

PHYSICS 405

Electricity and Magnetism Laboratory

T 2:00-5:00PM/R 2:00-3:50PM, IESB 304

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Office Hours: MTWRF 8:30-10:30 am
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Special Notice on COVID-19 preparedness: In the event that a disaster or other emergency results in campus closure, this course will continue via Moodle. You will be required to login to moodle.latech.edu for further instructions. Please enroll in the Emergency Notification System to receive official campus updates. You may also refer to ert.latech.edu for updated information.

Course Description: This Laboratory intended to serve as an introduction to the basic principles that govern the electrical and magnetic phenomenon. The goal is to help the students to develop independent project oriented skills related to experimental electromagnetism. Please see the tentative schedule of the class at the end of the this document.

Prerequisite(s): none

Credit Hours: 2

Suggested Text: *Introduction to Electrodynamics*, 3rd Edition or higher

Author: D. J. Griffiths;

Required software: PASCO Science workshop

Grading Policy:

- Peer discussions (in class and outside) and attendance - 20%
- Lab reports - 80%
 - There will be 8 or 9 in class lab activities and I will drop the least grade lab report.
 - Lab report is due two weeks from the date of the lab.
 - Failure to return the lab report before due date will be penalized by deducting points from attendance. You will loose 3 point (out of 20) for each missed lab report.
 - See tentative schedule of activities. This is subjected to change as the course proceeds.

Grading Scale: A : ≥ 88 , B : 75 - 87, C: 60 - 74, D: 50 - 59, F ≤ 49

Academic Honor Code Summary: In accordance with the Academic Honor Code as stated in the university catalog, student must pledge: Being a student of higher standard, I pledge to embody the principles of academic integrity.

Please visit <https://www.latech.edu/documents/2018/09/student-handbook.pdf> for more information

Attendance: Attendance will be recorded for all the classes. For every class or lab missed, you are required to provide a valid excuse. your contribution to final grade from peer discussions and attendance will be reduced proportional to missed classes. Contact me if you have questions regarding attendance policy.

Peer Discussions: I will provide informal exercises to be solved in class and as homework to encourage peer discussions. Students are expected to include a discussion about these exercises in their lab reports.

Students with Disabilities: Students needing testing or classroom accommodations based on a disability are encouraged to discuss these needs with the instructor as soon as possible. An accommodations memo is available at the Office of Disability Services (<http://www.latech.edu/ods>)

Emergency Notification System: Students are encouraged to enroll and update their contact information in the Emergency Notification System. This will ensure that you will receive important texts and voice alerts in an event of a campus emergency. Please visit <http://www.latech.edu/administration/ens.php>

Course Outline: The proposed coverage might change with the progress of the class. Therefore what is given below is a tentative course outline.

Tentative Schedule

Week/Date	Unit
Week1/Mar 12	Introduction
Week2/Mar 17/19	Lab 1: Stationary Magnetic Fields
Week3/Mar 24/26	Lab 2: The Faradays Law of Magnetic Induction
Week4/Mar 31/Apr 2	Lab 3: Self- and Mutual Inductance
Week5/Apr 7/9	Lab 4: Electromagnetic Radiation-microwave antennas
Week6/Apr 14/16	Lab 5: Diffraction of Microwave Radiation
Week7/Apr 21/23	Lab 6: Microwave Transmission Lines and Cavities
Week8/Apr 28/30	Lab 7: Microwave Transmission Lines and Cavities
Week9/May 5/7	Lab 8: Microwave Transmission Lines and Cavities
Week10/May 12/14	Lab 9: Microwave Transmission Lines and Cavities
Week11/May 19/21	Reserve