

PHY-215 The Electromagnetic Universe

Instructor: Paul Saulnier. You may call me Paul.

Office: OHS 208 (507) 933-6123

Office Hours: Just shoot me an email and we can arrange for an online meeting.

Text: *Physics for Scientists and Engineers*, 9th ed. by Serway and Jewett (Hybrid edition)

Classes: MTWRF 9:00-9:50 a.m. in OHS 220 or Online (mostly asynchronously).

Laboratory: PHY-216 is the required co-requisite laboratory for The Electromagnetic Universe.

Attendance: Regular class attendance is expected. If you miss a class for any reason you are responsible for the material covered during the class, including any assignments. Excessive absences will impact your final grade!

Homework: Homework will be assigned regularly. Late homework will be accepted at the discretion of the instructor, with loss of points. Homework should be your own work, however, some collaboration is anticipated.

Makeup: Missed exams may be made up at the discretion of the instructor with prior notification only.

Final Exam: Date TBD - As with all exams, they will be synchronous online or in person.

Coverage: We will be covering the following chapters.

Chapter 23 - Electric Fields

Chapter 24 - Gauss's Law

Chapter 25 - Electric Potential

FIRST HOUR EXAM

Chapter 26 - Capacitance and Dielectrics

Chapter 27 - Current and Resistance

Chapter 28 - Direct Current Circuits

SECOND HOUR EXAM

Chapter 29 - Magnetic Fields

Chapter 30 - Sources of the Magnetic Field

Chapter 31 - Faraday's Law

THIRD HOUR EXAM

Chapter 32 - Inductance

Chapter 33 - Alternating Current Circuits

Chapter 34 - Electromagnetic Waves

FOURTH HOUR EXAM

Review or other topics (time permitting)

COMPREHENSIVE FINAL EXAM

Evaluation: There will be four hour exams $4 \times 15\% = 60\%$

One two-hour final exam 20%

Homework & Quizzes 20%

There will be 10 HW pts given per week for mentorship program participation.

Final course grades will be assigned using the following scale as a **guide**:

94-100 A 74-78 C+ 0-58 F

90-94 A- 70-74 C

86-90 B+ 66-70 C-

82-86 B 62-66 D+

78-82 B- 58-62 D

Please note that these ranges are only guidelines. Final grades will also take into account the instructor's evaluation of the student's attendance, participation, and evidence of improvement or regression.

Academic Honesty: By writing your name on any graded assignment for this class, you are attesting to the fact that it has been completed in accord with the college's academic honor policy. I take this responsibility seriously and I expect that you will also. If you have any doubt about what constitutes appropriate use of someone else's work, please ask.

Requesting Accommodations:

Gustavus Adolphus College is committed to ensuring equitable and inclusive learning environments for all students. If you have a disability and anticipate or experience barriers to equal access, please speak with the accessibility resources staff about your needs. A disability may include mental health, attentional, learning, chronic health, sensory, physical, and/or short-term conditions. Students with a documented elevated risk of COVID-19 may also request academic accommodations. When appropriate, staff will guide students and professors in making accommodations to ensure equal access. Accommodations cannot be made retroactively; therefore, to maximize your academic success at Gustavus, please contact them as early as possible.

Accessibility resources staff are located in the Academic Support Center

(<https://gustavus.edu/asc/accessibility/>) (x7227). Accessibility Resources Coordinator, Katy Clay, (clayk@gustavus.edu), can provide further information.

Instructor's Note: My job in this class is to help you learn physics. I take this responsibility seriously and I would ask you to help me do my best. Specifically, I would encourage you to ask questions about the material during class and speak with me outside of class to discuss any course related concerns. Don't wait until the end of the semester to inform me of your concerns - by then it is too late. Your opinion is important to me.