

PHYS2326 – Electromagnetism and Waves

- Revised syllabus for an online format –

Some important new information is **highlighted** for your convenience!

1. Course Information

Course Number / Section: 2326.001

Course Title: Electromagnetism and Waves

Term: Spring 2020

Digital lectures posting days and times: MW 01:00 pm

2. Instructor Contact Information

Instructor: Dr. Fabiano Rodrigues

Office's phone number: (972) 883 4526

E-mail address: fabiano@utdallas.edu

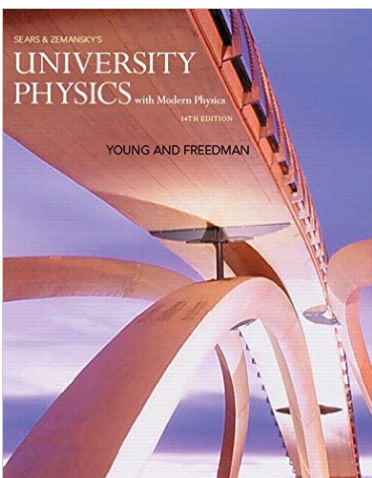
Teaching Assistant: Saif Ali

E-mail address: sxa180025@utdallas.edu

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

Prerequisites: PHYS 2325 (Mechanics) and MATH 2419 (Calculus II) or MATH 2414 (Integral Calculus) or equivalent. Students must register for Physics Lab II (PHYS 2126). Familiarity with basic mathematics (including algebra, geometry, trigonometry and basic integral and differential calculus) is required and assumed.

4. Textbook and Materials



- **Book:** University Physics with Modern Physics (14th edition) by Young and Freedman, publisher Pearson. Any recent version of this book should have the same material in the nearly the same order.
- **MasteringPhysics:** If you are purchasing the book, make sure that it includes the student access kit in order to do the online homework assignments. If you already have the book and are not already registered, you will need to register at <http://www.masteringphysics.com> so that you can access the homework assignments for this class. When registering, you will be asked for the MasteringPhysics course ID for this class, which is **S20PHYS2326RODRIGUES**.
- You will also need a **scientific calculator**.

5. Student Learning Objectives/Outcomes

The primary objectives of the course are (a) to gain an understanding of electromagnetism and its relevance to the real world and (b) to develop the problem-solving skills needed for a successful career in sciences and engineering.

As a result of the course, the student is expected to demonstrate an understanding of the key concepts of electricity and magnetism - the laws, theories and relevant findings - and to be able to apply this knowledge to solving problems.

Topics include:

- Ch. 21 - Electric Charge, Electric Field, and Coulomb's Law
- Ch. 22 - Gauss's Law
- Ch. 23 - Electric Potential Energy and Electric Potential
- Ch. 24 - Capacitance and Dielectrics
- Ch. 25 - Electric Current, Resistance, and Electromotive Force (EMF)
- Ch. 26 - Direct Current (DC) Circuits
- Ch. 27 - Magnetic Field and Magnetic Force
- Ch. 28 - Sources of Magnetic Field
- Ch. 29 - Electromagnetic Induction, Faraday's Law and Lenz's Law
- Ch. 30 - Inductance
- Ch. 31 - Alternating current (if time allows)
- Ch. 32 - Maxwell's Equations and Electromagnetic waves

6. Grading Policy - Assessments

Final grades are determined from a combination of the items below.

	Exam 1	Exam 2	Exam 3	Homework	Total
Weight	25%	25%	25%	25%	100%
Date	Feb. 19	April 6	Apr. 29	Weekly	

Important: The final exam date (during finals week) to be set by the university will be used for make-up exams. Make-up exams are only allowed for documented reasons (illness, death in the family, etc.). Unlike exams 1-3, make-up exams are cumulative.

7. Course grading

A (≥ 93.0), A- (90.0 – 93.0), B+ (87.0 – 89.9), B (83.0 – 86.9), B- (80.0 – 82.9), C+ (77.0 - 79.9), C (73.0 - 76.9), C- (70.0 – 72.9), D+ (67.0 – 69.9), D (63.0 – 66.9), D- (60.0 – 62.9), **F (< 60)**

8. UT Dallas Syllabus Policies and Procedures

Information in the link below constitutes the University's policies and procedures:

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

9. Attendance, Homework, and Exams

- Any **announcement** will be made, primarily, in the lecture slides and by e-mail.
- **Homework** will continue through <http://www.masteringphysics.com>
 - Go to the website, login as a student and follow the instructions. My course ID for this class is **S20PHYS2326RODRIGUES**.
 - **Make sure the name you give to the website matches your name of record at UTD.**
 - No handwritten homework will be accepted.
 - HW assignments are released on Fridays at 11:59pm and are due at 11:59pm on the Saturday of the following week. Therefore, you have about 8 days to finish each HW.
 - Late HW submissions will not be accepted.
 - I strongly recommend you to print out your homework problems and do the work on your printouts. It is a convenient way to keep everything together. Successful students have done this in the past.
 - You will be allowed to 20 (!) attempts per question.
 - You are welcome to work together on homework but everyone must do their own problems. You will notice everyone has different numbers.
- **Exams** will be online through eLearning. More details below.
 - Students will need to have to log into eLearning. A link to exams will be posted there.
 - Exams are individual assessments and, therefore, should be taken individually (without help). As usual, **academic integrity** is expected from all UT Dallas students. Here is a good resource if you need to understand how academic dishonesty affects you: <http://www.utdallas.edu/deanofstudents/integrity/>
 - Exams will start at 1:00pm and last until 2:15pm. Please, note that exam will close and answers will be automatically submitted at 2:15pm if student has not yet submitted his/her answers by that time.
 - You will need a scientific calculator for the exams. You will also need a copy of the formula sheet provided in this course. You can download one on eLearning.
 - You must know the concepts and vocabulary for the exams. Exams will cover both in-class examples and homework.
 - Any question about an exam grade must be addressed by the next class day after handing out of the exam to the class. After that all grades are final.

10. Resources for Student Success

The following resources are available to help students:

- **Lecture slides:** Copies of lecture slides will be made available on eLearning before each lecture.
- **Audio notes:** To compensate the lack of in-person lectures, the slides (power point slideshows) will be accompanied by audio notes provided by the instructor.
- **Textbook:** The lectures will follow closely the order, material, and notation used in the textbook.
- **Homework Assignments:** Not only they will help you (a) better understand the material seen in class and (b) prepare you for the exams, but they will also be graded so that you will get credit for doing them.
- **Discussion board:** To compensate the lack of in-person interactions for clarifications and discussion, we will be testing the use of a discussion board on eLearning. Students are encouraged to post questions related to lectures and homework assignments. The board will be moderated by the TA and instructor.

11. 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.”

Note that the descriptions and timelines provided in this syllabus are subject to change at the discretion of the instructor.