PHYS 3122 (Electro & Magnetostatics) SYLLABUS

Textbook: *David J. Griffiths, Introduction to Electrodynamics, Fourth Edition*
Chapter 1-7
Vector Analysis (briefly): Integral calculus, curvilinear coordinates, Delta function
Electrostatics: Electric field, electric potential, work and energy
Potentials: Laplace's equation, method of images, multipole expansion
Electric Fields in Matter: Polarization, dielectrics, capacitors
Magnetostatics: Magnetic field, magnetic force, vector potential
Magnetic Field in Matter: Magnetization, magnetic susceptibility, ferromagnetism
Electrodynamics: Maxwell's equations

Place and Times: L5, Howey Physics Building; M,W,F 11:05-11:55
Instructor: Zhigang Jiang, email: zhigang.jiang(at)physics.gatech.edu
Instructor office hours: Friday 2:00-4:00 pm in B-18, Boggs Building
TA: James Waters, email: jwaters6(at)gatech.edu
TA office hours: Thursday 2:00-5:00 pm in B-85, Boggs Building
Homework: To be assigned on Wednesday in class; due on the following Thursday in office hours or in the academic office (W111, Howey Building). There will be about $n \approx 9$ homework assignments. No late homework will be accepted without advance notice. You can discuss homework problems with each other, but the solutions have to be executed and submitted individually. All students are expected to comply with the *academic honor code*.
Grading: Homework ($n-1$ of n best scores) 40%; Quizzes (3 of 4 best scores) 30%; Final 30%
Tentative schedule (Fall, 2014):

8/18 L#1	8/20 L#2	8/22 L#3
8/25 L#4	8/27 L#5	8/29 L#6
9/1 Holiday	9/3 L#7	9/5 L#8
9/8 L#9	9/10 Quiz #1	9/12 L#10
9/15 L#11	9/17 L#12	9/19 L#13
9/22 L#14	9/24 L#15	9/26 L#16
9/29 L#17	10/1 L#18	10/3 Quiz #2
10/6 L#19	10/8 L#20	10/10 L#21
10/13 Student Recess	10/15 L#22	10/17 L#23
10/20 L#24	10/22 L#25	10/24 L#26
10/27 L#27	10/29 Quiz #3	10/31 L#28
11/3 L#29	11/5 L#30	11/7 L#31
11/10 L#32	11/12 L#33	11/14 L#34
11/17 L#35	11/19 L#36	11/21 Quiz #4
11/24 L#37	11/26 (no lecture)	11/28 Holiday
12/1 L#38	12/3 L#39 (Review)	12/5 (no lecture)
12/8 Final Exam (8:00am-10:50am)		