Boğaziçi University
Department of Physics

Phys 380 Spring 2010

Introduction to Electromagnetic Radiation

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Office hours: Tuesday 13:00-14:00 or by appointment. Feel free to stop by my office at other times. I will answer your questions if I am available.

Course assistant: Erol Ertan – ertan.erol@gmail.com

Course schedule: Lecture: TTThTh (13:00-14:50) NH 302 NH 302 KB 125 KB 125

Course page: "http://alum.mit.edu/www/akdogan". Problem sets and general course information can be found here.

About the course: Review of Maxwells equations, and derivation of their differential form. Importance of continuity equation and displacement current. Derivation of EM wave equation in vacuum, simple solutions and their basic properties, including Poyntings vector etc. Interaction f radiation with matter, physical basis of the index of refraction. Boundary conditions and simple discussion of reflection and refraction of EM waves from conductors and insulators.

Prerequisites: PHYS 202

Required text: *Introduction to Electrodynamics*, 3rd Edition, by David J. Griffiths (Pearson, 2008).

Attendance: I expect you to come to class regularly and on time. You should be prepared to discuss the textbook material and to have worked on the assigned homework problems. I reserve the right to adjust your final course score up or down by a grade step based on the quality and extent of your contributions.

Homework: This will be a significant part of the learning process for this class. There will be total of 12 problem sets with equal weights. They will be handed out every week, and will be due on the next week. Please staple the pages securely and leave them on my desk when you **enter** the classroom (i.e., do not work on the problem set during the class). Late homework will not be accepted. On special occasions, we may postpone the due date the whole class.

I encourage you to work collaboratively on the problems but you should understand that when you write up solutions the work is to be your own (i.e., do not just copy someone's solution). Do not be shy about coming to me or course assistants for help with the homework.

Exams: There will be two midterms and a final examination. Exams will be closed book/closed notes. Calculators are neither needed nor allowed. You may use a cheat-sheet of size A4. Rules for the cheat-sheet will be announced before the exam.

Grading: The weights that will determine the cumulative grade are as follows:

	Contribution
Homework	20%
Exam I	20%
Exam II	20%
Final	40%

The final (letter) grades will be determined according to the distribution of cumulative grades and the classroom contributions.