Syllabus for PHY481, Fall 2006

Lecturer: Prof. Carl Bromberg; E-mail: bromberg@pa.msu.edu; Office: Rm. 3225 BPS; Phone:5-9200 Ext. 2122; Office hrs : Mon. & Wed. 4:00-6:00, or by appointment.

Grader: Weigang Geng; E-mail: gengweig@msu.edu; Office:1300 BPS, Phone: 59200 x 2080. See Weigang for grading issues. If not satisfied, see Prof. Bromberg in office hours.

IF you have not completed a 2-Semester introductory course in Calculus-based Physics (preferably an honors course), see me during office hours.

Lectures:

- Mon. & Wed., **Note: 12:30 - 1:40 pm**, in room 1420 BPS (see Course Schedule).
- Textbooks:
- 1)"Electromagnetism", Pollack and Stump, ISBN 0-8053-8567-3, Addison-Wesley
  2) An Introductory text: Fishbane et al., "Physics for Scientists and Engineers", or 2nd Ed, Halliday et al., "Physics", 5th Ed., or similar texts.

Course Topics:

- Course covers the topics shown in the **Course Schedule** (on the next page).
- Lectures may not cover all topics presented in the **Reading Assignments**. All topics, in the assigned reading or presented in lecture may appear on an exam.
- Lectures on Mon. and Wed. will be posted on the Course Web site by Fri of that week.

Homework (HW) and Exams:

- There will be 8 homework assignments with due dates as indicated in the **Course Schedule**. Homework handed in late will not be graded, but will be logged. All missing homework assignments must be submitted by the last class on 6 - Dec., or you risk an incomplete (I) grade for the course.
- Two, **60 minute exams** will be given **FRIDAY** on the dates indicated in the Course Schedule, and a **2 hr Final Exam** on **12-Dec.** covering the work of the entire semester. Only simple calculators allowed, no formula or graphing capability
- Documented medical (or other) excuses for **one** exam will be considered on a case by case basis. Resolution may involve an oral exam.

Grades

- HW (1 point/problem ~50 total points), 2 exams (100 points each), Final Exam (200 points). Straight scale, with >360 points receiving a 4.0 with cuts 30 points lower for each 0.5 in grade.
- Frequently check the **WEB** site, **http://www.pa.msu.edu/courses/PHY481**, for announcements, lecture slides, HW and exam solutions, scores and grades.

Miscellaneous

- No HEAD-phones, IPODs, CD-players, CELL-phones, or HATs in class.

PHY481 Schedule
Fall 2006

W	D	Date	L	Subjects	P&S	HW	HW Due
1	M	28-Aug	1	Intro E&M - review(1)		HW1:Show derivations of E & V	
	W	30-Aug	2	Intro E&M - review(2)		for the 8 charge distributions in	
2	M	4-Sep		**Labor Day - no classes**		the Table on the class web site	
	W	6-Sep	3	Vector tools	2		1
3	M	11-Sep	4	Integral Theorems			
	W	13-Sep	5	Curvilinear coordinates			
4	M	18-Sep	6	Coulomb's law & electric fields (E)	3		
	W	20-Sep	7	HW-2 solutions, etc.		Ch.2 2-3,6,8-10,12-14,19,22,24,27	2
5	M	25-Sep	8	Curl and divergence of E			
	W	27-Sep	9	Gauss's Law			
6	M	2-Oct	10	HW-3a solutions, etc.		Ch.3 3,5-8,10,15-16,19,24,40,42	3a
	W	4-Oct	11	Electric potential & energy			
7	M	9-Oct	12	Dipole and multipoles			
	W	11-Oct	13	HW-3b solutions, etc.		Ch.3 22-23,25-26,30,32,33	3b
	F	**13-Oct**		**60-min. Exam (Lectures 1-13)**			
8	M	16-Oct	14	Exam 1 solutions, etc.	4		
	W	18-Oct	15	Parallel plate capacitor			
9	M	23-Oct	16	Potentials by method of images			
	W	25-Oct	17	Potentials for spheres and cylinders			
10	M	30-Oct	18	HW-4 solutions, etc.	5	Ch. 4 3-4,6-7,10a,14-16,18,20,22	4
	W	1-Nov	19	Solving Laplace's equation			
11	M	6-Nov	20	Potentials with polar angle dependence			
	W	8-Nov	21	HW-5 sol.utions, etc.		Ch. 5 3,7,11,13,15-16,28,32	5
	F	**10-Nov**		**60-min. Exam (Lectures 1-21)**			
12	M	13-Nov	22	Exam 2 solutions, etc.	7		
	W	15-Nov	23	Electric Currents			
13	M	20-Nov	24	Resistance			
	W	22-Nov	25	HW-7 solutions, etc.	8	Ch. 7 2-3,5,7,9,11,15,18	7
14	M	27-Nov	26	Biot-Savart Law			
	W	29-Nov	27	Ampere's Law			
15	M	4-Dec	28	Vector potential & magnetic dipole			
	W	6-Dec	29	HW-8 solutions, etc.		Ch. 8 4,10,14,18,22,34,37	8
	T	**12-Dec**		**Final Exam 12:45 - 2:45**			