

# Advanced Electromagnetic Theory

## PHYS 5333, Fall 2009

Due Date: Noon- Feb. 2

### Problem Set # 1

Submit only **Bold and underlined** problems.

Jackson: 5.3 (similar to Griffiths 5.11), 5.4, 5.6, **5.11**, **5.17**, **5.19**, **5.22**

**(2)** Based on Jackson 5.18 c: Find the force on magnetic a dipole  $m_0$  placed at a distance  $d$  in front of a semi-infinite medium of magnetic permeability  $\mu$ , when (a) the magnetic moment points directly towards the interface, (b) the magnetic moment is parallel to the interface.

Griffiths: 5.4, 5.6, 5.8, 5.10, 5.12, 5.14, 5.15, 5.17, 5.35, 5.37, 5.56, 6.1, 6.10, 6.12, 6.13, 6.15, (bonus **6.25**)