COURSE SYLLABUS: PHYS2326.001.22F (FALL 2022)

Course Information

Course Number/Section	PHYS2326.001.22F
Course Title	ELECTROMAGNETISM AND WAVES
Term	FALL 2022
Classroom	SCIENCES Building lecture hall SCI 1.220
Days & Times	Tuesdays and Thursdays, 10:00 am-11:15 am (lectures will be recorded and posted on e-learning)

Professor Contact Information

Instructor	Dr. Lloyd Lumata			
Office Phone	972-883-2850			
Email Address	lloyd.lumata@utdallas.edu			
Office Location	SCI2.166			
Research Website	http://dnpnmr.weebly.com/			
Teaching Assistant:	Michael Dunia, e-mail: michael.dunia@utdallas.edu			
TA and SI session times and venue (via Microsoft Teams): TBA				

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.

PHYS2326 Lectures and I LECTURE/EXAM	Exam Dates DATE (2022)	CHAPTER	ΤΟΡΙϹ
Lecture 1	Aug. 23 & Aug. 20	Chapter 21	Electric Charge and Field
Lecture 2	Aug. 30 & Sep. 01	Chapter 22	Gauss's Law
Lecture 3	Sep. 06 & Sep. 08	Chapter 23	Electric Potential
Lecture 4	Sep. 13 & Sep. 15	Chapter 24	Capacitance & Dielectrics
Review	Sep. 20	Chapters 21-24	
MIDTERM 1	Sep. 22, 2022	Chapters 21-24	
Lecture 5	Sep. 27 & Sep. 29	Chapter 25	Current,Resistance,& EMF
Lecture 6	Oct. 4 & Oct. 06	Chapter 26	DC Circuits
Lecture 7	Oct. 11 & Oct. 13	Chapter 27	Magnetic Field & Forces
Lecture 8	Oct. 18 & Oct. 20	Chapter 28	Sources of Magnetic Field
Review	Oct. 25	Chapters 25-28	
MIDTERM 2	Oct. 27, 2022	Chapters 25-28	
Lecture 9	Nov. 01 & Nov. 03	Chapter 29	Electromagnetic Induction
Lecture 10	Nov. 08 & Nov. 10	Chapter 30	Inductance
Lecture 11	Nov. 15 & Nov. 17	Chapter 31	Alternating Current
	SPRING BREAK	November 21-25	No class
Lecture 12	Nov. 29 & Dec. 01	Chapter 32	Electromagnetic waves
Review	Dec. 06	Chapters 29-32	
FINAL EXAM	Dec. 08, 2022	Chapter 29-32	

Schedule may vary.

Recommended Textbook and Required Access Code

We will primarily follow UNIVERSITY PHYSICS, (preferably 15th Ed.; 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 <u>www.pearsonmylabandmastering.com</u> so that you can access the homework web site for this class.

<u>Mastering Physics is mandatory for the class</u>. 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 <u>www.pearsonmylabandmastering.com</u> and select Student under Register.
- 2) Select OK! Register now. Use your UTD netid for email
- 3) Enter the course ID your instructor sent to you:
- 4) Course ID: lumata70504
- 5) Select Continue.

Course Name: PHYS 2326 Section 01 Fall 2022 (Instructor: Prof. Lumata) Description: Electromagnetism and Waves PHYS 2326 Fall 2022 Course ID: lumata70504 Course Dates: Aug 23, 2022 - Dec 08, 2022 Enrollment Dates: Aug 23, 2022 - Sep 06, 2022 Course Materials: Modified Mastering Physics for University Physics with Modern Physics 15th Edition

LECTURE NOTES

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

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 will be given online on e-learning. Quizzes count for 10% of your grade.

Letter Grading

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

Grading criteria summary

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

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

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 <u>Student Code of Conduct</u>.

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: <u>https://www.utdallas.edu/conduct/dishonesty/</u>

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 <u>http://go.utdallas.edu/syllabus-policies</u> for these policies.

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