IV. Guided Waves
- Kinetic boundary conditions and k-values
- Dynamic boundary conditions and dispersion relationship
- Wave impedance and Poynting vector
- Fields generated by a localized source
- Reading: Chapter 8.2-8.5, 8.11-8.12

V. Dielectric, Corrugated Conductor and Plasmon Waveguides
- k-vectors, dispersion relations, modes, orthogonality
- Coupling coefficient between modes
- Periodic coupling and k-vectors
- Coupled mode theory and solutions
- Applications of the coupled mode solution
- Reading: Kogelnik 2.2, 2.6, Harrington 4.8
- No: Theory Small Reflections, Signal Flow Graph Theory

VI. Radiation and Scattering
- Near fields from a localized current and charge source
- Radiation from a localized current source
- Antenna pattern as product of FT element pattern and FT array factor
- Scattering at long wavelength limit (small dielectric and p.e.c. spheres)
- Kirchhoff scalar diffraction
- Scattering at short wavelength limit (large objects)
- Spherical harmonic expansion
- Vector integral representation
- Images as sum of plane waves from periodic masks
- Standing waves in material layers
- Reading: 9.1-9.4A, 10.1, 10.5, 10.9-10.10
- Lite: 9.6-9.7, 9.12, 10.3-10.4, 10.6, 10.7-10.8, 10.11
- Skip (or read for your own interest 9.5, 10.2)