University Physics II Syllabus
Dallas College North Lake Campus

Contacting your instructor
Instructors typically respond to emails from students with 24 hours however over the weekend and holiday periods responses maybe delayed. Find out more about contacting your instructor.

Instructor Contact Information
Name: Jason Eberle
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Office Hours: To be Announced
Division Office and Phone: https://tinyurl.com/VirtualP330

Course Information
Course Title: University Physics II
Course Number: PHYS 2426
Section Number: 71022
Semester/Year: Fall 2020
Credit Hours: 4
Class Meeting Time/Location: To be Announced
Certification Date: 8/29/20 Last Day to Withdraw: 9/30/2020

Course Prerequisites
PHYS 2425 University Physics I and MATH 2414 Calculus II (4 SCH version)

Course Description
Principles of physics for science, computer science, and engineering majors, using calculus, involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics; and emphasis on problem solving, experimental design, data collection and analysis, and preparation of laboratory reports.
Student Learning Outcomes

Following the successful completion of PHYS 2426, students will be able to:

1. Articulate the fundamental concepts of electricity and electromagnetism, including electrostatic potential energy, electrostatic potential, potential difference, magnetic field, induction, and Maxwell's Laws.
2. State the general nature of and solve problems involving the inter-relationship of electrical charges, forces and fields, and their relationship to electrical current.
3. Apply Kirchhoff's Laws to analysis of circuits with potential sources, capacitance, and resistance, including parallel and series capacitance and resistance.
4. Calculate the force on a charged particle between the plates of a parallel-plate capacitor.
5. Apply Ohm's law to the solution of problems.
6. Describe the effects of static charge on nearby materials in terms of Coulomb's Law.
7. Use Faraday's and Lenz's laws to find the electromotive forces.
8. Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.
9. Discuss simple harmonic motion and its application to real-world problems.
10. Articulate the principles of reflection, refraction, diffraction, interference and superposition of waves.
11. Solve real-world problems involving optics, lenses, and mirrors.
12. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner.
13. Conduct basic laboratory experiments involving electricity and magnetism.
14. Relate physical observations and measurements involving electricity and magnetism to theoretical principles.
15. Evaluate the accuracy of physical measurements and the potential sources of error in the measurements.
16. Design fundamental experiments involving principles of electricity and magnetism.
17. Identify appropriate sources of information for conducting laboratory experiments involving electricity and magnetism.

Texas Core Objectives

The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the activities you engage in will give you the opportunity to practice two or more of the following core competencies:

1. **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** - to include effective development, interpretation, and expression of ideas through written, oral, and visual communication
3. **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
Required Course Materials
If your Dallas College course requires learning materials they will be provided as part of the IncludED program (see dcccd.edu/included) or as free materials you can access in your online course shell.
If you opt out of the IncludED program, you are responsible for obtaining all your required learning materials by the first day of the class (for more details: Institutional Policies).
Lab: No lab text is required.

Graded Work
The tables below provide a summary of the graded work in this course and an explanation of how your final course grade will be calculated.

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Summary of Graded Work

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Quantity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>1 Assignment per Chapter with Extra Credit opportunities</td>
<td>20%</td>
</tr>
<tr>
<td>Lab Grade</td>
<td>Approximately 10 labs</td>
<td>30%</td>
</tr>
<tr>
<td>Exams</td>
<td>4 Exams @ 12.5% each</td>
<td>50%</td>
</tr>
</tbody>
</table>

TOTAL: 100%

Final Grade

<table>
<thead>
<tr>
<th>Percentages</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>89.45-100%</td>
<td>A</td>
</tr>
<tr>
<td>79.45-89.44%</td>
<td>B</td>
</tr>
<tr>
<td>69.45-79.44%</td>
<td>C</td>
</tr>
<tr>
<td>59.45-69.44%</td>
<td>D</td>
</tr>
<tr>
<td>0-59.44%</td>
<td>F</td>
</tr>
</tbody>
</table>
Description of Graded Work

Homework

The purpose of homework is to help you understand concepts by working with them and to provide practice in using techniques and solving problems. Homework is a “means”, not an "end". Being able to do all the homework problems will not guarantee that you will do well on an exam, but it will HELP. It is important that you understand the problems you solve. Too often students complete assignments without really understanding what they have done. You have an opportunity to learn here.

PLEASE, I IMPLORE YOU! TAKE IT!

There will be a homework assignment to go with each chapter. Even though the homework is only a small percentage of your overall grade, if you don’t do the homework assignments

![Gandalf did his homework.](Figure_1.png)

Laboratory

The situation facing us during Fall 2020 necessitates a different approach to the usual laboratory procedures. I strongly believe in the value of hands on learning, but despite my best efforts over the summer to get lab kits sent out to my students it didn’t work out the way I would have hoped. It isn’t ideal, but some of the labs are doable from home with minimal materials required. For the rest, I will either record myself collecting data and then I will share the data with you and leave the analysis for you to do as an assignment or I will use a simulation online to base the lab on.

