General Physics I 1401.088 TR

Course Syllabus: Fall 2025

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
						6:00 – 8:30

The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Course Description: Four credit hours. This course is for pre-dental, biology, pre-medical, pre-pharmacy, and prearchitecture majors and other students who need a two-semester technical course in physics. The course includes mechanics, fluids, heat, and waves.

Required Textbook(s):
This course will utilize Webassign online resources for homework and exams. Access to the assignments and the electronic copy of the textbook Serway and Vuille, *College Physics*, Twelfth Edition, Cengage Learning, Stamford, CT, 2015 is provided by access to Webassign on the internet.

Publisher: Cengage Learning

ISBN Number: 9780357976463

Calculator: You will need a scientific calculator or graphing calculator for this class.

Student Learning Outcomes:

Upon successful completion of the lecture portion of this course, students will:

1401.1 Determine the components of linear motion (displacement, velocity, and acceleration) and especially motion under conditions of constant acceleration.

1401.2 Apply Newton's Laws to physical problems including gravity.

1401.3 Solve problems using principles of energy.

1401.4 Use principles of impulse and linear momentum to solve problems.

1401.5 Solve problems in rotational kinematics and dynamics, including the determination of the location of the center of mass and center of rotation for rigid bodies in motion.

1401.6 Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.

1401.7 Demonstrate an understanding of equilibrium, including the different types of equilibrium.

1401.8 Discuss simple harmonic motion and its application to quantitative problems or qualitative questions.

1401.9 Solve problems using the principles of heat and thermodynamics.

Upon successful completion of the laboratory portion of this course, students will:

1001.1 Demonstrate techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.

1001.2 Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.

1001.3 Discuss experimental observations and how they relate to qualitative questions and quantitative problems.

Core Curriculum Purpose and Objectives:

Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning.

Courses in the foundation area of mathematics focus on quantitative literacy in logic, patterns, and relationships. In addition, these courses involve the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experience.

College Student Learning Outcomes:

Critical Thinking Skills

CT.1 Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

Communication Skills

CS.1 Students will effectively develop, interpret and express ideas through written communication.

Empirical and Quantitative Skills

EQS.1 Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form

EQS.2 Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

Teamwork

TW.2 Students will consider different viewpoints as a member of a team and work with others to support and accomplish a shared goal.

Course Outline:

Chapter 1: Introduction and Mathematical Concepts
Chapter 2: Kinematics in One Dimension
Chapter 3: Kinematics in Two Dimensions
Chapter 4: Forces and Newton's Laws of Motion
Chapter 7: Rotational Motion and the Law of Gravity
Chapter 5: Energy / Chapter 13: Vibrations and Waves (Springs)
Chapter 6: Momentum and Collisions
Exam 1

Chapter 9: Solids and Fluids
Chapter 10: Thermal Physics / Chapter 11: Energy in Thermal Processes
Chapter 12: The Laws of Thermodynamics
Exam 2

Chapter 13: Vibrations and Waves (SHM) / Chapter 14: Sound
Exam 3

Evaluation/Grading Policy:
Homework consists of assignments from the chapters administered through Webassign and represent 15% of your final grade. The homework problems can be reworked up to five times with diminishing credit for each attempt. The last grade earned for each assignment will be posted in the Blackboard gradebook. Since this course covers a lot of material, there are no extensions on due dates in order to maintain the course schedule.

Quizzes consists of short summary questions / problems over the chapter assignments and represent 15% of your final grade. These are a mixture of multiple choice and free response type questions. The quizzes are located and completed in the Blackboard content page and are available according to the schedule in the quizzes folder in Blackboard. These are timed assignments and must be completed in one session.

Laboratory work is completed through the Lab Procedures found in the Blackboard content page and represents 10% of your final grade. Obtain the lab kit from the NTCC college store according to their instructions as soon as possible. Because students receive their lab kits at different times, I have begun the due dates three weeks into the semester. There are "virtual" labs that are due first that do not require materials from the lab kit. For this reason, the lab procedures may not coincide with the unit material that is being completed at the time. I encourage you to spend adequate time performing the labs to help strengthen your understanding of the concepts in the unit material. Be sure to follow the instructions posted in the Blackboard folder for completing the lab reports for submission.

