

## ECE 4990/6990

### Antennas

#### Quiz #2

- I. Determination of Antenna Radiation Fields Using Potentials
  - A. Maxwell's equations
  - B. Far field approximations
  - C. Coordinate systems
  - D. Duality
  
- II. Wire Antennas
  - A. Infinitesimal dipole
    - 1. Near field
    - 2. Radiating near field
    - 3. Far field
    - 4. Far field of an arbitrarily oriented infinitesimal dipole
    - 5. Performance parameters (radiation resistance, directivity, beam solid angle, effective aperture)
  - B. Poynting's theorem
  - C. Short dipole
    - 1. Fields
    - 2. Performance parameters
  - D. Center-fed dipole
    - 1. Fields
    - 2. Performance parameters
    - 3. Input impedance
    - 4. Half-wave dipole
  - E. Antennas and scatterers
  - F. Image theory
    - 1. Infinitesimal dipole over ground
    - 2. Monopole
  - G. Ground effects