

# **SYLLABUS FOR EC560**

## **FALL 2009**

1. **RAY OPTICS:** Postulates, Simple Optical Components, Graded-Index Optics, Matrix Optics
2. **WAVE OPTICS:** Postulates, Monochromatic Waves, Simple Optical Components, Interference
3. **FOURIER OPTICS:** Propagation of Light in Free Space, Optical Fourier Transform, Diffraction, Image Formation, Holography
4. **ELECTROMAGNETIC OPTICS:** Maxwell's Equations, Electromagnetic Waves in Dielectric Media, Monochromatic Electromagnetic Waves, Elementary Electromagnetic Waves, Absorption and Dispersion, Pulse Propagation in Dispersive Media
5. **POLARIZATION OPTICS:** Polarization of Light, Reflection and Refraction, Polarization Devices
6. **GUIDED-WAVE OPTICS:** Planar-Mirror Waveguides, Planar Dielectric Waveguides, Two-Dimensional Waveguides, Optical Coupling in Waveguides
7. **FIBER OPTICS:** Guided Rays, Guided Waves, Attenuation and Dispersion