



CHIPOLA COLLEGE

COURSE SYLLABUS

Chipola's website: www.chipola.edu

COURSE TITLE:

Physics I with Calculus

COURSE NUMBER:

PHY 2048C

COURSE DESCRIPTION (with prerequisites):

The first course in a two-semester sequence intended primarily for students majoring in physics, mathematics, chemistry or engineering. Course includes the study of forces, statics, linear motion, circular motion, momentum, energy, gravity, relativity, oscillatory motion, ideal gases, thermal properties of matter and thermodynamics, with laboratory applications of these topics. Corequisite or Prerequisite: MAC 2312 (Calculus and Analytic Geometry II). Four hours lecture and two hours laboratory per week. 5 semester hours credit.

NAME(S) OF INSTRUCTORS:

Dr. Jeff Bodart

EFFECTIVE ACADEMIC YEAR:

2020-2021

REQUIRED TEXTBOOKS AND INSTRUCTIONAL MATERIALS:

Essential University Physics, Richard Wolfson, Addison-Wesley, 3rd edition.
ISBN: 9780134413167

GRADING POLICY:

The standing of a student in each course is expressed by one of the following letters and corresponding grading system:

A – 90 – 100

B – 80 – 89

C – 70 – 79

D – 60 – 69

F – 59 or less

The Chipola Catalog provides policies and procedures regarding the grading system. A student's Grade Point Average is derived from the grading system/quality point scale.

ATTENDANCE AND WITHDRAWAL POLICIES:

Chipola College expects regular attendance of all students and for all instructors to record attendance daily. Students who are absent from classes for any reason other than official college activities must satisfy the instructor concerned that the absence was due to illness or other clearly unavoidable reasons. Otherwise, the student may suffer grade loss at the discretion of the instructor. Chipola policy allows each instructor to specify in the Instructor

First Day Handout whether or not an absence is excusable and what effect the absence or tardy may have on the grade.

A student is allowed to repeat a course a maximum of three (3) times. **On the third attempt a student (1) must bear the full cost of instruction (unless waived by Student Services), (2) cannot withdraw, and (3) must receive a grade.**

MAKE-UP POLICY:

Chipola allows each instructor to specify in the Instructor First Day Handout the makeup policy.

ACADEMIC HONOR CODE POLICY:

Students are expected to uphold the Academic Honor Code, which is based on the premise that each student has the responsibility to (1) uphold the highest standards of academic honesty in his/her own work; (2) refuse to tolerate academic dishonesty in the college community; and (3) foster a high sense of honor and social responsibility on the part of students. Further information regarding the Academic Honor Code may be found in the Chipola Catalog, Student Governance section.

STUDENTS WITH DISABILITIES POLICY:

Chipola College is committed to making all programs and facilities accessible to anyone with a disability. Chipola's goal is for students to obtain maximum benefit from their educational experience and to effectively transition into the college environment. Students with disabilities are requested to voluntarily contact the Office of Students with Disabilities to complete the intake process and determine their eligibility for reasonable accommodations.

NOTICE OF EQUAL ACCESS/EQUAL OPPORTUNITY AND NONDISCRIMINATION:

Chipola College does not discriminate against any persons, employees, students, applicants or others affiliated with the college in regards to race, color, religion, ethnicity, national origin, age, veteran's status, disability, gender, genetic information, marital status, pregnancy or any other protected class under applicable federal and state laws, in any college program, activity or employment.

Wendy Pippen, Associate Vice President of Human Resources, Equity Officer and Title IX Coordinator, 3094 Indian Circle, Marianna, FL 32446, Building A, Room 183C, 850-718-2269, pippenw@chipola.edu.

LIBRARY AND ON-LINE REFERENCE MATERIALS:

The library is a comprehensive learning resource center providing information in print, electronic, and multimedia format to support the educational objectives of the College. On-line catalogs, e-books, and electronic databases can be accessed through the Library Resources link within your course in Canvas or by using the *Search* icon on the Chipola Library website at www.chipola.edu/library. If you have questions about database usage, consult the "How to Use the Chipola Databases" on the Library website or call the Library at 850/718-2274 during regular hours. Library hours are posted each semester at the building entrance and on the Library website. See your Instructor First Day Handout for individual instructor recommendations and resources.

TECHNOLOGY RESOURCES:

The college's learning management system is **Canvas**. Classes become available on Canvas on the first day of the semester. It is the student's responsibility to log onto the Canvas system the first day of class to establish the first day of attendance and to check announcements. All official class communication must be through Canvas. For further information, contact your instructor or the Director of Learning Resources. The Canvas support hotline is available online in live chat and on the phone, toll-free, at 855-308-2812 for any issues utilizing Canvas. The **Technology Center**, located in the library, is equipped with computer workstations. Lab hours are posted each semester at the building entrance and on the Library website.

FREE TUTORING RESOURCES:

The Academic Center for Excellence (**ACE**) Lab, located in Building L, offers free tutoring from 8 a.m. to 5 p.m. and is equipped with computer workstations. ACE lab hours are posted each semester at the room entrance and on the website. Additionally, Chipola College has contracted **Smarthinking**, a Pearson Company, for online tutoring services, accessible especially from 5 p.m. to 8 a.m. and weekends. Smarthinking can be accessed through Canvas.

