

❖ ECE_Technical Elective (Optical Engineering toward Photonics) Instructor : Jeungphill Hanne

❖ Agenda for today

1. SCUPI 2026 Spring Academic Calendar

- Academic Calendar : Midterms & Final etc.
- My Schedule : Office hours etc.

2. Course Introduction

- Course information
 - Subject, Text book, Lecture Hour, Office hour, Course website, etc.
- Course Objective & Scope, Course Learning Key Points
- Course Grading & Tentative Course Schedule

& After the break

3. Review on

“Electromagnetic wave and more”

1. SCUPI 2026 Spring Academic Calendar

- Academic Calendar : Midterms & Final etc.

SCUPI Academic Calendar for 2025-2026 Spring																											
	Mar.		Mar.			Apr.				May					Jun.				Jul.					Aug.			
Monday	2	9	16	23	30	6	13	20	27	4	11	18	25	1	8	15	22	29	6	13	13	20	27	3	10	17	24
Tuesday	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	7	14	14	21	28	4	11	18	25
Wednesday	4	11	18	25	1	8	15	22	29	6	13	20	27	3	10	17	24	1	8	15	15	22	29	5	12	19	26
Thursday	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	16	23	30	6	13	20	27
Friday	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	17	24	31	7	14	21	28
Saturday	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	4	11	18	18	25	1	8	15	22	29
Sunday	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	19	26	2	9	16	23	30
SCU Week	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
SCU Term	2026 Spring Teaching Weeks													Final Week	Summer Recess					Summer Recess							

Midterm

Final

This schedule is preliminary!!

1. SCUPI 2026 Spring Academic Calendar

- My Schedule : Office hours etc.

2025-2026 Spring Semester Course Schedule					
Class time	Monday	Tuesday	Wednesday	Thursday	Friday
08:15-09:00			Optical Engineering N-209	Linear Control Systems S-506	
09:10-09:55			Optical Engineering N-209	Linear Control Systems S-506	
10:15-11:00			Optical Engineering N-209	Office Hour Linear Control N-412	
11:10-11:55			Optical Engineering N-209	Office Hour Power Engineering N-412	
Lunch Break					
13:50-14:35		Linear Control Systems S-506	Funamentals of Electric Power Engineering S-201	Office Hour Power Engineering N-412	
14:45-15:30		Linear Control Systems S-506	Funamentals of Electric Power Engineering S-201	Office Hour Optical Engineering N-412	
15:40-16:25		Office Hour Linear Control N-412	Funamentals of Electric Power Engineering S-201	Office Hour Optical Engineering N-412	
16:45-17:30					

But, you can come to my office anytime when I am in my office ^^

2. Course Introduction

- Optical Engineering toward Photonics

• Textbook

Fundamentals of Photonics, 3rd Edition
B.E.A. Saleh and M.C. Teich
ISBN 9781119506874, WILEY, 2019

