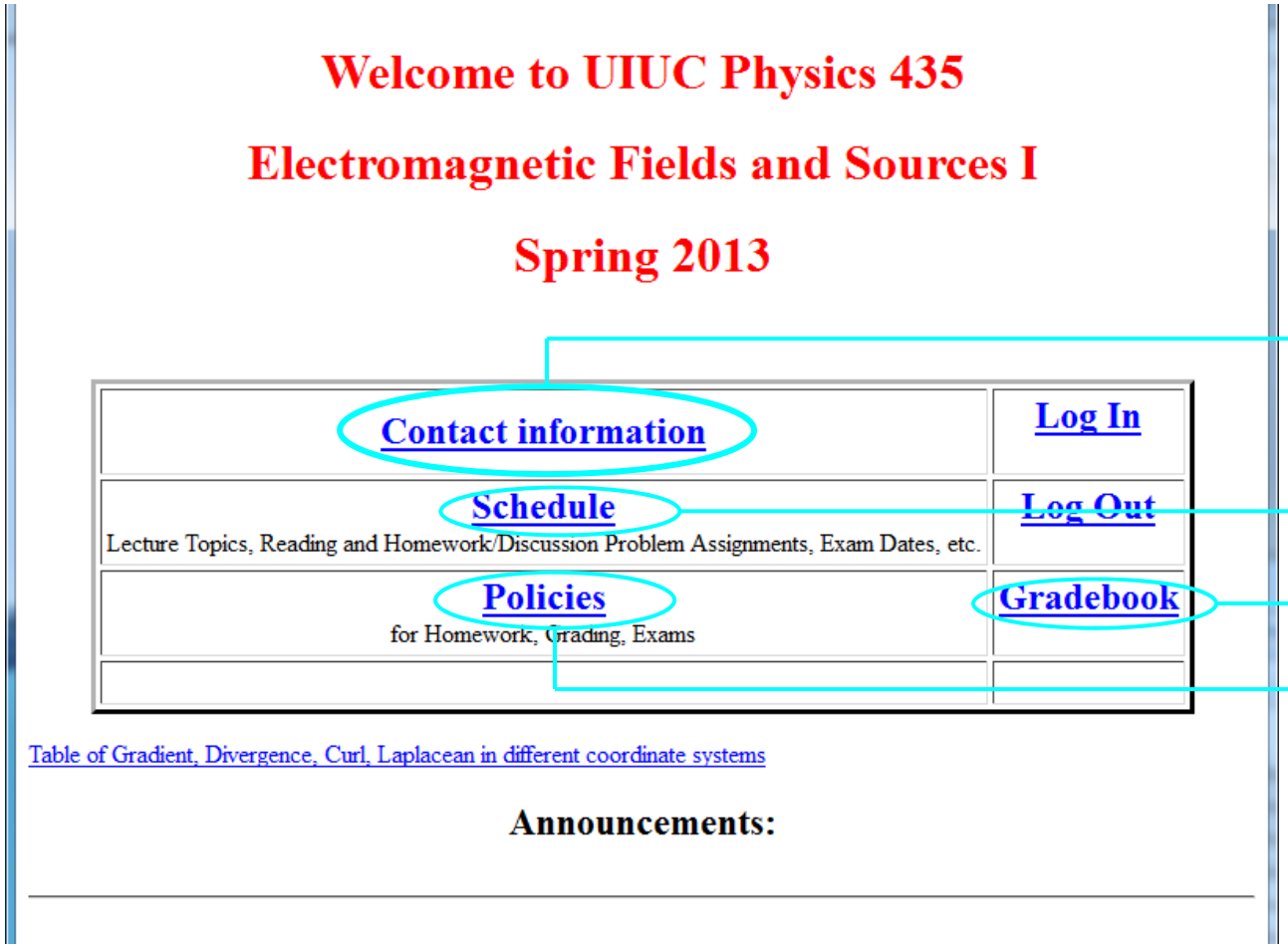
Our homepage

http://courses.physics.illinois.edu/phys435/sp2013/



Email handles

Course materials and due dates

Check grades

Grading policy

Our text is D. J. Griffiths, Introduction to Electrodynamics (3rd edition)
Most students buy my lecture notes at T.I.S. 707 S. 6th Street Champaign

