



PHY 203 – Physics for Engineers II – Spring 2024

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Office hours:	MWF 10:45 – 11:45 am, MF 2 – 4 pm, or by appointment.
Classroom:	BUS 124
Class time:	MWF 9:30 – 10:30 am
Lab room:	James 121

Course Description

This course covers topics such as fluids, temperature and ideal gas, electric charge and field, Gauss's Law, electric potential, capacitance and dielectrics, current, resistance and electromotive force, direct-current circuits, magnetic field and force, Ampere's and Faraday's laws, electromagnetic induction, inductance, alternating current circuits, and electromagnetic waves.

Prerequisites

PHY 201 and MAT 245 (C- or better)

Required Texts and Resources

1. Giancoli, *Physics for Scientists and Engineers*, 5th edition (Included in Immediate Access).
2. Mastering Physics account (Included in Immediate Access).
3. Scientific calculator (Calculator can't be an internet device).
4. PointSolutions application or classroom clicker (can be purchased in the campus bookstore).

Note: This syllabus is tentative and subject to change for the betterment of the course.

Course Objectives

- 1) Develop a working understanding of important physics concepts such as buoyancy, the Bernoulli Effect, the Ideal Gas Law, Coulomb's Law, electric fields, Gauss's Law, magnetism, and circuits.
- 2) Develop the necessary problem-solving skills in the areas of fluid dynamics, thermodynamics, electricity, magnetism, and circuits.
- 3) Be prepared for future course work in various engineering disciplines (e.g., Circuits, Fluid Dynamics, Electronics, and Applied Electromagnetics).

Faith Objective

Gain a greater appreciation of the Triune God, the Creator of the natural world and the author of the laws of physics.

University Outcome Objectives

University Goal 4: Demonstrate competence in mathematical, scientific, and technological skills.

Grade Weighting

Assignments

Percentage

Exams (2 midterm exams, 1 Final exam)	60%
Homework	20%
Labs	15%
Professionalism	5%

Grade Scale

A	90-100%	A-	87-89%	B+	84-86%
B	75-83%	B-	70-74%	C+	67-69%
C	63-66%	C-	60-62%	D+	57-59%
D	53-56%	D-	50-52%	F	Below 50%

Immediate Access

The textbook and Mastering Physics homework course materials are provided through the Blackboard course. You have immediate day one access to these materials when registered for the course. You do not need to purchase these course materials separately. Charges for these course materials are charged to your Student Account automatically by the CBU bookstore when registered for the course. Additional information and FAQ's about Immediate Access can be found on the Campus Store website here: <https://bookstore.calbaptist.edu/ia>.

Homework

Homework will be assigned through the Pearson Mastering Physics online software. With Immediate Access you can access the Mastering Physics homework through the Blackboard course. You can expect at least 1 homework assignment per chapter with approximately 15 problems. Learning physics is a process and takes a lot of practice, which is the purpose of the homework. You should expect to spend several hours each week working on homework and example physics problems. A general rule of thumb is the more physics problems you work on the better you will do in the course. Late homework will still be accepted through Mastering Physics, but for **every day** the assignment is late the student will lose 5% of credit on late problems up to a maximum penalty of 50%. **Physics is not a subject you can cram for, so don't wait until the last minute to do your homework assignments. You are not likely to succeed in this course if you don't REGULARLY work on your homework.**

Labs

There will be frequent laboratory experiments conducted throughout the semester, as indicated in the course schedule at the end of this syllabus. Experiment manuals will be available on Blackboard and laboratory materials will be provided. Students will work with a lab partner to complete the experiment and submit a written lab

report. Labs will be graded based on the student's completion of written lab reports and constitute 15% of the overall course grade. Lab write-ups are submitted on Blackboard and are due 1 week after the experiment. Any late work will receive a 10% penalty and will receive no credit once it is 2 weeks late. The lowest lab score will be dropped from the final grade calculation to account for sickness and unexpected life events that may result in a student missing a laboratory experiment. Makeup-Labs will generally not be granted except for documented major extenuating circumstances that result in multiple missed lab experiments.

Lab room: James 121

Section A: Thursday 7:30 – 10:15 am

Section B: Thursday 10:45 am – 1:30 pm

Section C: Thursday 2 – 4:45 pm

Office Hours

MWF 10:45 – 11:45 pm, MF 2 – 4 pm, or by appointment.

Office hours are times I have specifically set aside to meet and answer your questions. You can meet me in my office James 468 during the scheduled open office hours. **If you feel you are struggling with the course material in any way, office hours are your first line of defense!** If you cannot make it to my open office hours, please email me and reserve a time to meet that works best for you.

Final Examination

Wednesday April 17th: 9:30 – 11:30 am.

You must take the Final Exam on this date and at this time. Also, no work will be accepted after the final exam.

