violence, or other related sex-based misconduct, the faculty member must share that information with the university's Title IX Coordinator (titleix@tamusa.edu, 210-784-2061, CAB 439K). If you wish to speak to a confidential employee who does not have this reporting requirement, you can contact the Student Counseling Center at (210) 784-1331 or visit them in Madla 120.

Pregnant/Parenting Students

Texas A&M-San Antonio does not require a pregnant or parenting student, solely because of that status or issues related to that status, to (1) take a leave of absence or withdraw from their degree or certificate program; (2) limit the student's studies; (3) participate in an alternative program; (4) change the student's major, degree, or certificate program; or (5) refrain from joining or cease participating in any course, activity, or program at the University. The university will provide reasonable accommodation for pregnant students as it would be provided to a student with a temporary medical condition that is related to the health and safety of the student and the student's unborn child. These could include maintaining a safe distance from substances, areas, and activities known to be hazardous to pregnant individuals and their unborn child; excused absences because of illness or medical appointments; modified due dates for assignments; rescheduled tests/exams; taking a leave of absence; and being provided access to instructional materials and video recordings of lectures for excused absences, if these would be provided to any other student with an excused absence. Pregnant/parenting students are encouraged to contact the Title IX Coordinator with any questions or concerns related to their status (titleix@tamusa.edu; 210-784-2061; CAB 439K).

Texas A&M-San Antonio has also designated the Title IX Coordinator as the liaison officer for current or incoming students who are the parent or guardian of a child younger than 18 years of age. The Title IX Coordinator can provide students with information regarding support services and other resources. Young Jaguars can support parenting students with daycare if students meet this criteria: (1) must be enrolled in classes at Texas A&M-San Antonio in the current semester, (2) must be Pell eligible or a single parent, (3) child(ren) must be aged 3 to 12-years-old, and (4) child(ren) must be enrolled in Pre-K-3 through 6th grade. For more information, please contact Young Jaguars at youngjaguars@tamusa.edu or call (210) 784-2636.

Students' Rights and Responsibilities

The following statement of students' rights and responsibilities is intended to reflect the philosophical base upon which University Student Rules are built. This philosophy acknowledges the existence of both rights and responsibilities, which is inherent to an individual not only as a student at Texas A&M University-San Antonio but also as a citizen of this country.

Students' Rights

1. A student shall have the right to participate in a free exchange of ideas, and there shall be no University rule or administrative rule that in any way abridges the rights of freedom of speech, expression, petition and peaceful assembly as set forth in the U.S. Constitution.
2. Each student shall have the right to participate in all areas and activities of the University, free from any form of discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, and pregnancy/parenting or veteran status in accordance with applicable federal and state laws.

3. A student has the right to personal privacy except as otherwise provided by law, and this will be observed by students and University authorities alike.

4. Each student subject to disciplinary action arising from violations of university students' rules shall be assured a fundamentally fair process.

Students' Responsibilities

1. A student has the responsibility to respect the rights and property of others, including other students, the faculty, and administration.
2. A student has the responsibility to be fully acquainted with the published University Student Rules found in the Student Handbook, Student Code of Conduct, on our website, and University Catalog, and to comply with them, as well as with federal, state, and local laws.
3. A student has the responsibility to recognize that student actions reflect upon the individuals involved and upon the entire University community.
4. A student has the responsibility to recognize the University's obligation to provide a safe environment for learning.
5. A student has the responsibility to check their university email for any updates or official university notifications.

Students are expected to exhibit a high level of honesty and integrity in their pursuit of higher education. Students engaging in an act that violates the standards of academic integrity will find themselves facing academic and/or disciplinary sanctions. Academic misconduct is any act, or attempt, which gives an unfair advantage to the student. Additionally, any behavior specifically prohibited by a faculty member in the course syllabus or class discussion may be considered as academic misconduct. For more information on academic misconduct policies and procedures please review the Student Code of Conduct or visit the resources available in the OSRR website.

Important Spring 2026 Dates **Dates**	**Event**
January 13	Tuition and Fee Payments deadline
January 19	Martin Luther King Jr. Day – No Classes
January 20	First Day of Class
February 4	Census Date
March 6-23	Midterm grading period
March 9-14	Spring Break
April 3	Study Day – No classes
April 17	Last day to drop with an automatic withdrawal
May 1	Last day to drop a course or withdraw from the university
May 4	Last Day of Classes

The complete Academic Calendar as available on our website.

Artificial Intelligence Policy

No Use of Generative AI Permitted PHYS 1301

This assumes that all work submitted by students will be generated by the students themselves, working individually or in groups. Students should not have another person/entity do the writing of any portion of an assignment for them, which includes hiring a person or a company to write assignments and/or using artificial intelligence (AI) tools like ChatGPT. Use of any AI-generated content in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.