PHYSICS 302 COURSE SYLLABUS

Course Information

Course Title: Advanced Electromagnetic Theory Spring Semester, 2008

Meeting Time: MWF 10:00-10:50 Meeting Place: 510 RT

Instructor: Brent Hoffmeister
Office: 313 RT
Lab: 310 RT
Office Phone: 843-3913
Office Hours: 1:00-3:00 M-R, other times by appointment

Course Objective

To provide you with a solid formal foundation in electromagnetic theory and a good physical intuition for electromagnetic phenomena.

Text

Robert H. Good, *Classical Electromagnetism*, Saunders College Publishing, ISBN 0-03-022353-9

Course Requirements

1. Three take home tests	60%
2. Homework	40%

Class attendance is required.

Grading Procedures

- All graded work will be assigned a numerical score. You may estimate the corresponding letter grade by computing a percentage score and comparing it with the table below:

  Percentage Score = (Your Score / Total Possible) * 100

Percentage Score	Approximate Letter Grade
90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

- Late homework assignments and tests will be penalized by 10% of the total possible score per day (including weekends and holidays) that they are late.

- The conditions of the Honor Code described in the Rhodes College Student Hand Book apply to all assignments in this course unless specified otherwise by the instructor.

Course Calendar

Date	Subject	Reading	Due
Wed. Jan. 9	Ch. 12: Poisson's Equation	12.1	
Fri. Jan. 11	Ch. 12: Method of Images	12.2	
Mon. Jan. 14	Ch. 12: Solutions of Laplace's Equation	12.3	
Wed. Jan. 16	Ch. 12: Solutions of Laplace's Equation		HW12a
Fri. Jan. 18	Ch. 12: Solutions of Laplace's Equation		
Mon. Jan. 21	(MLK Observance)		
Wed. Jan. 23	(AAPT meeting)		
Fri. Jan. 25	Ch. 12: Solutions of Laplace's Equation		
Mon. Jan. 28	Ch. 13: Transients in RC and RL Circuits	13.1	HW12b
Wed. Jan. 30	Ch. 13: Transients in RLC Circuits		
Fri. Feb. 1	Ch. 13: Complex Notation	13.2-13.3	
Mon. Feb. 4	Ch. 13: AC Circuit Analysis	13.4	
Wed. Feb. 6	Ch. 13: AC Circuit Analysis		HW13a
Fri. Feb. 8	Ch. 13: AC Circuit Analysis		
Mon. Feb. 11	Ch. 13: AC Circuit Mini-Lab		
Wed. Feb. 13	Ch. 13: AC Circuit Mini-Lab		
Fri. Feb. 15	Ch. 14: Poynting Vector	14.1	HW13b
Mon. Feb. 18	Ch. 14: Wave Equation ***Test 1 Delivered***	14.3	
Wed. Feb. 20	Ch. 14: Lorentz Condition		**Test 1**
Fri. Feb. 22	Ch. 14: Retarded Potential Solutions	14.4	
Mon. Feb. 25	Ch. 14: Plane Wave Solutions	14.5	HW14a
Wed. Feb. 27	Ch. 14: Radiation from a Simple Charge	14.6	
Fri. Feb. 29	Ch. 14: Radiation from a Simple Charge		
Mon. Mar. 3	(Spring recess)		
Wed. Mar. 5	(Spring recess)		
Fri. Mar. 7	(Spring recess)		
Mon. Mar. 10	Ch. 15: Electric Dipole Radiation	15.1	HW14b
Wed. Mar. 12	Ch. 15: Electric Dipole Radiation		
Fri. Mar. 14	Ch. 15: Electric Dipole Radiation		
Mon. Mar. 17	Ch. 15: Magnetic Dipole Radiation	15.2	HW15a
Wed. Mar. 19	Ch. 15: Magnetic Dipole Radiation		
Fri. Mar. 21	(Easter recess)		
Mon. Mar. 24	Ch. 15: Antennas	15.3-15.5	
Wed. Mar. 26	Ch. 16: Complex Wave Number *k*	16.1	HW15b
Fri. Mar. 28	Ch. 16: Wave Propagation in Dielectrics ***Test 2 Delivered***	16.2	
Mon. Mar. 31	Ch. 16: Wave Propagation in Dielectrics		**Test 2**
Wed. Apr. 2	Ch. 16: Wave Propagation in Dielectrics		
Fri. Apr. 4	Ch. 16: Wave Propagation in Conductors	16.3	HW16a
Mon. Apr. 7	Ch. 16: Wave Propagation in Conductors		
Wed. Apr. 9	Ch. 16: Wave Propagation in Plasmas	16.4	
Fri. Apr. 11	Ch. 18: Lorentz Transformation	18.1-18.4	HW16b
Mon. Apr. 14	Ch. 18: Relativistic Mechanics	18.5	
Wed. Apr. 16	Ch. 18: Radiation from a Simple Charge	18.6	
Fri. Apr. 18	Ch. 18: Field Transformations	18.7	HW18a
Mon. Apr. 21	Ch. 18: Field Transformations		
Wed. Apr. 23	Ch. 18: Electromagnetic Field Tensor	18.8	
Fri. Apr. 25	(Awards Convocation and URCAS)		HW18b
Mon. Apr. 28	***Test 3 Delivered***		
Wed. Apr. 30			**Test 3**