

# PHYS 1415.088 TR Introduction to Physical Science I Online

Course Syllabus: Spring 2022



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

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	Online	Online	Online	Online	Online	6:00 – 7:00 pm

***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.

1401.L1 Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner.

**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.

**Program 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.

EQS.3 Students will draw informed conclusions from numerical data or observable facts that are accurate, complete, and relevant to the investigation.

Teamwork

TW.2 Students will work with others to support and accomplish a shared goal.

**Evaluation/Grading Policy:**

3 Exams + Final Exam (All equally weighted)	75%
Homework from Mastering Physics	15%
Escience Labs	10%
Total	100%

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 menu on the left side of the Blackboard screen. 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.

### **Grading Scale:**

A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 0-59%

### **Required Instructional Materials:**

This course will utilize Pearson Mastering Physics online resources for homework and exams. Access to the assignments and the electronic copy of the textbook, *Conceptual Physical Science* (6th Ed.), Hewitt, Suchocki & Hewitt, Pearson is provided by access to Mastering Physics on the internet. This course is participating in the Inclusive Access program this semester. Please refer to the instructions found in the “Start Course Here” folder in Blackboard to obtain access to Pearson Mastering Physics.

The lab component of the course will use Escience Labs Physical Science Kit Code 2070. A voucher for the kit is available through the College Store.

You will need a scientific calculator for this course.

**Publisher:** Pearson

**ISBN Number:**

### **Optional Instructional Materials:**

Print upgrade of the textbook, *Conceptual Physical Science* (6th Ed.), Hewitt, Suchocki & Hewitt, Pearson Available through the NTCC College Store.

### **Minimum Technology Requirements:**

Ability to navigate the internet

**Required Computer Literacy Skills:** None.

### **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**

**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 in MasteringPhysics (“ask your instructor”) for communicating with me concerning individual homework problems. For faster response time, you may wish to use my email ([mellermann@ntcc.edu](mailto:mellermann@ntcc.edu)) since these show up on my phone. The college’s official means of communication is via your campus email address. 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 coursespecific 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.

**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 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 request accommodations. 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 Timeline (\*note\* instructor reserves the right to make adjustments to this timeline at any point in the term):**

<b>Chap.</b>	<b>Title</b>	<b>Week</b>	<b>Key Due Dates*</b>
1	Patterns of Motion and Equilibrium Lab 3 – Measurements and Uncertainty Lab 9 – 1D Kinematics	1 & 2	1/28/22
2	Newton's Laws of Motion Lab 8 – Newton's Laws Lab 7 - Friction	2 & 3	2/4/22
3	Momentum and Energy Lab 10 – Conservation of Energy	3 & 4	2/11/22
4	Gravity, Projectiles, and Satellites Lab – N/A	4 & 5	2/16/22
	<b>Exam 1</b>	<b>5</b>	<b>2/18/22</b>
5	Fluid Mechanics Lab – N/A	6	2/25/22
6	Temperature, Heat, and Thermodynamics Lab – N/A	7	3/4/22
7	Heat Transfer and Change of Phase Lab 11 – Latent Heat and Specific Heat	8	3/11/22
	Spring Break (Week 9 March 14-18)		
	<b>Exam 2</b>	<b>10</b>	<b>3/25/22</b>
8	Static and Current Electricity	10 & 11	4/1/22
9	Magnetism and Electromagnetic Induction	12	4/8/22
10	Waves and Sound Lab 12 – Properties of Waves	12 & 13	4/15/22
11	Light Lab – N/A	13 & 14	4/20/22
	<b>Exam 3</b>	<b>14</b>	<b>4/22/22</b>
26	The Solar System Lab – N/A	15	4/29/22
27	Stars and Galaxies Lab – N/A	15 & 16	5/6/22
	<b>Final Exam (Comprehensive)</b>	<b>17</b>	<b>5/11/22</b>