

# PHY350 Electromagnetic Theory

Gustavus Adolphus College Spring 2019

**Instructor:** Dr. Tom Huber

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**Course Assignments and Resource Page:** 2018 s-phy-350-001 Page at [moodle.gac.edu](https://moodle.gac.edu)

**Textbooks:** *Electromagnetic Fields* (2nd Edition), by Roald K. Wangsness  
*Mathematical Handbook of Formulas and Tables*, by Murray R. Spiegel

## **Course Policy and Evaluation:**

- 1. Class Meetings and Reading Assignments:** The class will meet five days a week from 12:30-1:20 PM. Usually, four periods per week will be used for lecture and group activities. Class periods on the fifth day will be used for student presentations of problem solutions or for exams. Attached is a daily calendar of activities for the course. When reading assignments are made for a class session, *the reading is expected to be completed before coming to the class.*
- 2. Homework:** Homework problems will be assigned once per week and are due at the beginning of class on the scheduled date. Late homework may be accepted at the discretion of the instructor with a reduction in credit.
- 3. Group Activities:** On many days, students will work in groups of two or three to complete an activity or problem in a cooperative-learning setting, submitting a solution before the end of the class period. Each member of the group will receive the same grade for their solution.
- 4. Problem Discussions:** On most Fridays, three students will each be assigned to present a discussion of a particular problem illustrative of the concepts studied in class that week. Each student should be prepared to present the solution in about 10-12 minutes, and to respond to questions or lead further discussion of the problem for an additional 2-3 minutes. Each student will have multiple opportunities during the semester to lead a problem discussion. The problems to be discussed will be assigned approximately five days in advance. Grades will be given both for presenters and for participation by others in the subsequent discussions.
- 5. Course Communication:** Email is an official means for communication at Gustavus Adolphus College. I expect that you will check your Gustavus email at least once per day. Course assignments and other resources will be posted to the Moodle page for this course.
- 6. Attendance :** Regular attendance at all class meetings is expected. Students will be held responsible for informing themselves of all announcements/assignments made in class.

7. **Use of Electronic Devices in Class:** The use of cellular phones, tablets, and laptop computers during the lectures is prohibited. Exceptions may be made to accommodate student disabilities.
8. **Exams:** There will be four one-hour exams and a two-hour final exam. The date for each of the exams is given in the calendar below. The score of the lowest one-hour exam will be given half weight in the final grade for the course. Students must arrange in advance to take an exam at other than the scheduled time, and may do so only for a valid health or school-related reason.
9. **Evaluation:**

Homework	20%
Group Problems	10%
Problem Discussions	10%
Hour Exams	10% each
Final Exam	20%

Assignment of final letter grades will be based upon the following guidelines:

	B+ = 86-90%	C+ = 74-78%	D+ = 62-66%
A = 94-100%	B = 82-86%	C = 70-74%	D = 58-62%
A- = 90-94%	B- = 78-82%	C- = 66-70%	

Assignment of final letter grades will also take into account the instructor's subjective evaluation of the student's attendance, initiative, preparation (particularly quantity and quality of homework), and evidence of improvement.

10. **Academic Honesty:** Having signed and agreed to abide by the College's Honor Code, students thereby pledge that, in all academic exercises, examinations, papers, and reports, they shall submit their own work. Footnotes, or some other acceptable form of citation must accompany any use of another's words or ideas. In the context of this course, students are expected to collaborate and to discuss their out-of-class assignments. However, submitting under one's own name work that is merely copied from another is a violation of the Honor Code. Full descriptions of the Academic Honesty Policy and the Honor Code can be found in the Academic Catalog (online at: [www.gustavus.edu/general\\_catalog/current/acainfo](http://www.gustavus.edu/general_catalog/current/acainfo)).
11. **Incompletes:** A grade of incomplete may be awarded at the discretion of the instructor, if requested by the student, under the following conditions: 1) the last day to withdraw has passed, 2) and unforeseen circumstances beyond the student's control (usually restricted to illness or family emergency) preclude completion of the remaining work for the course by the semester deadline. See Academic Catalog for official policies.
12. **Getting Help:** If you have trouble with any aspect of the course, make sure you let me know as early as possible. By being proactive in reaching out for assistance, I can better help you identify strategies for success.
13. **Help for Multilingual Students:** Some Gusties may have grown up speaking a language (or languages) other than English at home. If so, we refer to you as "Multilingual." Your multilingual background is an incredible resource for you, and for our campus, but it can come with some challenges. You can find support through the Center for International and Cultural Education's (<https://gustavus.edu/cice/>) Multilingual and Intercultural Program Coordinator (MIPC). They can meet individually for tutoring in writing, consulting about specific assignments, and helping students

connect with the College's support systems. If you want help with a specific task (for example, reading word problems on an exam quickly enough or revising grammar in essays), let your professor and Carly know as soon as possible. In addition, the Writing Center (<https://gustavus.edu/writingcenter/>) offers tutoring from peers (some of whom are themselves multilingual) who can help you do your best writing.

