E&M 6120  
Spring 2010

Book: Classical Electrodynamics by Jackson

Tests:

Test #1  2 problems in class – Closed Book  
Test #2  2 problems in class – Closed Book  
Final   4 problems on all material – Closed Book

Homework: Assigned but not graded.

Topics:

Maxwell Equations  
Wave Equations for E and H  
Poynting Vector  
Boundary Conditions  
Laws of Reflection  
Fresnel Equations for Dielectrics  
Waves in Conductor  
Waves Incident on Conductor  
Poynting Vector in Conductor  
Momentum and Stress  
Waveguides (TEM, TE, TM)  
Waves in Plasma  
$\nabla^2\Phi$ Separation of Variables  
Green Theorem  
Green Function Solution  
Green Function in Spherical Coordinates  
Green Function Problem  
Electric Dipole (Static)  
Vector Potential $\mathbf{A}$  
Current Loop (Static)  
$\Phi$ and $\mathbf{A}$ for Wave Equations  
Time-Dependent Green Function  
Summary  
Oscillating Electric Dipole  
Oscillating Magnetic Dipole

IN COOPERATION WITH THE DISABILITY RESOURCE CENTER, REASONABLE ACCOMMODATION WILL BE PROVIDED FOR STUDENTS WITH DISABILITIES. PLEASE MEET WITH ME DURING THE FIRST WEEK OF CLASS TO MAKE ARRANGEMENTS. ALTERNATIVE FORMAT MATERIALS—LARGE PRINT, AUDIO, DISKETTE, OR BRAILLE—WILL BE AVAILABLE THROUGH THE DISABILITY RESOURCE CENTER.