• Reference

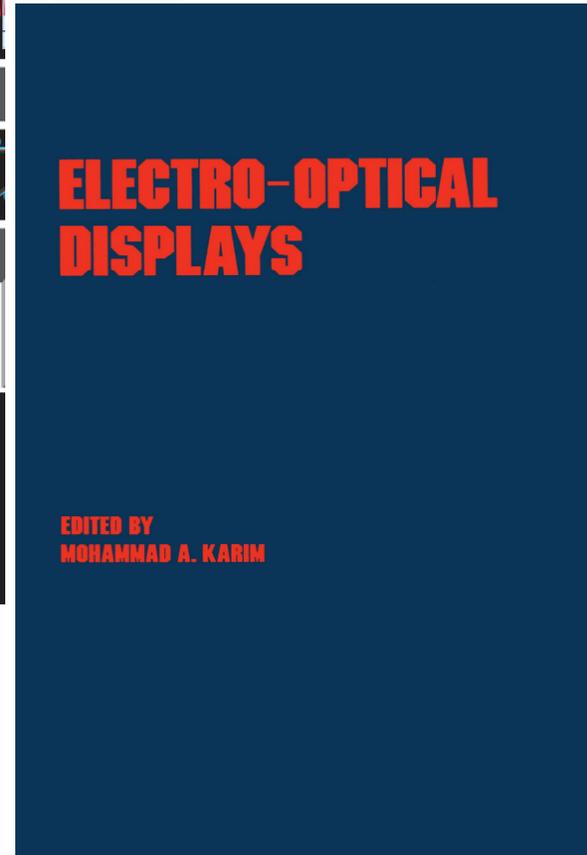
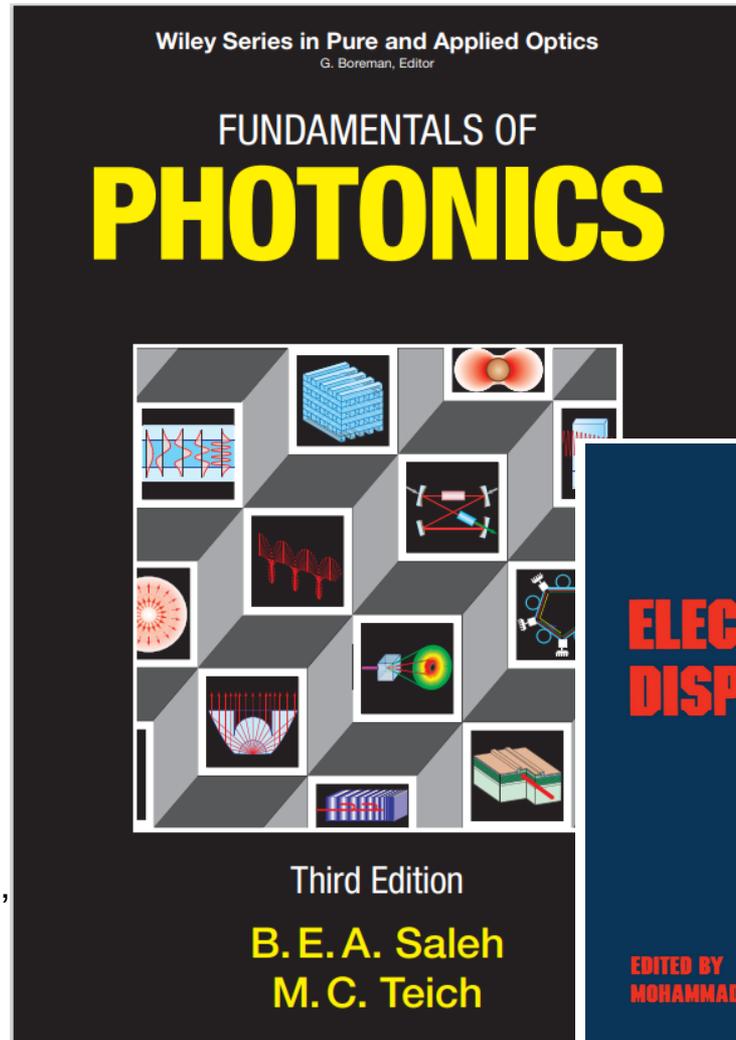
ELECTRO OPTICAL DISPLAYS,
NIHAMMAI A. KAIIM
ISBN 9781003066910, Marcel Dekker, Inc,
Taylor & Francis

• Lecture

- Instructor : Jeungphill Hanne, PhD
jeungphill.hanne@scupi.cn
- Time : Tues. (08:15-11:55) @ N209
- Office Hour: Thr.(12:45-16:25) @N412

• Course Format : Lecture & Presentation

• Course Grading: HW+Presentation+Quiz, Midterm, Final and Attitude etc.



2. Course Introduction

• Course Scope & Objective

- Scope & Objective

: This course is an introductory course of the optical engineering, which first teaches the basic knowledge of the optics, intermediately covers the optical phenomena and devices, and finally is followed to its application merged with the other engineering technologies such as Optoelectronics, Photonics, Optical Display, Medical Imaging, etc. Accordingly, it is designed to assist the engineering students to make a choice for his/her further postgraduate study in the Optical engineering area.

