



Intro to Physical Science – PHYS 1415.001 (Face-to-Face)

Course Syllabus: Fall 2020

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

Instructor: Mr. Mark Ellermann II

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	N/A	8 – 9:20 11 – 12:20	N/A	8 – 9:20 11 – 12:20 1:30 – 4:20	N/A	N/A

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:

Lecture: 65% of total grade

20% - Homework (MasteringPhysics)

35% - Regular test (3 during semester)

10% - Final Exam

Lab: 35% of total grade

10% - Prepared for lab

15% - Conduct during lab

10% - Submitted lab work

The letter grading system is:

A (90% - 100%)

B (80% - 89%)

C (70% - 79%)

D (60% - 69%)

F (< 59%)

Required Instructional Materials: *Conceptual Integrated Science, 3rd ed.* by Hewitt, Lyons, Suchocki, and Yeh

Publisher: Pearson

ISBN Number: 978-0-135-19739-4

Optional Instructional Materials: *The Cartoon Guide to Physics*, by Larry Gonick and Art Huffman

**This book will not be referenced in class, but can serve as a convenient, alternate, explanation for difficult concepts.

Minimum Technology Requirements: Internet access, scientific calculator

Required Computer Literacy Skills: Internet browsing to access Blackboard and Pearson MyPhysicsLab

Course Structure and Overview: The course will be taught as a lecture, with practice problems interspersed through the lesson. Homework will be online through MyPhysicsLab.

Communications: Email will be responded to within 24 hours IF SENT SUNDAY-THURSDAY. Due to the lack of internet availability at my home, I cannot guarantee responses over the weekend, though I will do my best. You can also call my office during office hours if you need to speak with me but can't make it to campus. However, I prefer face-to-face discussions, especially if you have a question about a homework problem. Any information that I send out will be done in class, via Blackboard, or via NTCC email. I will NOT email sensitive information to email addresses that are not "@ntcc.edu".

Institutional/Course Policy: Late work will not be accepted without prior approval by the instructor. Students and instructor are expected to treat each other with respect in and out of the classroom. Prompt attendance is expected for all class meetings. During lecture, students are expected to be attentive to the topic discussed. Students found being consistently inattentive will be asked to leave.

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.

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):

Week	Topic	Text Reference	
1	Introduction to Science	Sections 1.3 – 1.6, 1.9	
2	Motion	Sections 2.3 – 2.9	
	Exam 1		
3	Force and Motion	Sections 3.1 – 3.4	
4	Force and Motion	Sections 3.5 – 3.6	
5	Momentum and Energy	Sections 4.1 – 4.4	
6	Momentum and Energy	Sections 4.5 – 4.11	
	Exam 2		
7	Heat	Sections 6.4 – 6.9	
8	Sound	Sections 8.1 – 8.5	
	Exam 3		
9	Light	Sections 8.6 – 8.14	
10	Electricity and Magnetism	Sections 7.1, 7.2, 7.4 – 7.15	
	Exam 4		
11	Atoms and the Periodic Table	Sections 9.1 – 9.5, 9.7	
12	Investigating Matter	Chapter 11	
13	The Solar System	Chapter 28	
14	The Universe	Chapter 29	
15	Unassigned		
16	Final Exam (comprehensive)		

Lab Schedule

Week	Lab Topic
1	No Lab
2	Lab Safety/Experiments/Data Collection/Graphing
3	Motion
4	Energy
5	Velocity
6	Momentum
7	Work and Power
8	Heat and Temperature
9	Wave Motions and Sound
10	Electricity
11	Magnetism
12	The Universe
13	The Solar System
14	
15	

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