

Syllabus Physics 451 Spring 2015

Meets: Monday, Wednesday and Friday @ 12:30-1:20pm in Jorgensen Hall 247

Textbook: Introduction to Electrodynamics by David J. Griffiths 4th Edition

Office Hours: Mondays 2pm-3pm and Tuesdays 10:30am-12:30pm or by appointment.

Instructor

Martin Centurion

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Time required to do well: 12-15 hours/week outside of class.

Lectures: You are required to read the relevant chapters in the textbook before coming to class. I will assume that you are familiar with the material. There will be occasional quizzes in the class. The lecture will include going over the material and doing practice problems.

Homework: Homework will be due weekly in class (or in my mailbox before 12:20pm). No late homework sets will be accepted. Homeworks are posted on Blackboard-print them out and please make sure all your answers are worked out on the answer sheets provided. The lowest HW score and the lowest quiz score will be dropped. If you find yourself spending more than 30 minutes on getting started on a single homework problem, *get help*. Help is available via my office hours. You are responsible for knowing the material on the homework. The exams will assume that the HW problems have been worked on, digested and understood.

Exams: Midterm 1: Monday, February 23, 12:30-1:20pm (in class)

Midterm 2: Friday, April 10, 12:30-1:20pm (in class)

Final (Cumulative): Wednesday May 6, 3:30pm to 5:30pm (room TBA)

<u>Grading:</u>	Homework	20 %
	Quizzes	5 %
	1 st midterm	20 %
	2 nd midterm	20 %
	<u>Final (cumulative)</u>	<u>35 %</u>

Math Prerequisites: Math 220 or 221. The prerequisite for that is Math 208-Analytical geometry and calculus III. Why is this important? Because we will use all that you learned in Math 208-read chapter 1 yourself and come to class prepared to use it!

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services,

students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

PHYSICS 451 SPRING 2015 TENTATIVE LECTURE SCHEDULE

DATES	SECTION	TOPICS
01/012-01/16	Chapter 1	Review of Vector Calculus
01/21-01/23	2.1, 2.2	E field, Coulomb's Law and Gauss' Law
01/26-01/30	2.3-2.4	Potential, Poisson's Equation and Laplace's equation, Boundary Conditions, work and energy
02/02-2/06	2.5, 3.1	Conductors in E fields, Laplace's Equation
02/09-02/13	3.2, 3.3	Method of images, separation of variables
02/16-02/18	3.3	Separation of variables
02/20	Chapters 1-3	Review
02/23	MIDTERM 1	CHAPTERS 1-3.3
02/25	3.4	Multipole expansion
02/27	3.4	Multipole expansion
03/02-03/06	4.1, 4.2	Polarization, Electric Displacement D
03/09-03/13	4.3, 4.4	Linear Dielectrics.
03/16-03/20	5.1, 5.2	The Lorentz Force Law, Biot-Savart Law
03/23-03/27	NO CLASSES	SPRING BREAK
03/30-04/03	5.3, 5.4	Div. and Curl of B , Magnetic vector potential.
04/06	6.1	Magnetization, field of a magnetized object
04/08	Chapters 4-6.1	Review
04/10	MIDTERM 2	CHAPTERS 4-6.1
04/13-04/17	6.2, 6.3	H vs B, Linear magnetic media
04/20-04/24	6.4 and 7.1-7.2	Electrodynamics
04/27-05/01	7.2-7.3	Electrodynamics and Review
05/06	FINAL EXAM 3:30pm – 5:30pm	CUMULATIVE

Holidays: Monday Jan-19 (MLK) and March 23-27 (Spring Break).