

## 2024 Spring Semester 光學二 Optics II

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**Time:** Tuesday and Thursday 10:10-11:30 in [Room xxx](#)

**Textbook:** "Optics" by Eugene Hecht, 5<sup>th</sup> Ed (Pearson global edition)

"Quantum Optics" by Mark Fox (Oxford University Press)

\*Background knowledge of electromagnetism is strongly recommended but not required.

**Grades:** Exams 30 % × 2, homework 40 %.

**Homework:** There will be a homework assignment in approximately every two weeks.

Schedule (subject to change):

Week	Date (Tue. Thu.)	Covered materials
1	2/20, 2/22	Introduction, Diffraction basics
2	2/27, 2/29	Fraunhofer diffraction
3	3/5, 3/7	Fresnel diffraction
4	3/12, 3/14	Fourier optics
5	3/19, 3/21	Lasers
6	3/26, 3/28	Applications of lasers
7	4/2, 4/4	Coherence, <b>Holiday</b>
8	4/9, 4/11	Coherence, <b>Midterm Exam</b>
9	4/16, 4/18	Non-linear optics
10	4/23, 4/25	Photon statistics and correlation function
11	4/30, 5/2	Squeezed state
12	5/7, 5/9	Number state and coherent state
13	5/14, 5/16	Entanglement and quantum operation
14	5/21, 5/23	Light-atom interaction
15	5/28, 5/30	Laser spectroscopy
16	6/4, 6/6	<b>Final Exam</b>
17	6/11, 6/13	Supplemental material: Atoms inside cavities
18	6/18, 6/20	Supplemental material: Ultrafast optics

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