ELECTRONIC DEVICE USAGE STATEMENT:

Classrooms should be free of all unnecessary distractions from the task of learning. Therefore, as a general rule, students should silence and avoid use of all electronic devices (laptops, phones, tablets, etc.) not being used for coursework. Consult first-day handouts for any specific policies related to the use of electronic devices in the classroom, as they may vary depending upon the nature of the course or the guidelines of the instructor. Faculty reserve the right to regulate the use of electronic devices and their accessories in class.

DISCIPLINE SPECIFIC COMPETENCIES / LEARNING OUTCOMES:

Area 2 - Natural Science: Explore the Nature of Science

The purpose of the study of the natural sciences component in the core curriculum is to enable the student to understand, construct, and evaluate relationships in the natural sciences, and to understand the bases for building and testing scientific theories.

NS-1 Recognize appropriate scientific terminology.

NS-2 Apply scientific principles or concepts.

NS-3 Solve real-world problems using scientific knowledge.

Linking Course-level Student Learning Outcomes with Discipline-Specific Competencies, Assessment Methods, and Artifacts

COURSE-LEVEL STUDENT LEARNING OUTCOMES FOR PHY2048C	DISCIPLINE-SPECIFIC GENERAL EDUCATION COMPETENCIES	ASSESSMENT METHODS FOR COURSE LEVEL STUDENT LEARNING OUTCOMES (see Notes below)
<ul style="list-style-type: none"> Apply problem-solving techniques in physics to describe the mechanics of real-world applications using proper SI units for physical measurements. 	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> Predict the motion of one- and two-dimensional point particles to show the quantitative relationship between the kinematical parameters. 	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> Determine the motion of objects under the influence of various forces, including the special case of static equilibrium using Newton's laws of motion and gravitation. 	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp. Proj
<ul style="list-style-type: none"> Compute changes in position and motion by applying the conservation of energy to moving particle systems, including examples with friction. 	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> Analyze different types of collisions between objects in terms of the conservation of momentum and impulses 	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> Calculate the motion of rigid bodies by treating them as a collection of rotating masses subject to external torques and positional changes. 	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> Examine the effect of temperature on the internal energy of large collections of particles to explain the macroscopic quantities that describe distributions of matter.. 	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp
<ul style="list-style-type: none"> Measure physical quantities in a lab setting that demonstrate textbook principles using computer-based measurement acquisition systems 	NS-1, NS-2, NS-3	Proj Exp

Notes: Assessment Codes

BO - Behavioral Observation
Cap Proj - Capstone Course
CF - Cumulative Final
Clin - Clinicals
CP - Case Plan
CS - Case Study
DB - Discussion Board
DE - Documented Essays
E - Essays

EX - Dept Exam
Exp - Experiments
F - Final Exam
H - Homework
Intern - Internship
J - Jury
JP - Judged Perf/Exh
Obs - Teacher Observ
OT - Objective Tests

Port - Portfolio
Prac - Practicum
Pre/ Post - Pre-/Post-Tests
Proj - Projects
PS - Problem Solving
Q - Quizzes
R - Recital
RP - Research Papers
RPT - Report/Presentation

SD - Skills Demonstration
SE - Natl or State Standardized
Sk - Ck Skills Check-Off
SP - Skills Performance
T - Tests
UT - Unit Tests
W - Writing Assignments

MEANS OF ACCOMPLISHING STUDENT LEARNING OUTCOMES:

Lecture is the primary method of instruction covering topics primarily from the textbook and including numerous examples of the problem-solving techniques used in physics and engineering. The presentation makes use of the overhead projection system, class demonstrations, and board illustrations. Students are responsible for any material contained within the assigned chapters of the textbook, as well as any material covered during lecture. Students should read the text, study in-class notes and work through the previous exam samples posted on the instructor's website. The student's understanding of the material and the problem-solving techniques covered in class are assessed using three to four multi-part problems which must be solved using the methods learned in class. Assignments completed in and outside of class count toward the semester grade, as well as participation in the required lab section accompanying the course. Laboratory exercises include measuring uniform and accelerated motions with a computer based interface and motion detector, examining the dynamics of collisions using an air track and photogate system, testing conservation laws, and work done by friction.

ASSIGNMENT AND/OR COURSE OUTLINE

Week:	Topic
1	Introduction Doing Physics, Chapter 1
2	Motion in a Straight Line, Chapter 2 Motion in Two and Three Dimensions, Chapter 3
3	Motion in Two and Three Dimensions, Chapter 3 (continued) Exam I
4	Force and Motion, Chapter 4 Using Newton's Laws, Chapter 5
5	Using Newton's Laws, Chapter 5 (continued)
6	Exam II Work, Energy, and Power, Chapter 6
7	Conservation of Energy, Chapter 7
8	Exam III Systems of Particles, Chapter 9
9	Systems of Particles, Ch. 9 (continued)
10	Rotational Motion, Chapter 10
11	Exam IV Gravity, Chapter 8
12	Gravity, Chapter 8 (continued)
13	Oscillatory Motion, Chapter 13
14	Exam V Temperature and Heat, Chapter 16
15	Heat, Work, and the First Law of Thermodynamics, Chapter 18

Cumulative Final Exam TBA

See your Instructor First Day Handout for individual instructor assignment schedule.