Professionalism and Participation

- 1) **Class attendance is required and will be monitored.** Attendance and participation will be recorded with students answering questions in-class by the PointSolutions application or physical clicker. Students must have a PointSolutions subscription and have it linked to the Blackboard course.
- 2) If you are absent, regardless of the reason, you are responsible for anything you missed, and must arrange to turn in any work due.
- 3) Excused absences include illness, campus-approved events, and medical emergencies. **DO NOT COME TO CLASS IF YOU ARE SICK!** If you are absent, I need to be informed **by you via email** in advance of the start of the class. If you do not inform me of your absence, it will be unexcused and you will receive no credit for missed work (including exams).
- 4) The course schedule informs you what topics will be covered. To be prepared you should read the sections of the book prior to class.
- 5) Class participation and professionalism are also monitored. Active participation includes alertness, volunteering to answer questions, and remaining focused on the class content. Frequently glancing at your cell phone (or other electronic device), sending and receiving text messages, playing games, watching videos, and performing other non-academic activities during class time is unprofessional, distracting, and discourteous. It will negatively impact your professionalism score.

Make-Up Examinations

Make-up examinations may be considered for students who miss an exam for a university-related activity, or a **documented** medical reason or emergency. Students must notify the professor in writing by CBU email before the exam date. **The student's notification to the professor of an absence does not**

constitute approval of a make-up exam. If a make-up exam is granted, the exam must be made up within 1 week in the Student Success Center (SSC). The SSC will also likely charge a fee for administering the test. In all other cases, make-up examination requests will be denied.

Expectations:

Communication – Students are expected to use the CBU email account they have been assigned for receiving email from faculty members and sending email to faculty members. I will only correspond with you from your CBU email address. It is suggested that students get in a habit of checking their email at least on a daily basis during the business week (M-F). You are required to check Blackboard at least once a week or within 24 hours if requested via email. Documents will often be posted on Blackboard rather than providing hard copies to students in class.

Professionalism – As a professional, you are expected to collaborate with your colleagues during in-class activities or out-of-class group projects, and to respect one another with exemplary listening skills during all interactions, presentations, and class discussions. This also requires supporting your classmates with positive body language and appropriate verbal communication.

Study Groups – Working on homework and studying in groups is *highly* recommended, as active group interactions are very beneficial to the learning process. However, all work you turn in *must be your own original work*. Copying of any kind is considered academic dishonesty (see below). In addition, beware of relying too heavily on other students while completing assignments. If you are continually incapable of completing assignments on your own, please come to my office hours and seek assistance!

Academic Honesty - Any incident of academic dishonesty (cheating, plagiarism, copying, and other forms) must be reported to the Dean of Students. Judicial sanctions may include, but are not limited to, loss of a letter grade or failure in the course in which the offense occurred, suspension, and/or dismissal from the University. A detailed discussion of academic dishonesty appears in the CBU *Student Handbook*.

Repeat Students - If you are repeating this course for any reason, directly copying your own previous work (homework and tutorial solutions, lab reports, etc.) without going through the process another time and redoing the work again **is considered academic dishonesty** unless you have direct written permission from the instructor.

Students with Disabilities - Students who have qualified disabilities and wish to arrange the appropriate accommodations, in addition to the general academic support services coordinated by the Academic Resources Center, must identify themselves to the Director of Disability Services. Disabled students who wish to arrange appropriate accommodations must complete and submit a Request for Accommodations form and provide recent (not older than 3 years) diagnostic test results.

Recording Class Sessions

Recording of class sessions without the prior express written permission of the instructor is prohibited. Any permission granted shall include the requirements that a recording may only be used for content study purposes only and sharing a recording with anyone outside of the course and/or posting on social media are strictly prohibited. This course policy is in alignment with Student Handbook and the Standard of Student Conduct. Refer to Student Handbook policies 15.6, 15.7, and 15.8 for more information.

Physics 203-*Tentative* Course Schedule- Spring 2024

Week 1: January 8th – January 12th

Introduction, Chapter 13

Week 2: January 15th – January 19th

MLK Holiday, Chapter 17, **Lab Intro**

Week 3: January 22nd – January 26th

Chapter 17, Chapter 18, **Lab #1**

Week 4: January 29th – February 2nd

Chapter 19, **Lab #2**

Week 5: February 5th – February 9th

Chapter 19, Chapter 20, Review

Week 6: February 12th – February 16th

Exam #1 (Monday February 12th), Chapter 21, **Lab #3**

Week 7: February 19th – February 23rd

Chapter 21, Chapter 22, Chapter 23

Week 8: February 26th – March 1st

Chapter 23, Chapter 24, **Lab #4**

Week 9: March 4th – March 8th

Chapter 25, Chapter 26, **Lab #5**

Week 10: Spring Break

Week 11: March 18th – March 22nd

Exam #2 (Monday March 18th), Chapter 26, Chapter 27

Week 12: March 25th – March 29th

Chapter 27, Chapter 28, **Lab #6**, **Good Friday**

Week 13: April 1st – April 5th

Easter Monday, Chapter 29, **Lab #7**

Week 14 & 15: April 8th – April 15th

Chapter 30, **Lab #8**, Review

Final Exam Wednesday April 17th: 9:30 – 11:30 am