PHYS722 COURSE SYLLABUS

Spring, 2015

INSTRUCTOR: Dr. Muruges Duraisamy

OFFICE:	Lewis 226
OFFICE HOURS:	3.00-4.00pm Mon & Friday(by appointment)
OFFICE PHONE:	915-5622
E-MAIL ADDRESS:	duraism@phy.olemiss.edu

COURSE PAGE:	http://www.phy.olemiss.edu/~duraism/phys722.html
CLASS HOURS:	9:30-10:45 am (Tues, Thurs) Lewis Room 228

Course Description:

This course is the second part of a two- course sequence on advanced electromagnetic theory. We will cover selected topics in CH6 (Maxwell Equations), CH7 (Plane Electromagnetic waves and Wave Propagation), CH 8 (Waveguides, Resonant Cavities), CH9 (Radiating System), CH10 (Scattering), CH 11 (Special Theory of Relativity), CH 12 (Dynamics of Relativistic Particles), CH14 (Radiation by Moving Charges).

Textbook:

Classical Electrodynamics (3rd Edition) by J.D. Jackson

Suggested references:

Classical Electricity and Magnetism:(2nd Edition) by Wolfgang K. H. Panofsky (2005)

Classical Electrodynamics by Walter Greiner (1998)

Introduction to Electrodynamics (3rd Edition) by David J. Griffiths (1999)

Mathematical Methods For Physics by H. W. Wyld (1999)

Mathematical Methods for Physicists (7th Edition) by George B. Arfken (2012)

Homework

The weekly homework assignments are due on Mondays. Late submissions are not accepted. Homework solutions that have been copied from online sources are easily detectable and strictly forbidden. The offence will result in zero credit for that homework.

Mid-Term Exams
Two mid-term exams will be conducting lecture hours as specified in the syllabus. All exams are closed book . There will be no make-up exams.

Final Exam

The final exam is scheduled for Tuesday, May 7th, 8:00a.m-11:00a.m. Attendance is compulsory.

Grading Plan:

Coursework will be weighted as follows:

Weekly Homework (10 Sets)	30%
Exam 1	20 %
Exam 2	20 %
Final Exam	30%

Grading Type:

The numerical grade (out of 100) will be converted to a letter grade according to the UM +/-grading system found at http://www.olemiss.edu/info/grading.html

Grades	Numerical points	GPA
A	> (or =) 88	4.0
A-	[85,87]	3.7
B+	[81,84]	3.3
B	[78,80]	3.0
B-	[72,77]	2.7
C+	[68,71]	2.3
C	[64,67]	2.0
C-	[60,63]	1.7
D	[56,59]	1
F	< 55	0

TENTATIVE CLASS SCHEDULE: This is a tentative syllabus and a slight adjustments might be made.

Week	Date	Day	Chapter/Topic	Reading Assignment
1	Jan 22	TH	L1: Maxwell Eq,Vector,Scalar Pot	6.1-6.3
2	Jan 27	T	L2: Green fun /Wave Euation	6.4-6.5
	Jan 29	TH	L3: Poyntin's Theorem	6.7 and 6.8
3	Feb 03	T	L4: Plane EM wave and Wave Prop	7.1-7.2
	Feb 05	TH	L5: Refelction and Refraction	7.3-7.4
4	Feb 10	T	L6: Frequency Dispersion, Group vel	7.5, 7.8, 7.10
	Feb 12	TH	L7: Cylindrical Cavities	8.1-8.2
5	Feb 17	T	MidTerm-EXAM 1	
	Feb 19	TH	L8: Waveguides	8.3
6	Feb 24	T	L9: Regtangular Waveguides	8.4-8.5
	Feb 26	TH	L10: Resonant Cavities	8.7 -8.8
7	Mar 03	T	L11: Radiating Systerms	9.1-9.2
	Mar 05	TH	L12: Magnetic Dipole	9.3-9.4
8	Mar 10	T	SPRING BREAK	
	Mar 12	TH	SPRING BREAK	
9	Mar 17	T	L13: Scattering at Long Wavelengths	10.1
	Mar 19	TH	L14: Perturbation Theory- Scattering	10.2
10	Mar 24	T	L15: Special relativity	11.1-11.5
	Mar 26	TH	L16: Special relativity	11.6-11.7
11	Mar 31	T	Mid-Term Exam II	
	Apr 02	TH	L17: Invariance Of Elec Charge	11.9
12	Apr 07	T	L18: Transformation of EM fields	11.10
	Apr 09	TH	L19: Covariant Eq	11.11
13	Apr 14	T	L20: Dynamics of Relativistic Particles	12.1
	Apr 16	TH	L21: Dynamics of Relativistic Particles	12.2-12.3
14	Apr 21	T	L22: Lagrangian -EM field	12.7-12.8
	Apr 23	TH	L23:Cannonical and Symmetric tensors	12.10
15	Apr 28	T	L24: Radition by Moving Charges	14.1
	Apr 30	TH	L25: Radition by Moving Charges	14.2-14.3
16	May 07	TH	FINAL EXAM :8.00am-11.00am	

Academic Integrity Statement:

As an Olemiss student I have abided by the UM academic integrity policy as described in Policy Code ACA.AR.600.001 https://secure4.olemiss.edu/umpolicyopen/ShowDetails.jsp?istatPara=1&policyObjidPara=10817696 and http://conflictresolution.olemiss.edu/m-book/

Attendance Policy:

All students are required to be present for all class meetings.

Students With Disabilities:

If you have a disability requiring an accommodation, please contact the Office of Student Disability Services (SDS) at 234 Martindale Center (sds@olemiss.edu) phone: 662-915-7128