Ataur R. Chowdhury

REIC 118

MWF 3:30-5:00 PM

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PHYS 213X; PHYS 301; or permission of instructor

by Eugene Hecht, 5th Edition, Addison Wesley.

1. by R. Guenther, Wiley.
2. Statistical Optics by J. Goodman, Wiley.

To acquire a basic understanding of the fundamentals of geometrical and physical optics.

1. Students should be able to understand the logistics of geometrical and physical optics.
2. Students should be able to set up equations for relevant optical phenomena and be able to solve for relevant quantities of interest.
3. Students should be able to simulate approximate optical properties where analytical solutions are not possible.
4. Students should understand the fundamentals of most geometrical and physical ml propert] Øb l' til t}mpta є -m Ę ȯ# Mɔm

Class Attednence/Participation:

For a better understanding of the course material attendance and participation in classroom activities are very important. This particular course is generally regarded as one of the founding courses that deal with the fundamentals of classical physics, and it is highly expected that the students will commit themselves to attend the class regularly. There will be supplemental materials for this course and the students will be held responsible for all the materials that will be brought in from outside the text. The students will be expected to participate in class activities, and take part in meaningful discussion and ask questions to better comprehend the subject material.

Homework:

turned in late will get deducted 20% for each week after the date it is due. A PASSING GRADE IN THE LAB IS REQUIRED TO PASS THE COURSE. A list of the labs, lab handout, and the lab policy will be provided in class and will be posted on the canvas.

UAF does not have yet a central university policy φJτnlDTτmfM

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Tentative Schedule

Lecture, Reading, and Exam

Date	Topics	Reading Assignment

17	retarders and circular polarizers	8.7-8.8
19	mathematical description of polarization	8.13
21	mathematical description of polarization cont'd	8.13
24	interference of light	9.1-9.2
26	wavefront-splitting spectrometer	9.3
28	amplitude-splitting spectrometers	9.4
31	multiple-beam interferometers	9.6
Apr. 2	applications of interferometry	9.8
4	diffraction of light	10.1
7		
9	Fraunhofer diffraction	10.2
11	Fraunhofer diffraction continued	10.2
14	Fresnel diffraction	10.3
16	Fresnel diffraction continued	10.3
18	Fourier optics, introduction	11.1
21	Fourier transforms	11.2
23	optical applications	11.3
25	coherence theory, introduction	12.1
28	fringes and coherence	12.2
30	visibility	12.3

May 2 10:45 AM-12:45 PM, Friday, REIC 207