

## PHYS4315: Electromagnetic Field Theory 2.

Text: Introduction of Electrodynamics, Fourth Edition, David J. Griffiths.

Office Hours: MW 9:00-10:00, TR 11:00-12:00 or by appointment.

Instructor: Dr. Ir. Wilhelmus J. Geerts

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Class room: RFM3223

Meeting time: MW 12:30-1:50

Course Description: An introduction to the electromagnetic field theory of classical physics for time varying fields. Topics included will be magnetic field of steady currents, magneto static energy, and magnetic properties of matter, the electromagnetic induction, time varying electric fields and magnetic fields, Maxwell's equations, electromagnetic energy, electromagnetic waves and radiation, and a brief introduction to some specialized topics.

Objectives: This course is much more mathematical inclined then the sophomore Electricity and Magnetism course (PHYS2425). We will cover chapters 5 through 9 of the text (pages 202 through 415).

Prerequisite: PHYS4310.

Withdrawal: You may withdraw from the course and receive an automatic W until 5:00 PM on March 20. Withdrawal from the university (this means all your classes) can be done until April 17, 5:00 PM.

Grades: Grades for the course will be determined as follows:

Homework	30%
Semester Exams and Final	65%
Class work and class attendance	10%

Attendance: You have to attend at least 70% of the lectures otherwise you will get automatically an F for the course.

### Honor Code Texas State University

Texas State University-San Marcos expects students to engage in all academic pursuits in a manner that is beyond reproach. Students found in violation of the Honor Code are subject to disciplinary action. The full Texas State Honor Code can be found in the next page of this syllabus and at the following URL: [www.txstate.edu/effective/upps/upps-07-10-01-att1.html](http://www.txstate.edu/effective/upps/upps-07-10-01-att1.html)

**Important Dates:**

Schedule Changes	January 17 – January 28	12 <sup>th</sup> Class Day. Students may drop by 11:59 PM and receive a 100% refund. Students may drop the class and receive an automatic “W” on their transcript. Must withdraw (drop hours to zero) by 5:00 PM.
Refund Drop Deadline	February 4	
Class Drop Deadline	March 26	
Withdrawal Deadline	April 23	

**Preliminary Schedule PHYS 4315: Electromagnetic Field Theory 2.**

Wednesday 1-21-2015	Ch5: Magnetostatics
Monday 1-26-2015	Ch5: Magnetostatics
Wednesday 1-28-2015	Ch5: Magnetostatics
Monday 2-2-2015	Ch6: Magnetic Fields in Matter
Wednesday 2-4-2015	Ch6: Magnetic Fields in Matter
Monday 2-9-2015	Ch6: Magnetic Fields in Matter
Wednesday 2-11-2015	Review
<b>Monday 2-16-2015</b>	<b>Semester Exam 1</b>
Wednesday 2-18-2015	Ch7 Electrodynamics
Monday 2-23-2015	Ch 7 Electrodynamics
Wednesday 2-25-2015	Ch7. Electrodynamics
Monday 3-2-2015	Ch7. Electrodynamics
Wednesday 3-4-2015	Review
Monday 3-9-2015	Semester Exam 2
Wednesday 3-11-2015	Ch. 8. Conservation Laws
<i>Monday 3-16-2015</i>	<i>Spring Break</i>
<i>Wednesday 3-18-2015</i>	<i>Spring Break</i>
Monday 3-23-2015	Ch. 8. Conservation Laws
Wednesday 3-25-2015	Ch. 8. Conservation Laws
Monday 3-30-2015	Ch. 8. Conservation Laws
Wednesday 4-1-2015	Review
Monday 4-6-2015	Semester Exam 3
Wednesday 4-8-2015	Ch. 9. Electromagnetic Waves
Monday 4-13-2015	Ch. 9. Electromagnetic Waves
Wednesday 4-15-2015	Ch. 9. Electromagnetic Waves
Monday 4-20-2015	Ch. 9. Electromagnetic Waves
Wednesday 4-22-2015	Review
Monday 4-27-2015	Semester Exam 4
Wednesday 4-29-2015	Review
Monday 5-4-2015	Review
<b>Wednesday 5-13-2015</b>	<b>Final Comprehensive Exam 11:00-1:30</b>