

Physics 325

Tentative Syllabus (subject to variation)

Reflection and refraction at a plane surface. The Fresnel equations.

Formation of images by lenses and mirrors, including thick lens theory and aberrations.

Optical instruments.

Theory of photometry.

Review of waves, with attention to Fourier synthesis and analysis, and Fourier transforms.

Interference.

by division of wavefront

by division of amplitude

Importance of coherence

Diffraction grating

Fraunhofer and Fresnel diffraction. The Cornu spiral.

Polarization, dichroism and optical activity.

Lasers (if time permits)