PHYS 2426 COURSE SYLLABUS
University Physics I Fall 2020 (Section 21001)
INSTRUCTOR: Jeff Peden
MAILING ADDRESS: Brookhaven College, Math/Science Department
3939 Valley View Lane, Farmers Branch, Texas 75244
E-mail Address: JPeden@dcccd.edu


For Labs: All labs will be provided on-line. No manual required.

CATALOG DESCRIPTION: This is a Texas Common Course Number. This is a Core Curriculum course selected by the colleges of DCCCD.
Prerequisite: MATH 2414, PHYS 2425
Course Description: The second semester of a calculus-based physics sequence for science, computer science, and engineering majors. Principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light and optics are studied. Performance of basic laboratory experiments supporting theoretical physics principles and applications of electricity and magnetism, including circuits, electromagnetism, waves, sound, light and optics. Also includes experimental design, data collection and analysis, and preparation of laboratory reports. (3 Lec., 3 Lab.)
Coordinating Board Approval Number 4001015703

Student Learning Outcomes:
Upon successful completion of this course, students will:

1. State the principles and laws of physics as they apply to electricity, magnetism, wave motion, acoustics and optics.
2. Identify and use relevant equations applicable to electricity, magnetism, wave motion, acoustics and optics.
3. Apply the concepts learned to solve theoretical problems and explain phenomena in the laboratory and in the outside world.
4. Perform laboratory experiments that illustrate important concepts and analyze the data gathered using scientific principles.
5. Develop skills for analytical thinking that are useful for problem solving in physics and other fields.
6. Participate in enrichment activities that lead to an appreciation of how physics has developed, how physics affects other fields and the relevance of learning physics.

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PHYS 2426 is part of the Life and Physical Sciences Component Area 030.

(i) Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method.

(ii) Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

(iii) The following four Core Objectives are addressed in this course to fulfill this requirement:

- **Critical Thinking Skills:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
- **Communication Skills:** to include effective development, interpretation and expression of ideas through written and visual communication.
- **Empirical and Quantitative Skills:** to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
- **Teamwork:** to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

### COURSE PROCEDURES AND POLICIES:

#### CONTACTING YOUR INSTRUCTOR

Your main communication with your instructor outside of class will be via email [JPeden@deccd.edu](mailto:JPeden@deccd.edu). To ensure a prompt response when emailing your instructor, you must include your name and write the course for which you are enrolled (PHYS 2426) and the section number in the subject line of all email correspondences. I should respond to your email within 24 hours Monday through Thursday. If I don’t respond to your email within 48 hours (Monday – Thursday), then please call my office number and leave a message. Emails sent on Friday, Saturday, or Sunday may be answered by the end of the day on Monday of the following week.

#### EVALUATION

**Midterms and Module Tests:** There will be two midterm exams comprising 30% of the overall grade. In addition, there will be approximately 8 module tests over the major topics covered in the course. These timed tests will consist of conceptual questions and problems. Students must follow the Brookhaven College code of student conduct at all times during the course, and dishonesty will not be tolerated. The final exam will simply be the second midterm and will be taken on the last scheduled class day. **The final exam for this class is: Monday, December 7.**

**Lab experiments & Reports:** There will be several investigations held each week of the semester. Making accurate measurements and recording and analyzing data will be required for each lab. Some labs will utilize online physics simulators while others may take place at home using common household materials.

**Assignments:** Assignments will be given daily throughout the semester. These assignments are reading and/or video assignments that I expect you to complete in order to fully participate in class. Video quizzes will regularly be assigned to make sure you are watching the videos and/or reading the material. Additional problems may also be assigned from the textbook.
Your grade in this class will contain these components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight of Grade</th>
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<tbody>
<tr>
<td>Midterms (2)</td>
<td>30% of overall grade</td>
</tr>
<tr>
<td>Module Tests (8)</td>
<td>30% of overall grade</td>
</tr>
<tr>
<td>Labs</td>
<td>25% of overall grade</td>
</tr>
<tr>
<td>Videos and Quizzes</td>
<td>15% of overall grade</td>
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</tbody>
</table>

Your final grade will be based on the traditional grading scale. Grades in the 90’s are A’s, 80’s are B’s, 70’s are C’s, 60’s are D’s, etc…

Incomplete grades are given only when an unforeseen emergency prevents a student from completing the course work. Division chairs must approve all "I" grades.

