



General Physics II 1402.042 DC

Course Syllabus: Spring 2018

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“Northeast Texas Community College exists to provide responsible, exemplary learning opportunities.”

Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	7:45 – 8:15 3:40 – 4:10	7:45 – 8:15 3:40 – 4:10	7:45 – 8:15 3:40 – 4:10	7:45 – 8:15 3:40 – 4:10	7:45 – 8:15 3:40 – 4:10	

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.

Catalog Course Description: 4 credit hours.

Lecture/Lab/Clinical: Three hours of lecture and three hours of lab each week. Prerequisite: PHYS 1401

This course is for pre-dental, biology, pre-medical, pre-pharmacy, pre-architecture majors, and other students who need a two-semester technical course in physics. Topics include electricity, magnetism, and modern physics.

Required Textbook(s):

This course will utilize the textbook Serway and Vuille, *College Physics*, Tenth Edition, Cengage Learning, Stamford, CT, 2015.

Publisher: Cengage Learning

ISBN Number: 978-1-285-76249-4

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

Student Learning Outcomes:

Upon successful completion of this course, students should (1) *understand qualitative concepts*, and (2) *solve trigonometric problems* of physics relating to:

- 1) Electric charge, electric fields, electric potential, electric potential energy, potential difference, Coulomb’s Law, and Gauss’ Law
- 2) Electric circuits, electric power, capacitance, resistance, Ohm’s Law, Kirchhoff’s Rules
- 3) Magnetism, magnetic fields, magnetic force, Ampere’s Law, Faraday’s Law, Lenz’s Law
- 4) Electromagnetic waves, reflection, Snell’s Law, Brewster’s Law, lenses, diffraction
- 5) Modern physics including atomic physics, nuclear physics, quantum mechanics, and relativity.

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

Course Outline:

Lectures & Discussions:

Chapter 15: Electric Forces and Electric Fields – 1 week

Chapter 16: Electrical Energy and Capacitance – 1 week

Chapter 17: Current and Resistance – 1 week

Chapter 18: Direct Current Circuits – 1 week

Chapter 19: Magnetism – 1 week

Chapter 20: Induced Voltages and Inductance – 1 week

Chapter 21: Alternating-Current Circuits and Electromagnetic Waves – 1 week

Chapter 22: Reflection and Refraction of Light – 1 week

Chapter 23: Mirrors and Lenses – 1 week

Chapter 28: Atomic Physics – 1 week

Chapter 29: Nuclear Physics – 1 week

TEST 1: Chapters 15-16

TEST 2: Chapters 17-18

TEST 3: Chapters 19-21

TEST 4: Chapters 22-23

FINAL EXAM Chapters 15-23,28-29

Evaluation/Grading Policy:

Homework and laboratory work will represent 25% of your grade. There will be 4 Unit Tests and a comprehensive Final Exam. The average of the tests will represent 75% of your grade. The letter grading system is: A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (0-59%).

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.