- Topics (selected)

: More specifically, the course will start by looking at the fundamental of the Optics such as Maxwell's electromagnetic waves, Wave Optics, Quantum theory of light, matter and its interaction, and then covers the Optical devices or Phenomena : laser, photons in semiconductors, semiconductor photon sources and detectors, electro-optics and acousto-optics.etc, Finally it will introduce the Modern Optical engineering products in Optoelectronics, Photonics, Optical Display, Medical Imaging, etc.

• Course Grading :

- **Grading** : HW + Quiz (20%), Midterm (25%), Presentation(25%), Final (25%)
and Attitude(5% : Attendance, Focus, Engagement, Punctuality for HW, etc.)

→ Less than 60% attendance might be failed for the course!

Can be flexible!

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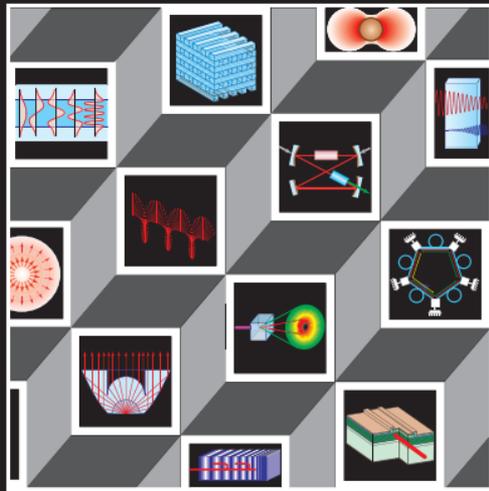
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Wiley Series in Pure and Applied Optics
G. Boreman, Editor

FUNDAMENTALS OF PHOTONICS



Third Edition

B. E. A. Saleh
M. C. Teich

WILEY

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ELECTRO-OPTICAL DISPLAYS

EDITED BY
MOHAMMAD A. KARIM

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• Example for “Topics”

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2. Connect Wave Optics to Geometrical Optics
3. EMCCD camera
4. Scientific CMOS camera
5. Photodetectors
6. Semiconductor Laser
7. LCD
8. LED and OLED
9. Acousto-Optics
10. Super resolution
11. Quantum Optics
12. Laser
13. Photon
14. Nonlinear Optics
15. AR/VR/XR Optics
16. Holographic Displays
17. 3D Displays
18. Optical Communication/Switch Interconnect
19. Quantum Computing by Optics
20. Gaussian/Bessel/Airy Beams
21. Spatial Light Modulator(SLM)
22. Fourier Optics
23. Optical Communication/Fiber

Tentative Course Schedule

Week	Optical Engineering	Topics	Assignment
Week 1 (3/9-3/15)	Syllabus & Introduction	Overview on EM Wave and Optics	
Week 2 (3/16-3/22)	Chap 1 & Chap 5 (Saleh)	Wave Optics & Electromagnetic Optics	HW1
Week 3 (3/23-3/29)	Chap 4 (Saleh)	Fourier Optics	
Week 4 (3/30-4/5)	Chap 13 & Chap 14 (Saleh)	Photon Optics & Light and Matter	HW2
Week 5 (4/6-4/12)	Chap 17 (Saleh) & Mid Term	Semiconductor Optics	
Week 6 (4/13-4/19)	Chap 18 (Saleh) & Presentation	LED and Laser Diode	HW3
Week 7 (4/20-4/26)	Chap 21 (Saleh) & Presentation	Electro-Optics	
Week 8 (4/27-5/3)	Chap 22 (Saleh) & Presentation	Nonlinear Optics	HW4
Week 9 (5/4-5/10)	Chap 23 (Saleh) & Presentation	Ultrafast Optics	
Week 10 (5/11-5/17)	Chap 24 (Saleh) & Presentation	Optical Interconnect and Switches	HW5
Week 11 (5/18-5/24)	Special Topics & Presentation	3D Display and Holographic Display	
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Week 15 (6/15-6/21)			
Week 16 (6/22-6/28)			
Week 17 (6/29-7/5)			
Week 18 (7/6-7/12)			
Week 19 (7/13-7/19)			

Any question so far?

**And let's be "Brainstorming" on
"Electromagnetic wave and more"**