INSTITUTIONAL POLICIES

Institutional Policies of Brookhaven College may be found at the following link: https://www.Brookhavencollege.edu/syllabusaddendum

The institutional policies covered are:

- Drop/Withdrawal Policy
- Six Drop Rule
- Repeating this Course
- Financial Aid Statement
- Financial Aid Certification of Attendance
- International Students
- Religious Holidays
- ADA Statement
- Academic Integrity
- Grade Reports
- Family Educational Rights and Privacy Act (FERPA)
- Institutional Equity
- Instructors Right to Modify

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DROP/WITHDRAWAL POLICY
Attendance is an important part of your success. Attendance will be marked by your physical presence as well as participation in class discussions and problem sets.

The deadline for withdrawing from this course with a W is **November 12, 2020**. If you do not file the appropriate forms by that date, you will receive a performance grade which may be an “F.”

**ACADEMIC INTEGRITY:** Scholastic dishonesty is a violation of the Student Code of Conduct and is punishable as stated in college policies. Scholastic dishonesty shall include, but not be limited to, cheating on a test, plagiarism, and collusion. The purpose of the Student Code of Conduct is to provide guidelines for the educational environment of the Dallas County Community College District. This environment views students in a holistic manner, encouraging and inviting them to learn and grow independently. Such an environment presupposes both rights and responsibilities. For more information, refer to the [DCCCD Student Code of Conduct](https://www1.dcccd.edu/catalog/ss/code.cfm).

*We, the Physics Department of BHC, take issues of dishonesty very seriously. If a student is caught violating any policy of the Testing Center, or an instructor’s own policy for their particular class, the following consequences will be enforced: The minimum penalty a student will receive is a zero for the assignment/exam and the maximum penalty will be to receive an F for the course and/or academic suspension.*

As with any course, you are expected to do your own work. By starting the work in this course you are agreeing to follow the honor system. Any indication that you are being dishonest will result in receiving an F for the course and/or academic suspension. This is at the instructor’s discretion.

**HELP AND AVAILABLE RESOURCES:**
On-line tutoring is available for physics, mathematics and engineering. Here is a quick video on how to get started: [Black Board Tutoring Video](#)

Or you can follow the steps below:
1. Access eCampus and click the COMMUNITY tab.
2. In the search box type “Brookhaven”.
3. From the list of results, hover over BROOKHAVEN TUTORING and click the small arrow that appears next to the name.
4. Click ENROLL and then on the next screen OK

A detailed tutoring availability schedule will be provided shortly after classes begin.
## Course Calendar

<table>
<thead>
<tr>
<th>WEEK</th>
<th>Topic</th>
<th>Lab</th>
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</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Gravity Review and Coulomb’s Law</td>
<td>Coulomb’s Lw (PheT)</td>
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<tr>
<td>Week 2</td>
<td>Electric Fields and Mechanics with Electric forces</td>
<td>Electric Fields (PheT)</td>
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<tr>
<td>Week 3</td>
<td>Electric Fields and Calculus Applications</td>
<td>Problem Set</td>
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<tr>
<td>Week 4</td>
<td>Electric Potential</td>
<td>Electric Potential Map (Paper Lab)</td>
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<tr>
<td>Week 5</td>
<td>Electric Current and Resistance</td>
<td>Ohm’s Law (PheT)</td>
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<tr>
<td>Week 6</td>
<td>Series and Parallel Circuits; Capacitors</td>
<td>Series and Parallel (PheT)</td>
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<tr>
<td>Week 7</td>
<td>Potential Energy and Electricity; Kirchhoff’s Laws</td>
<td>Problem Set</td>
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<tr>
<td>Week 8</td>
<td>MidTerm Exam</td>
<td>No Lab</td>
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<tr>
<td>Week 9</td>
<td>RC Circuits</td>
<td>RC Circuits (PHeT)</td>
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<tr>
<td>Week 10</td>
<td>Magnetic Fields and Magnetic Forces</td>
<td>Problem Set</td>
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<tr>
<td>Week 11</td>
<td>Motion in a Magnetic Field, Faraday’s Law</td>
<td>Faraday’s Law (PheT)</td>
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<tr>
<td>Week 12</td>
<td>Motional EMF and Inductors</td>
<td>RL Circuits (PHeT)</td>
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<tr>
<td>Week 13</td>
<td>Gauss’s Law and Waves</td>
<td>Problem Set</td>
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<tr>
<td>Week 14</td>
<td>Wave Properties of Light and Optics</td>
<td>Snell’s Law (PHeT)</td>
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<td>Week 15</td>
<td>Final Exam</td>
<td>No Lab</td>
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