14. **Disability Services:** Gustavus Adolphus College is committed to ensuring the full participation of all students in its programs. If you have a documented disability, or you think you may have a disability of any nature (e.g., mental health, attentional, learning, chronic health, sensory, or physical) and, as a result, need reasonable academic accommodation to participate in class, take tests or benefit from the College's services, then you should speak with Accessibility Resources staff for a confidential discussion of your needs and appropriate plans. Course requirements cannot be waived, but reasonable accommodations may be provided based on disability documentation and course outcomes. Accommodations cannot be made retroactively; therefore, to maximize your academic success at Gustavus, please contact Accessibility Resources as early as possible. Accessibility Resources (<https://gustavus.edu/care/accessibility/>) is located in the Center for Academic Resources and Enhancement.
15. **Mental Wellbeing:** The Gustavus community is committed to and cares about all students. Strained relationships, increased anxiety, alcohol or drug problems, feeling down, difficulty concentrating, and/or lack of motivation may affect a student's academic performance or reduce a student's ability to participate in daily activities. If you or someone you know expresses such mental health concerns or experiences a stressful event that can create barriers to learning, Gustavus services are available to assist you. You can learn more about the broad range of confidential health services available on campus at <https://gustavus.edu/counseling/and> <https://gustavus.edu/deanofstudents/services/>.
16. **Title IX: Sexual Misconduct Prevention and Resources:** Gustavus Adolphus College recognizes the dignity of all individuals and promotes respect for all people. As such, we are committed to providing an environment free of all forms of discrimination including sexual and gender-based discrimination, harassment, and violence like sexual assault, intimate partner violence, and stalking. If you (or someone you know) has experienced or is experiencing these types of behaviors, know that you are not alone. Resources and support are available; you can learn more online at <https://gustavus.edu/titleix/>. Please know that if you choose to confide in me, I am mandated by the College to report to the Title IX Coordinator, because Gustavus and I want to be sure you are connected with all the support the College can offer. Although it is encouraged, you are not required to respond to outreach from the College if you do not want to. You may speak to someone confidentially by contacting the Sexual Assault Response Team (SART/CADA), Chaplains, Counseling Center, or Health Service staff; conversations with these individuals can be kept strictly confidential. SART/CADA can be reached 4 hours a day at 507-933-6868. You can also make a report yourself, including an anonymous report, through the form at <https://gustavus.edu/titleix/>.

Section coverage – §, Discussion problems, HW Due dates, and Exams

All dates, coverage, problem numbers etc **subject to change**.

Wk/Mo	Monday	Tuesday	Wednesday	Thursday	Friday
1 / Feb 11	§1.1—1.11	§1.12—1.15	§1.16—1.18	§1.19—1.20	Problems Chapter 1
2 / Feb 18	§2.1—2.4 HW Ch. 1	§2.5	§3.1—3.3	§3.4—4.1	Problems Chapter 2 & 3
3 / Feb 25	§4.2 HW Ch. 2, 3	§4.3	§5.1—5.2	§5.3—5.4	Problems Chapter 4 & 5
4 / Mar 4	§6.1—6.2 HW Ch. 4, 5	§6.2—6.3	Exam #1 Chapters 1-5	§7.1—7.2	§7.3—7.4
5 / Mar 11	§8.1 HW Ch. 6, 7	§8.2	§8.3—8.4	§9.1—9.5	Problems Chapter 8
6 / Mar 18	§9.5—10.2	§10.2—10.4 HW Ch. 8, 9	§10.4—10.5	§10.6—10.7 (Read 10.8— 10.9)	Problems Chapter 9 & 10
7 / Mar 25	§11.1—11.2 HW Ch. 10	§11.2—11.3	Exam #2 Chapters 6-10	§11.4	§11.5—11.6
8 / Apr 1	Spring Break				
9 / Apr 8	§12.1—12.2 HW Ch. 11	§12.3—12.6	§13.1—13.3	§14.1—14.3	Problems Chapter 12 & 13
10 / Apr 15	§14.4—14.5 HW Ch. 12, 13	§15.1	§15.2	Problems Chapter 14 & 15	
11 / Apr 22		§16.1—16.2 HW Ch. 14, 15	§16.3—16.5	§17.1—17.4	Problems Chapter 16 & 17
12 / Apr 29	§18.1—18.3 HW Ch. 16, 17	§19.1—19.2	Exam #3 Chapters 11-16	§19.3—19.4	Problems Chapter 18 & 19
13 / May 6	§20.1—20.3 HW Ch. 18, 19	§20.4—20.5	§20.6—21.1	§21.2—21.3	Problems 20 & 21
14 / May 13	§21.3—21.5 HW Ch. 20	TBD	TBD	TBD	Problems?
15 / May 20	TBD HW Ch. 21, TBD	TBD	Exam #4 Chapters 17-??		<i>Final: Sat. May 25, 1-3</i>