

COURSE SYLLABUS: PHYS2326.002.21S (SPRING 2021)

Course Information

<i>Course Number/Section</i>	PHYS2326.002.21S
<i>Course Title</i>	ELECTROMAGNETISM AND WAVES
<i>Term</i>	SPRING 2021
<i>Days & Times</i>	Mondays and Wednesdays, 10:00 am-11:15 am (synchronous : Live online class via Microsoft Teams; asynchronous : recorded lectures posted on e-learning)

Professor Contact Information

<i>Instructor</i>	Dr. Lloyd Lumata
<i>Office Phone</i>	972-883-2850
<i>Email Address</i>	lloyd.lumata@utdallas.edu
<i>Office Location</i>	SCI2.166
<i>Research Website</i>	http://dnpmr.weebly.com/

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Prerequisites: MATH 2419 (Calculus II) or MATH 2414 (Integral Calculus) or equivalent. Students must register for Physics Lab. No exceptions to these will be allowed without the instructor's and/or other advisor's permission. Familiarity with basic mathematics (including algebra, geometry, trigonometry and basic integral and differential calculus) is assumed.

Course Description

Continuation of PHYS 2325. Topics include electrostatics and electromagnetics, electric field and potential, electric currents, magnetic fields, laws of Coulomb, Ampere, and Faraday, Maxwell's theory of wave propagation. Two lectures per week.

Student Learning Objectives/Outcomes

The course is intended to develop a qualitative and quantitative picture as to how a few basic equations can explain electrical and magnetic phenomena as experienced in our scientific and daily life. Also, the course will describe how this knowledge will be put together to predict electromagnetic radiation. The outcome is to be able to apply this background and acquired problem solving techniques to problems related to the student's career choice in fields such as engineering or biomedicine. The measurement of the student's knowledge obtained from this course and his/her problem-solving capability will be primarily by the class exams.

Topics included for this course (textbook: University Physics with modern physics, 14th edition)

Midterm 1 chapters

- Chap. 21. Electric Charge and Electric Field (Jan 20 & 25, 2021)
- Chap. 22. Gauss's Law (Jan 27 & Feb 1, 2021)
- Chap. 23. Electric Potential (Feb 3 & 8, 2021)
- Chap. 24. Capacitance and Dielectrics (Feb 10 & 15, 2021)

Midterm 2 chapters

Chap. 25. Current, Resistance and Electromotive force (Feb 22 & 24, 2021)
Chap. 26. Direct Current Circuits (Mar 1 & 3, 2021)
Chap. 27. Magnetic Field and Magnetic Forces (Mar 8 & 10, 2021)
Chap. 28. Sources of Magnetic Field (Mar 22 & 24, 2021)

Final exam chapters

Chap. 29. Electromagnetic Induction (Apr 5 & 7, 2021)
Chap. 30. Inductance (Apr 12 & 14, 2021)
Chap. 31. Alternating Current (Apr 19 & 21, 2021)
Chap. 32. Electromagnetic Waves (Apr 26 & 28, 2021)

Recommended Textbook and Required Access Code

We will primarily follow UNIVERSITY PHYSICS, (preferably 14th Ed.; newer or earlier versions are also fine) by Young and Freedman, publisher Pearson-Addison Wesley. If you are purchasing the book, make sure that it includes the student access kit in order to do online homework. If you already have the book and are not already registered, you will need to register at the URL www.pearsonmylabandmastering.com so that you can access the homework web site for this class.

Mastering Physics is mandatory for the class. If not obtained with your text, you need to purchase the access codes online. Homework is graded and assignments will be made on-line in Mastering Physics. In order to do the homework, you must have access to the internet. The basic instructions are as follows:

- 1) Go to www.pearsonmylabandmastering.com and select Student under Register.
- 2) Select OK! Register now.
- 3) Enter the course ID your instructor sent to you:
- 4) Course ID: lumata20740**
- 5) Select Continue.

Additional Info for Pearson Mastering Physics:

Course Name: PHYS2326.002.21S Electromagnetism & Waves (Prof. Lumata)

Course ID: lumata20740

Course Type: Student Course

Course Dates: Jan 18, 2021 - May 05, 2021

Enrollment Dates: Jan 18, 2021 - Mar 31, 2021

Course Materials: Modified Mastering Physics for University Physics with Modern Physics 14th Edition

LECTURE NOTES

Copies of the lecture notes will be posted on eLearning (BlackBoard) that is available on the UTD home page: <https://elearning.utdallas.edu/>. Your UTD user NET ID and password will give you access to this. You are expected to check this site regularly.

Major Exams: There will be two midterm exams and a final exam (with tentative dates):

Midterm Exam 1 – February 17, 2021

Midterm Exam 2 – March 31, 2021

Final Exam – May 05, 2021

All these 3 major exams will be given online on e-learning.

A total of 10 online quizzes will throughout the semester.

Grading Policy

Your course grade will be based on 3 major exams (2 midterm exams plus the final exam), quizzes, and homework. Each of these 3 major exams will count for 23.33% of your grade. The final exam is not cumulative. Homework will count for 20% of your grade. There will be online quizzes on e-learning almost weekly. **Your weekly quiz counts for 10% of your grade.** Initial assignment of letter grades will follow the usual break points.

Letter Grading

97-100	%	A+
93-96.99		A
90-92.99		A-
87-89.99		B+
83-86.99		B
80-82.99		B-
77-79.99		C+
73-76.99		C
70-72.99		C-
67-69.99		D+
63-66.99		D
60-62.99		D-
< 59.99		F

Homework	20%
Quizzes.....	10%
Midterm Exam 1.....	23.33%
Midterm Exam 2.....	23.33%
<u>FINAL Exam.....</u>	<u>23.33%</u>
TOTAL	100%

Exam scores and grading will be posted on eLearning (BlackBoard) that is available on the UTD home page: <https://elearning.utdallas.edu/>.

Course Policies

No make up exams will be given, but do speak with me if there are extenuating circumstances regarding absence for exams. You will be required to produce a medical note or other supporting documentation.

AccessAbility Services

It is the policy and practice of The University of Texas at Dallas to make reasonable accommodations for students with properly documented disabilities. However, written notification from the Office of Student

AccessAbility (OSA) is required. If you are eligible to receive an accommodation and would like to request it for this course, please discuss it with your professor and allow one week advance notice. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.) are invited to contact OSA for a confidential discussion. OSA is located in the Student Services Building, SSB 3.200. They can be reached by phone at 972-883-2098, or by email at studentaccess@utdallas.edu

Class Materials

The Instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

COVID-19 Guidelines and Resources

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record. Please see <http://go.utdallas.edu/syllabus-policies>.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrates a high standard of individual honor in his or her scholastic work.

Academic Dishonesty: Academic dishonesty can occur in relation to any type of work submitted for academic credit or as a requirement for a class. It can include individual work or a group project. Academic dishonesty includes plagiarism, cheating, fabrication, and collaboration/collusion. In order to avoid academic dishonesty, it is important for students to fully understand the expectations of their professors. This is best accomplished through asking clarifying questions if an individual does not completely understand the requirements of an assignment.

Additional information related to academic dishonesty and tips on how to avoid dishonesty may be found here: <https://www.utdallas.edu/conduct/dishonesty/>

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

UT Dallas Syllabus Policies and Procedures

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.