

PHYSICS 223
PHYSICAL OPTICS
(3.0 ; 3 credits)

Textbook: Optics

By: Hecht & Zajac
(Addison Wesley)

Contents:

1. The wave theory of light

Maxwell's equations, complex representation, phase and group velocity, coherence, superposition and polarization.

2. Interference

Wave splitting, interference fringes, dielectric films, multiple -beam interference, Fabry-Perot interferometer.

3. Diffraction

Kirchhoff's diffraction formula, Fresnel and Fraunhofer patterns for a single and double slit, Babinet's principle, diffraction gratings.

4. Coherence

Coherence function and degree of coherence, stellar interferometry, Imagery, lasers and holography.

Fall 2000