

College Physics II

PHYS-1402

Spring 2020 Section 202 CRN-26349 4 Credits 01/21/2020 to 05/14/2020 Modified 01/21/2020

Meeting Times

Lecture

Monday, Wednesday, 2:50 PM to 4:05 PM, SCHW 298

Laboratory

Monday, Wednesday, 4:15 PM to 5:30 PM, SCHW 270

Contact Information

Professor: Dr. Terrence Honan

Email: thonan@blinn.edu

Office: SCHW 430H

Phone: 979-209-7420

Office Hours

Monday, Wednesday, Friday, 10:00 AM to 10:50 AM, SCHW 430H

Tuesday, Thursday, 9:40 AM to 10:25 AM, SCHW 430H

Tuesday, Thursday, 3:00 PM to 4:00 PM, SCHW 430H

Description

3 lecture hours and 3 lab hours per week; 96 total contact hours. Credit: 4 semester hours.

Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving. Lab activities will reinforce fundamental principles of physics, using algebra and trigonometry with an emphasis on problem solving.

Requisites

Prerequisites: PHYS 1401.

Core Curriculum Statement

Through the Texas Core Curriculum, students will gain a foundation of knowledge in 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. For details relating to this core course, please see:

<http://www.blinn.edu/academics/core-curriculum.html> (<http://www.blinn.edu/academics/core-curriculum.html>)

Outcomes

1. Solve problems involving the inter-relationship of fundamental charged particles, and electrical forces, fields, and currents.
2. Apply Kirchoffs Rules to analysis of circuits with potential sources, capacitance, inductance, and resistance, including parallel and series capacitance and resistance.
3. Solve problems in the electrostatic interaction of point charges through the application of Coulombs Law
4. Solve problems involving the effects of magnetic fields on moving charges or currents, and the relationship of magnetic fields to the currents which produce them.
5. Use Faradays and Lenzs laws to determine electromotive forces and solve problems involving electromagnetic induction.
6. Articulate the principles of reflection, refraction, diffraction, interference, and superposition of waves.
7. Describe the characteristics of light and the electromagnetic spectrum.
8. Develop techniques to set up and perform experiments, collect data from those experiments, and formulate conclusions from an experiment.
9. Demonstrate the collections, analysis, and reporting of data using the scientific method.
10. Record experimental work completely and accurately in laboratory notebooks, and communication experimental results clearly in written reports.
11. Solve practical problems involving optics, lenses, mirrors and optical instruments.

Materials

- Required Textbook: James S. Walker, *Physics*, 5th Edition. Options: Full version – Hardcover ; Vol II only – paperback; or e-text (via Mastering Physics website)
- Current access to Modified Mastering Physics for the textbook listed.
- Scientific calculator: Non-graphing. Non-programmable.
- *Physics 1402 Laboratory Manual* is available as a pdf file on eCampus.

Course Requirements

There will be three major exams, several unannounced quizzes, labs, online homework and a cumulative final.

- **Major Exams and Final:** The three major exams and final will be closed book/closed note tests. A formula list will be provided.
- **Quiz:** The quiz grade will consist of 30 point quizzes. There will be no make-up quizzes, for any reason. At least 20% of the quiz grades will be dropped. Quizzes will typically be open book / open note. After dropping, all the remaining quiz grades will be added and rescaled to 100 points.
- **Labs:** There will be no make-up labs, for any reason. Only students who attend laboratory may get credit for the lab. At least 20% of the lab grades will be dropped. Lab time will be used to collect data. Students should expect to complete calculations and write-ups outside of class. Labs will be due the next class meeting.
- **Online Homework:** We will use the textbook publisher's online homework system, Mastering Physics. Each assignment will have a due date. One assignment will be dropped, the one that gives the student the maximum benefit. Mastering Physics will not be reopened at the end of the semester; assignments must be completed by the due date for credit. The final point total for the semester will be rescaled to 100 points.

Evaluation

Criteria for Grading

There will be 3 major exams, each worth 16%. The quiz grade, the lab grade and the homework grade are each 10%. The remaining

22% is the final. An alternative method is provided to partially alleviate a poor performance on one major exam; half of the lowest (curved) exam grade is replaced with the curved final exam grade. The final average is calculated both ways; the grade will be the higher of the two.

Category	Normal	Alternative
Three Major Exams	16% ×3	16% ×2 + 8%
Quiz	10%	10%
Labs	10%	10%
Online Homework	10%	10%
Final Exam	22%	30%

The grading system of Blinn College is as follows*:		
A	90 - 100	Superior
B	80 - 89	Above Average
C	70 - 79	Average
D	60 - 69	Passing
F	< 60	Failing
*from Board Policy Manual EGA(LOCAL)		

Blinn College Policies

All policies, guidelines, and procedures in the [Blinn College Catalog \(http://catalog.blinn.edu/\)](http://catalog.blinn.edu/), [Blinn College Board Policies \(http://pol.tasb.org/Home/Index/1204\)](http://pol.tasb.org/Home/Index/1204), and the [Blinn College Administrative Regulations \(https://www.blinn.edu/administrative-regulations/\)](https://www.blinn.edu/administrative-regulations/) are applicable to this course.

[Specific information on civility, attendance, add/drop, scholastic integrity, students with disabilities, final grade appeal, alternative retailers, campus carry and proctoring arrangements and cost. \(http://www.blinn.edu/syllabus-policies/\)](http://www.blinn.edu/syllabus-policies/)

Notice of any action taken under these protocol and procedures, by Blinn College or its employees, may be delivered by hand, through the U.S. Postal Service, or electronically to the student's Blinn Buc e-mail account. Notice shall be deemed received upon actual receipt, on deposit in the U.S. Mail, or upon entering the information processing system used by Blinn College for Blinn Buc e-mail accounts, whichever first occurs.

