PHYS 1415 082 – Introduction to Physical Science I Online

Course Syllabus: Fall 2026

"Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed."

Instructor: Mark Ellermann
Office: MS 117
Phone: 903-434-8297
Email: mellermann@ntcc.edu

Weekday	Office Hours
Monday	Online
Tuesday	Online
Wednesday	Online
Thursday	Online
Friday	Online

This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.

Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.

Course Description:

This course, designed for non-science majors, surveys topics from physics, chemistry, geology, astronomy, and meteorology. Four hours of college credit.

Prerequisite(s): TSI Complete Status

Student Learning Outcomes:

1415.1. Understand simple qualitative concepts and solve algebraic problems of physics and astronomy relating to linear motion (displacement, velocity, acceleration, force, and Newton's Laws of Motion).

1415.2. Understand simple qualitative concepts and solve algebraic problems of physics and astronomy relating to energy, work, power, and the Law of Conservation of Energy.

1415.3. Understand simple qualitative concepts and solve algebraic problems of physics and astronomy relating to momentum and the Law of Conservation of Momentum.

1415.4. Understand simple qualitative concepts and solve algebraic problems of physics and astronomy relating to heat and thermodynamics.

1415.5. Understand simple qualitative concepts and solve algebraic problems of physics and astronomy relating to electricity and magnetism.

1415.6. Understand simple qualitative concepts and solve algebraic problems of physics and astronomy relating to electromagnetic (transverse waves) and sound (longitudinal) waves.

1415.7. Understand simple qualitative concepts and solve algebraic problems of physics and astronomy relating to the solar system, stars, and universe.

1415.8. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner.

Evaluation/Grading Policy:

The breakdown of the course requirements is as follows:

%	Requirement
70%	3 Exams + Final Exam (All equally weighted)
15%	Homework from Mastering Physics
15%	Carolina Distance Learning Labs (Mandatory completion to receive a passing grade in the course)

Homework will represent 15% of your grade. Online assignments are graded homework exercises posted on Pearson Mastering Physics. Homework problems can be reworked an unlimited number of times with decreasing credit for multiple attempts. The last grade earned for each homework assignment will be posted for the final grade. The exams will become available in Mastering Physics two calendar days before their due date. The exams must be completed during the scheduled window. The exams will utilize a lockdown browser during administration. There are no makeup assignments for exams. Course averages will be updated in Blackboard after each exam. The lab procedures are found in the lab folder toward the bottom of the home page of the Blackboard screen. **The lab portion of the course must be completed to receive a passing grade for the course. Using AI responses, instead of your own, will be counted as incomplete.** Instructions for obtaining your lab kit are found in the Start Here folder in Blackboard. The submission of the lab reports is performed using the links found in the lab procedures folder. Instructions for completing the reports is included in the lab folder in Blackboard.

Semester grades will be earned as follows

Percentage	Letter Grade
90% and above	A
80 %–89%	B
70 %–79%	C
60%–69 %	D
59.9% and below	F

Using the Normal Style text insert full detailed grading policies

Required Instructional Materials:

Pathways to Astronomy, 6th edition by Scheider and Arny

Publisher: Pearson **ISBN Number:**

Optional Instructional Materials:

Print upgrade of the textbook, *Conceptual Physical Science* (6th Ed.), Hewitt, Suchocki & Hewitt, Peasron

Available through the NTCC College Bookstor

Minimum Technology Requirements:

Computer Access and Internet Access, as well as a Scientific Calculator

Required Computer Literacy Skills:

Access to Blackboard, Pearson Mastering Physics, and Carolina Distance Learning Labs to complete all assignments and tests.

Course Structure and Overview:

The course is divided into four units with individual exams covering the first four units as shown below. The material from the fourth unit is included on the comprehensive final exam.

