

**University of Alaska Fairbanks**

**Spring 2022**

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# **Physics 462**

**Geometrical and Physical Optics – 4 Credits**

Instructor – Dr. Mark Conde

<http://www.northropgrumman.com/wp-content/upl>



## Approximate schedule

<i>Week</i>	<i>Dates</i>	<i>Class Topics</i>	<i>Lab Sessions</i>
1	Jan 10 - Jan 14	Class introduction Hecht. chapter 2	
2	Jan 17 - Jan 21	Hecht chapters 3,4	
3	Jan 24 - Jan 28	Hecht chapter 4	Lab 1
4	Jan 31 - Feb 04	Hecht chapter	Lab 2
	Feb 07 - Feb 11	Hecht chapter	Lab 3
6	Feb 14 - Feb 18	Exam 1 (Wed). Hecht chapter 6	Lab 4
7	Feb 21 - Feb 2	Hecht chapter 6	Lab
8	Feb 28 - Mar 04	Hecht chapter 8	Lab 6
9	Mar 07 - Mar 11	Spring Break	
10	Mar 14 - Mar 18	Hecht chapter 8,7	Lab 7
11	Mar 21 - Mar 2	Hecht chapter 9	Lab 8
12	Mar 28 - Apr 01	Exam 2 (Wed). Hecht Chapter 9	Lab 9
13	Apr 04 - Apr 08	Hecht chapter 10	Lab 10
14	Apr 11 - Apr 1	Hecht chapter 10	Lab 11
1	Apr 18 - Apr 22	Hecht chapter 11,12	
16	Apr 2 - Apr 29	Finals week	
17	Ma 02 - Ma 06	Grades posted	

## **Course components and instructional methods**

**Course materials** [4 u t o r t](#) [a n r e y a n r 0](#) [r o / : a / a b](#) [a n 4 0 l a](#)



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## Exams

There will be two one-hour exams during the semester and one two-hour final. The preliminar dates for these exams are

- Exam 1: Wednesday February 16, 11:4 am
- Exam 2: Wednesday March 30, 11:4 pm
- Final: 10:1 a.m. - 12:1 p.m., Friday, April 29

Complex formulae and physical constants will be provided for exam problems that require them. Exams will be conducted using Gradescope. I will upload the exam papers to Gradescope, and set it to make the papers available at the start of the scheduled exam time. Above, I have deliberately only listed the exam start times. This is because I will in each case set Gradescope so that it will accept our responses until 1 pm on the day of the exam. Of course, this gives you more than the usual amount of time to complete the exam. However, my main reason for the extended time period is to ensure that you have enough time to upload our responses, in case of technical issues. (Email me if you still have problems stopping you from submitting on time.)

## Course policies

### Grading

The course grade will consist of the following components

Two one-hour midterm exams	20% (10% each exam)
One two-hour final exam	1 %
Homework	3 %
Lab	30%

I will post all grades online, using the UAF's "Blackboard" system (<https://classes.alaska.edu/>). All registered students have access to this system for checking their grades.

Final grades will be returned as letter grades with plus/minus modifiers. These will be

In contrast, you can make up for an occasional missed lecture by reading the textbook. Nevertheless, UAF policies<sup>3</sup> include statements that:

“ you must begin attending classes on the first day of instruction or you may lose your place, regardless of whether or not you have paid tuition and fees”r

## Course requirements and materials

### Prerequisites

Prerequisites:

1. Undergraduate - UAF level PHYS F213X Minimum Grade of C-
2. Undergraduate - UAF level PHYS F301 Minimum Grade of C-

or permission of instructor.

### Required text

*Optics*, 3<sup>rd</sup>, 4<sup>th</sup> or 5<sup>th</sup> editions, by Eugene Hecht. (Addison Wesley)

Note that I personally will be using the 4<sup>th</sup> edition of Hecht. It is ok to use the 3<sup>rd</sup> or 5<sup>th</sup> editions, but please let me know so I can check if there are any critical references to pages/chapter sections etc that are different.

There are no other supplemental texts assigned, although there are plenty of other good optics textbooks if you find you need additional explanations.

### Technology Requirements

Course materials will be delivered via Blackboard, which means students will require easy web-browser access to the internet. Most material will be delivered in PDF format, so that students will need access to Adobe Acrobat Reader or other third-party equivalent software.

Calculators will be permitted (and required) during exams. There will be no need for anything elaborate.





please refer to the Student Handbook. In cases where you do not have access to your devices, as your instructor, I will take responsibility to relay an emergency notification.

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