



# CHIPOLA COLLEGE

## COURSE SYLLABUS

Chipola's website: [www.chipola.edu](http://www.chipola.edu)

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**COURSE TITLE:**

Physics II with Calculus

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**COURSE NUMBER:**

PHY 2049C

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**COURSE DESCRIPTION (with prerequisites):**

A continuation of PHY 2048. Topics covered are electrostatics, direct current circuits, alternating current circuits, magnetism, electromagnetic waves, sound, light, atomic physics, and nuclear physics, with laboratory applications of these topics. Corequisite or Prerequisite: MAC 2313 (Calculus and Analytic Geometry III). Prerequisite: PHY 2048C (General Physics I with Calculus). Four hours lecture and two hours laboratory per week. 5 semester hours credit.

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**NAME(S) OF INSTRUCTORS:**

Dr. Jeff Bodart

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**EFFECTIVE ACADEMIC YEAR:**

2022-2023

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**REQUIRED TEXTBOOKS AND INSTRUCTIONAL MATERIALS:**

*Essential University Physics*, Richard Wolfson, Addison-Wesley, 4<sup>th</sup> edition.  
ISBN: 9780134988566 or eBook, ISBN: 9780135272992

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**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.

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**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:**

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

#### **ACADEMIC HONOR CODE POLICY:**

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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:**

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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:**

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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 Phippen, 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](mailto:pippenw@chipola.edu).

#### **LIBRARY AND ON-LINE REFERENCE MATERIALS:**

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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](http://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:**

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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:**

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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, live online tutoring conferences and individual tutoring sessions are available for a variety of courses through ACE@Home. For a conference schedule or to schedule an individual appointment, visit "ACE Tutoring" in the left navigation from any course in Canvas.

### **ELECTRONIC DEVICE USAGE STATEMENT:**

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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:**

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#### **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**

<b>COURSE-LEVEL STUDENT LEARNING OUTCOMES FOR PHY2049C</b>	<b>DISCIPLINE-SPECIFIC GENERAL EDUCATION COMPETENCIES</b>	<b>ASSESSMENT METHODS FOR COURSE LEVEL STUDENT LEARNING OUTCOMES (see Notes below)</b>
<ul style="list-style-type: none"> <li>Solve applications of electricity and magnetism using proper SI units for physical measurements.</li> </ul>	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> <li>Examine the relationship between the forces on electric charges and the electric field that surrounds discrete and continuous charge distributions.</li> </ul>	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> <li>Calculate the changes in energy arising from motion within an electric field or stored in systems of charged conductors.</li> </ul>	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> <li>Analyze the flow of current in electrical circuits to determine how energy is distributed between the components in simple DC circuits.</li> </ul>	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> <li>Calculate the magnetic fields and forces arising from distributions of electric currents and moving charges.</li> </ul>	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> <li>Quantify the relationship between a changing magnetic flux and the EMF induced in a circuit.</li> </ul>	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp.
<ul style="list-style-type: none"> <li>Describe the properties of light as it propagates through space in applications involving optics and optical instruments.</li> </ul>	NS-1, NS-2, NS-3	OT, PS, UT, CF Exp
<ul style="list-style-type: none"> <li>Apply textbook principles in a lab setting using computer-based measurement acquisition systems</li> </ul>	NS-1, NS-2, NS-3	Proj Exp

**Notes: Assessment Codes**

<b>BO</b> - Behavioral Observation	<b>EX</b> - Dept Exam	<b>Port</b> - Portfolio	<b>SD</b> - Skills Demonstration
<b>Cap Proj</b> - Capstone Course	<b>Exp</b> - Experiments	<b>Prac</b> - Practicum	<b>SE</b> - Natl or State Standardized
<b>CF</b> - Cumulative Final	<b>F</b> - Final Exam	<b>Pre/ Post</b> - Pre-/Post-Tests	<b>Sk</b> - Ck Skills Check-Off
<b>Clin</b> - Clinicals	<b>H</b> - Homework	<b>Proj</b> - Projects	<b>SP</b> - Skills Performance
<b>CP</b> - Case Plan	<b>Intern</b> - Internship	<b>PS</b> - Problem Solving	<b>T</b> - Tests
<b>CS</b> - Case Study	<b>J</b> - Jury	<b>Q</b> - Quizzes	<b>UT</b> - Unit Tests
<b>DB</b> - Discussion Board	<b>JP</b> - Judged Perf/Exh	<b>R</b> - Recital	<b>W</b> - Writing Assignments
<b>DE</b> - Documented Essays	<b>Obs</b> - Teacher Observ	<b>RP</b> - Research Papers	
<b>E</b> - Essays	<b>OT</b> - Objective Tests	<b>RPT</b> - Report/Presentation	

**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 electric field mapping, voltage/resistance measurements with the DMM, DC circuits, oscilloscopes, and AC circuits, which include computer-aided data acquisition techniques. In the final lab sessions, students are expected to complete a group project that demonstrates some aspect of magnetic fields learned from class

### **ASSIGNMENT AND/OR COURSE OUTLINE**

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