Chapter 1 Patterns of Motion and Equilibrium
Chapter 2 Newton's Laws of Motion
Chapter 3 Momentum and Energy
Chapter 4 Gravity, Projectiles, and Satellites
Exam 1
Chapter 5 Fluid Mechanics
Chapter 6 Temperature, Heat, and Thermodynamics
Chapter 7 Heat Transfer and Change of Phase
Exam 2
Chapter 8 Static and Current Electricity
Chapter 9 Magnetism and Electromagnetic Induction
Chapter 10 Waves and Sound
Chapter 11 Light
Exam 3
Chapter 26 The Solar System
Chapter 27 Stars and Galaxies
Final Exam

Use of Proctorio:
To ensure all students are graded fairly and no one has the unfair advantage of cheating on quizzes and tests, Proctorio will be used. The browser add-on makes use of the webcam to flag any suspicious activity and report it to the instructor. You have the option to take the test at a proctored location. If you live near NTCC, you are welcome to use the Student Services Testing Center free of charge. You may use a testing center near your location, but you must handle the arrangements for the testing center and forward the necessary contact to the instructor for approval. If in-person proctoring is used, the instructor must approve of the proctoring a minimum of one week before the proctored test. Failure to arrange alternative proctoring early enough will result in Proctorio being required for the test.

Communications:

I will respond to messages within 24 hours. Check your announcements in Blackboard often. This is my preferred method for group announcements. You may use the communication options available ("ask your instructor") on Mastering Physics for communicating with me. Please use your NTCC email when setting up your Mastering Physics account. Make sure you keep your campus email cleaned out and below the limit so you can receive important messages.

Institutional/Course Policy:

Students are expected to complete assignments during the assigned window. Exams must be completed during the allowed window. One due date extension will be allowed on daily assignments during the semester without penalty. Any additional extensions will only receive a 70% maximum grade.).

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (http://www.ntcc.edu/) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

Statement Regarding the Use of Artificial Intelligence (AI) Technology:

Employees and students shall be permitted to explore artificial intelligence (AI) and implement its use in and out of the classroom in accordance with policy and administrative regulations. The use of AI shall only be as a support tool to enhance student outcomes or as necessary to engage in research and shall never take the place of faculty, staff, and student decision-making. Any use of AI must comply with law, policy, and administrative regulations relating to student and employee privacy and data security. A student shall only use AI tools with faculty permission and shall be expected to produce original work and properly credit sources, including AI tools used in creating the work.

Example:
APA (7th edition)
OpenAI. (2026). ChatGPT (March 25 version) [Large language model]. https://chat.openai.com/
MLA (9th edition)

OpenAI. ChatGPT. 25 Mar. 2026, https://chat.openai.com/.

Employees or students who use AI tools to deceptively harm, bully, or harass others shall be disciplined in accordance with policy. [See DH, DIA series, FFD series, FFE, FLB, and the FM series] AI Use by Employees and Students. Northeast Texas Community College 225500 TECHNOLOGY RESOURCES CRB ARTIFICIAL INTELLIGENCE (LOCAL) DATE ISSUED: 12/8/2025 1 of 1 UPDATE 50 CRB(LOCAL)-AJC Adopted: 12/16/2025

NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodation 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 accommodation as required to afford equal educational opportunity. It is the student's responsibility to request accommodation. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

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.

Tentative Course Schedule:

Chap.	Title	*Week*	**Key Due Dates**	*Labs*
1	Patterns of Motion and Equilibrium	*1*	*9/7/26*	Lab Safety Agreement Scientific Method & Measurements – Measurement and Uncertainty
2	Newton's Laws of Motion			Scientific Method & Measurements – The Scientific Method
3	Momentum and Energy	*2*	*9/7/26*	Find Acceleration Due to Gravity Lab Newton's Laws Lab
4	Gravity, Projectiles, and Satellites			
	Exam 1	***3***	***9/14/26***	Simple Harmonic Motion Lab
5	Fluid Mechanics			Torque and Equilibrium Lab
6	Temperature, Heat, and Thermodynamics			
7	Heat Transfer and Change of Phase	4	***9/21/26***	Torecelli's Theorem Lab Specific Heat Lab
	Exam 2			
8	Static and Current Electricity	*5*	*9/28/26*	States of Matter Lab
9	Magnetism and Electromagnetic Induction			Electrostatics Lab
10	Waves and Sound	*6*	*10/5/26*	Refraction Lab Sound and Resonance Lab
11	Light Lab – N/A			
	Exam 3	***7***	***10/12/26***	Introduction to the Solar System Lab
26	The Solar System			Gravity in the Solar System Lab
27	Stars and Galaxies			
	Final Exam (Comprehensive)	***8***	***10/15/26***	