There will be 3 Unit Exams (weighted equally) which represent 60% of your final grade. The exams are administered in Webassign according to the timeline shown below. The exams open at midnight on the day before the due date and are available until 11:59 pm on the due date. The exams will utilize TEAMS to proctor the exam to produce a screen share and a webcam video during the duration of the exam. There will be an introductory assignment to allow you the opportunity to use the TEAMS platform to produce a practice video prior to the first exam that requires it. The exams allow two attempts for each individual question for diminishing credit, but only one submission is allowed for each exam. There is a three-hour time limit for each exam, and the exams must be completed in a single session (the timer does not stop once you begin the exam). **There are no makeup exams available if you miss a due date.**

In order to provide an opportunity to collaborate with other members of the class and avoid isolation as you work through the course materials, I have created starting threads for each unit in the Discussion tab and have titled these "Fuzzy Points". This is your opportunity to seek help from your fellow students in asking questions about concepts or specific problems in the assignments. I monitor these boards and try to respond if there are no student responses. Although these are not graded, your participation is highly encouraged in order to help you gain insights into how others approach the information in the course. Webassign grades are updated automatically in Blackboard throughout the semester. If you see a grade in Blackboard that does not match an assignment grade in Webassign, it probably was in progress at the time of refreshing. Check back to see if it updates. Please be sure to inform me if a grade does not update. The Blackboard gradebook is the official course grade.

The letter grading system is: A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (0-59%).
All homework assignments and lab procedures are available from the beginning of the course. You are encouraged to work ahead at your own pace on those materials.

NTCC Academic Honesty Statement:
"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

Academic Ethics
The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

ADA Statement:
It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to arrange an appointment with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the NTCC Catalog or Student Handbook.

Family Educational Rights And Privacy Act (Ferpa):
The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

6 Drop Rule:
Students who enrolled in Texas public institutions of higher education as first-time college students during the Fall 2007 term or later are subject to section 51.907 of the Texas Education Code, which states that an institution of higher education may not permit a student to drop (withdraw with a grade of "W") from more than six courses. This six-course limit includes courses that a transfer student has previously dropped at other Texas public institutions of higher education if they fall under the law. Students should be sure they fully understand this drop limit before they drop a course. Please visit the admissions office or counseling/advising center for additional information and assistance.

Other Course Policies:
The college's official means of communication is via your campus email address. I will use your campus email address and Blackboard to communicate with you outside of class. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.

Tentative Course Timeline (*note* instructor reserves the right to make adjustments to this timeline at any point in the term): This timeline is your suggested schedule to complete the homework assignments and quizzes for each chapter. The assignments and quizzes are available from the beginning of the course. The assignments and associated quizzes are due according to the dates posted in Webassign. The quizzes are located in the quiz folder on the content page of Blackboard. The exams located in Webassign will open one day before the due date.

Chap.	Title	*Week*	*Key Due Dates**
1	Introduction and Mathematical Concepts	*1*	(See Webassign)
2	Kinematics in One Dimension	*1 - 2*	(See Webassign)
3	Kinematics in Two Dimensions	*2 - 3*	(See Webassign)
4	Forces and Newton's Laws of Motion	*4 - 5*	(See Webassign)
7	Rotational Motion and the Law of Gravity	*6*	(See Webassign)
5 / 13	Work and Energy / Springs	*7 -8*	(See Webassign)
6	Impulse / Momentum	*8 – 9*	(See Webassign)
	Exam #1		***10/27/25***
9	Solids and Fluids	*10*	(See Webassign)
10 / 11	Thermal Physics / Thermal Processes	*11 – 12*	(See Webassign)
12	The Laws of Thermodynamics	*12 – 13*	(See Webassign)
	Exam #2		***11/25/25***
13 /14	Vibrations and Waves (SHM) / Sound	*15 - 16*	(See Webassign)
	Exam #3		***12/11/25***

**This calendar may be adjusted to the needs of the course. Changes will be based on the course progress. The exam dates could be moved one or two days up or down. The date of Exam #3 is fixed and will not change.*