Exams

There will be four exams in this course. Each of these exams will cover three to four chapters from the text. All exams will be taken remotely using Resondus Lockdown Monitor which requires a webcam and microphone. Instructions will be given on Blackboard.

I will NOT give make up exams or extensions for ANY reason. However, I will calculate your overall exam grade by replacing your lowest exam grade with the average of all exams. For example; if your scores on the 4 exams are 90, 80, 60, 50 with an average of 70, then I will calculate your exam grade as 90, 80, 60, 70 to get an average of 75.

\[^1\text{This includes illness, vehicular problems, documentation or identification issues, ignorance of deadlines, prior engagements, or lack of preparation.}\]

4
Attendance and Your Final Grade

“One must learn by doing the thing; for though you think you know it, you have no certainty, until you try.”

-Sophocles

A first reading of material should be done prior to the class in which it will be discussed, for my presentation can be different from the book. You will, however, benefit from seeing the same topic presented more than once. You should come to class prepared to ask and answer questions about the topics of the day. In the exams you are responsible for any material covered in lecture or the text, as well as the concepts, techniques, examples and counterexamples covered in assigned homework problems.

Late Work Policy

This semester is going to be unique. I won’t directly penalize you for turning in work late. I understand that things may get away from you from time to time. Having said that, if you abuse this policy and wait until the last minute to turn in all your work at the end of the semester, don’t expect me to be in a good mood when I eventually get around to grading your work and I end up indirectly penalizing you. This is most important for the labs. Homework and exams will be automatically graded so if you want to wait until the last minute and make your life a living hell, that’s your choice. I have a schedule on the last page of the syllabus that spaces the workload out for you. Stick to that and you will be much happier.

Grade Grubbing

Don’t ask me to raise your grade at the end of the semester. An 89.44% is still a B! Your grade is based solely on the quality of your work. It would be unethical and unprofessional of me to base the grade on anything else. In addition, it would cheapen the effort of other students, and damage the reputation of the institution as well as myself. This is known as “Grade Grubbing” by some and is a source of major irritation for me. Feel free to point out if I have made any mistakes, otherwise I will ignore anything you have to say about grades.
For more information see Why You Should Not Engage in Grade Grubbing (https://www.math.uh.edu/~tomforde/GradeGrubbing.html)

Institutional Policies

Institutional Policies include information about tutoring, Disabilities Services, class drop and repeat options, Title IX, and more.
## Course Schedule

<table>
<thead>
<tr>
<th>Assignment/Assessment</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ch. 16 Homework</td>
<td>8/30/2020</td>
</tr>
<tr>
<td>Ch. 17 Homework</td>
<td>9/6/2020</td>
</tr>
<tr>
<td>Ch. 33 Homework</td>
<td>9/13/2020</td>
</tr>
<tr>
<td>Ch. 34 Homework</td>
<td>9/20/2020</td>
</tr>
<tr>
<td><strong>Exam 1</strong></td>
<td>9/27/2020</td>
</tr>
<tr>
<td>Ch. 22 Homework</td>
<td>9/27/2020</td>
</tr>
<tr>
<td>Ch. 23 Homework</td>
<td>10/4/2020</td>
</tr>
<tr>
<td>Ch. 24 Homework</td>
<td>10/11/2020</td>
</tr>
<tr>
<td>Ch. 25 Homework</td>
<td>10/18/2020</td>
</tr>
<tr>
<td><strong>Exam 2</strong></td>
<td>10/25/2020</td>
</tr>
<tr>
<td>Ch. 26 Homework</td>
<td>10/25/2020</td>
</tr>
<tr>
<td>Ch. 27 Homework</td>
<td>11/1/2020</td>
</tr>
<tr>
<td>Ch. 28 Homework</td>
<td>11/8/2020</td>
</tr>
<tr>
<td>Ch. 29 Homework</td>
<td>11/15/2020</td>
</tr>
<tr>
<td><strong>Exam 3</strong></td>
<td>11/22/2020</td>
</tr>
<tr>
<td>Ch. 30 Homework</td>
<td>11/22/2020</td>
</tr>
<tr>
<td>Ch. 32 Homework</td>
<td>11/29/2020</td>
</tr>
<tr>
<td>Ch. 31 Homework</td>
<td>12/6/2020</td>
</tr>
<tr>
<td><strong>Exam 4</strong></td>
<td>12/10/2020</td>
</tr>
</tbody>
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II Exam 1 covers Ch. 16, 17 & 33, 34
III Exam 2 covers Ch. 22-25
IV Exam 3 covers Ch. 26-29
V Exam 4 covers Ch. 30-32