

# PHYSICAL OPTICS

Physics 326/426

Spring 2003

Instructor: K. Singer, 225D Rockefeller, 368-4017, kds4@po.cwru.edu

Office Hours: MWF 10:30-11:30 pm or drop in or call

Textbook: *Introduction to Optics*, 2<sup>nd</sup> Edition, F.L. Pedrotti and L.S. Pedrotti

## Supplements:

*Optics*, Miles V. Klein and Thomas Furtak

*Optics*, 3<sup>rd</sup> Edition, E. Hecht

## Course Outline

<i>Week</i>	<i>Reading</i>	<i>Subject</i>
1	1,2	Nature, Sources, Detection of Light
2	3,4	Geometrical Optics, Matrix Methods
3	4,6	Matrix Methods, Optical Instrumentation
4	8	Wave equations, Maxwell's Equations
5	20,27	Dispersion, Fresnel Equations
6	14	Polarization: Matrix Treatment, Retardation
7	15	Polarization Devices
8	9,10	Superposition, Interference
9	11,16-6,17	Interferometers, Multiple Beam Interference
10	12	Coherence
11	16	Fraunhofer Diffraction
12	18	Fresnel Diffraction
13	25	Fourier Optics
14	13,21,26	Holography, Lasers, Nonlinear Optics

*Course Requirements:* Weekly homework 20%, two midterm exams 40%, final exam 40%. Homework assignments will normally be due every Monday.

Course information including homework assignments, homework solutions, exam solutions, etc. can be obtained at <http://www.phys.cwru.edu/courses/p326>