* Course Policies

Attendance Policy Reminder: Attendance will be taken each class. Not being in class when attendance is taken constitutes an absence. For classes that meet twice a week during the semester, two absences counts as one week's absence. Students accumulating two week's worth of absences (four unexcused absences) will be dropped.

Conflict Resolution: To resolve any conflict students must follow a chain of command. First you should deal directly with your professor, then the Department Head (Ms. Rachel Sanchez rachel.sanchez@blinn.edu (<mailto:rachel.sanchez@blinn.edu>)), then the Assistant Dean (Dr. Beverly Clements bclément@blinn.edu) and finally the Dean (Dr. Elmer Godeny elmer.godeny@blinn.edu (<mailto:elmer.godeny@blinn.edu>))

Eating and Drinking: Eating and drinking are not allowed in classrooms.

Laboratory Safety: It is the policy of the Natural and Physical Sciences Division that students must wear proper attire whenever in the laboratory. This excludes open-toed shoes (or one-toed shoes with socks.) Failure to do so will result in students being sent home from the laboratory with a zero on the resulting assignment. The Food and Drink prohibition will be enforced strictly. Any drink container even empty ones, cannot be visible; hide it in a bag.

Electronic Devices: It is never acceptable to leave a class to answer a cell phone. Texting during class is totally unacceptable. Any use of a cell phone or other wireless device during an exam will be considered a major incident of scholastic dishonesty.

Credit for Work: On the major exams, final and all quizzes, all work must be shown and clearly documented for any show-your-work problem. The starting point in problem solving *must* be some expression on the official [exam formula list](#) for the class. Memorized intermediate expressions will receive no credit unless their derivation is included.

Grading and Regrading: On the major exams, final and all quizzes, partial credit will typically be available for show-your-work problem. For each problem I find a grading scheme that is appropriate for that problem and then do my best to apply that scheme uniformly across all the exam papers. It is a priority to maintain consistency across all test papers. Inaccurate grading, relative to that scheme, will be regraded to maintain fairness. Any regrading requests must be made promptly (within two weeks) after a test is returned in class to be considered.

Schedule

Tentative Schedule

Week	Day	Date	Lecture Material	Lab Material	Weekly Contact Hours
1	Mon	20-Jan	Holiday - No Class (MLK Day)		6
	Wed	22-Jan	Syllabus & Start Chapter 19	Continue Chapter 19	
2	Mon	27-Jan	Continue Chapter 19	Group Quiz 1	6
	Wed	29-Jan	Finish Chapter 19	Lab 1 - Electric Fields	
3	Mon	3-Feb	Start Chapter 20	Group Quiz 2	6
	Wed	5-Feb	Finish Chapter 20	Lab 2 - Electric Potential and Conductors	
4	Mon	10-Feb	Start Chapter 21	Group Quiz 3	6
	Wed	12-Feb	Finish Chapter 21	Lab 3 - Ohm's Law	

5	Mon	17-Feb	Start Chapter 22	Review Quizzes	6
	Wed	19-Feb	Exam 1 (Chapters 19-21)		
6	Mon	24-Feb	Chapter 22	Lab 4 - Resistors in Series and Parallel	6
	Wed	26-Feb	Finish Chapter 22	Group Quiz 4	
7	Mon	2-Mar	Start Chapter 23	Lab 5 - RC Circuits	6
	Wed	4-Mar	Continue Chapter 23	Group Quiz 5	
Mar 1 - 6 Spring Break					
8	Mon	16-Mar	Finish Chapter 23 and Start Chapter 24	Lab 6 - Charged Particles in Electromagnetic Fields	6
	Wed	18-Mar	Finish Chapter 24	Group Quiz 6	
9	Mon	23-Mar	Start Chapter 25	Review Quizzes	6
	Wed	25-Mar	Exam 2 (Chapters 22-24)		
10	Mon	30-Mar	Chapter 25	Lab 7 - Electromagnetic Induction	6
	Wed	1-Apr	Finish Chapter 25 and Start Chapter 26	Group Quiz 7	
11	Mon	6-Apr	Finish Chapter 26 and Start Chapter 27	Lab 8 - The Series RLC Circuit	6
	Wed	8-Apr	Finish Chapter 27	Group Quiz 8	
12	Mon	13-Apr	Start and Finish Chapter 28	Group Quiz 9	6
	Wed	15-Apr	Chapter 29	Group Quiz 10	
13	Mon	20-Apr	Start Chapter 30	Review Quizzes	6
	Wed	22-Apr	Exam 3 (Chapters 25-29)		
14	Mon	27-Apr	Chapter 30	Lab 9 - Geometric Optics	6
	Wed	29-Apr	Chapter 31	Group Quiz 11	
	Fri	1-May	Last Day to "Q" Drop		
15	Mon	4-May	Chapter 32	Lab 10 - Diffraction and Interference or Group Quiz 12	6
	Wed	6-May	Final Exam Review		
16	Sun	10-May	Alternate Review Assignment - Mastering Physics Final Exam Review		6

Mon	11- May	Final Exam from 3:15-5:30 in SCHW 298
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Total contact hours = 48. Note that in the Carnegie Mellon system, 50 minutes counts as 1 contact hour.