Click on Schedule

Mo	Tu	We	Th	Fr	Sa	Su	
1/14/2013	1/15/2013	1/16/2013	1/17/2013	1/18/2013	1/19/2013	1/20/2013	
1		2	readings	3			welcome
GL-1		GL-2	skim chp 1	GL-3			
Intro		E-field	2.2	Gauss Law			
R Ch1		R2.1					
Mo	**Tu**	**We**	**Th**	**Fr**	**Sa**	**Su**	
1/21/2013	1/22/2013	1/23/2013	1/24/2013	1/25/2013	1/26/2013	1/27/2013	
MLK Holiday		4	readings	5			
		GL-4	2.2, ~~2.2.4~~	GL-5			
		Divergence		Divergence			solutions
			OH	HW1 due GL1			
Mo	**Tu**	**We**	**Th**	**Fr**	**Sa**	**Su**	
1/28/2013	1/29/2013	1/30/2013	1/31/2013	2/1/2013	2/2/2013	2/3/2013	
6		7	readings	8			
Pot-1		Pot-2	2.2.4	Pot-3			
~~gradient~~		work&energy		Stokes 1			
D1			OH	HW2 due GL2			solutions
Mo	**Tu**	**We**	**Th**	**Fr**	**Sa**	**Su**	
2/4/2013	2/5/2013	2/6/2013	2/7/2013	2/8/2013	2/9/2013	2/10/2013	
9		10	readings	11			
Pot-4		Pot-5	2.3	Pot-6			
Stokes 2		E-field energy		E-field energy			
D2			OH	HW3 due Pot1			solutions
Mo	**Tu**	**We**	**Th**	**Fr**	**Sa**	**Su**	
2/11/2013	2/12/2013	2/13/2013	2/14/2013	2/15/2013	2/16/2013	2/17/2013	
12		13	readings	14			
Lap-1		Lap-2	2.5 , 3.1	Lap-3			
conductors		pressure		uniqueness thm			
D3			OH	HW4 due Pot2			solutions
Mo	**Tu**	**We**	**Th**	**Fr**	**Sa**	**Su**	
2/18/2013	2/19/2013	2/20/2013	2/21/2013	2/22/2013	2/23/2013	2/24/2013	
15		16	readings	17			
Lap-4		Lap-5	3.2,3.3				
method of images		Sep Var 1	exam OH	Exam 1 GL,Pot			exam-prob.
D4 Exam Quest							

Link to lecture notes

These slides

Office hours for HW help

HW due Fri < 5pm in HW box
1st HW due 1/25

Weekly disc prob

Solutions posted after all deadlines.

1st midterm in class on 2/22

Physics 435 : Grading (under policy)

11 Home Work: 30%

Discussion Section: 5% attendance

3 Midterms : 30%

Final: 35%

I have heavily weighted the homework since it's the only way of learning E&M at this level.

Jim Wiss Office Hours Thursdays and Tuesdays 6:30pm to 8:00 pm. Times posted in Schedule. Room to be announced by email. (jew@illinois.edu)

Mid Terms (in class):

Fri Feb. 22
Fri Mar. 15
Fri Apr. 26

Home Work due Friday in HW box

Friday < 5pm => 100% credit
Monday < 5pm => 90% credit
Thursday < 11 pm => 70% credit

I hope lecture notes will be available at

T.I.S Bookstore
707 S. 6th St.
Champaign

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Welcome to Physics 435!

You saw 3 of 4 Maxwell Eqn in Physics 212

Gauss's Law : $\varepsilon_0 \int \vec{E} \cdot d\vec{a} = Q_{encl}$

Faraday's Law: $\varepsilon = \oint \vec{E} \bullet d\vec{\ell} = \frac{d}{dt} \int \vec{B} \cdot d\vec{a}$

Ampere-Maxwell $\oint \vec{B} \cdot d\vec{l} = \mu_0 \left(I + \varepsilon_0 \frac{d}{dt} \left[\int \vec{E} \cdot d\vec{a} \right] \right)$

So why study E&M further?

Great applications of crucial mathematics:

a) Vector Calculus
b) Orthogonal functions
c) Curvilinear coordinate systems

Physics beyond Phys 212

a) Differential form of Maxwell Eq,
b) E&M in materials : Bound charge & currents
c) Vector Potentials in Mech and Quant Mech
d) Wave guides
e) Radiation theory
f) Relativistic transformations of E&M fields

E&M is the most practical branch of classical physics

It is correct as originally written by Maxwell in 1864:

a) Relativistically
b) Quantum mechanically

E&M forms theoretical template for the successful gauge theory strong & weak interactions or the Standard Model.

Maxwell-centric history of the world