

- (2) Each week, members in a study group are required to work together on a set of 30 slides, approximately 1 slide for 1 page of the course reader.
- (3) Mark your name on the slides prepared by you.
- (4) Before the class, all students have to email their slides in the pdf format to the teaching assistants and Prof. Huang. The file size can't exceed 1 Mb.
- (5) Each student has to bring a memory stick to the class and get ready for a presentation.
- (6) My slides are available on the course website for your reference only. Try to design your own slides. Don't copy my slides directly into your homework.

Presentation

In each class, I **randomly** draw 3-4 students, each giving half an hour presentation and host a Q&A session by using approximately 10 slides. *Note that you could have to use the other member's slides in your group for your presentation. This means you do have to work together with your team members on ALL the slides.* A presenter's performance will be graded by both the professor and the fellow students in the audience. **Each student is expected to give 5-6 presentations in a semester.**

Exams

There will be some quiz, a mid-term exam, and a final exam. All exams are open books/notes. Details of the exams will be announced later.

五、教學進度

1. Electromagnetic waves in the linear regime (D. K. Cheng, Huang)
2. Electromagnetic Wave in Anisotropic Media (Ch. 2 by Sauter, Ch. 6 by S&T, Ch. 4 by Y&Y)
3. Acousto-optics (Ch. 20 by S&T, Ch. 9 by Y&Y, Ch. 7 by Boyd)
4. Nonlinear Susceptibility (Ch. 1 by Boyd, Ch. 1 by Sauter)
5. Electro-optics (Ch. 3 by Sauter, Ch. 18 by S&T, Ch. 7 by Y&Y, Ch. 10 by Boyd)
6. Second harmonic generation (Ch. 2, 4 by Sauter, Ch. 19 by S&T)
7. Other Frequency Conversions using 2nd-order Nonlinearity (Ch. 4&5 by Sauter, Ch. 2 by Boyd, Ch. 19 by S&T, Ch. 12 by Y&Y)
8. Quasi-phase-matching nonlinear optics (handout)
9. Third-order Nonlinear Processes: third-harmonic generation, conjugate waves, Brillouin scattering, and Raman Scattering (Ch. 6 by Sauter, Ch. 18 by Yariv, Ch. 19 by S&T)
10. DC and AC Kerr Effect (Ch. 7 by Sauter, Ch. 19 by S&T)
11. High harmonic generation and plasma nonlinear optics

- Week 0 (Feb. 13rd) first meeting
Week 1 (Feb 20th) : up to page 30 of the course reader
Week 2 (Feb 27th): [holiday for Feb. 27](#)
Week 3 (March 6th): up to page 60
Week 4 (March 13th): up to page 90
Week 5 (March 20st) : up to page 115
Week 6 (March 27th): up to page 140, [laboratory: electro-optics](#)
Week 7 (April 3rd): [holiday for April 3](#)
Week 8 (April 10th): [up to page 165](#)
Week 9 (April 17th): up to page 190 (Midterm exam)
Week 10 (April 24th): up to page 215
Week 11 (May 1st) : up to page 240 (laboratory: Non-critically Phase-matched SHG)
Week 12 (May 8th): up to page 265
Week 13 (May 15th): up to page 290 (laboratory: Optical Parametric Generation)
Week 14 (May 22nd): up to page 318
Week 15 (May 29th): [holiday for May 29](#), up to page 351
Week 16 (June 5th): [up to page 382](#) (laboratory: Stimulated Raman Scattering)
Week 17 (June 12th) – exam week

六、成績考核

Homework	20%
Quiz	20%
presentation	20% (10% graded by peers)
midterm exam	20%
Final exam	20%

[Q&A – reference for score adjustment \(Prof. Huang will keep a record of questions asked by you during and off the class\)](#)

七、講義位址 chapter files available at <http://www.hope.nthu.edu.tw> (passcode to access: 20155110) and bound copies available at 水木書苑 by March 2nd

Presentation Grading Sheet

Grader's name: _____

Grader's ID #: _____

Date (mm/dd/yyyy): _____

1st presenter's name:

A+	A	A-	B+	B	B-	C	D	X
(90-100)	(85-89)	(80-84)	(77-79)	(73-76)	(70-72)	(60-69)	(1-59)	(0)

2nd presenter's name:

A+	A	A-	B+	B	B-	C	D	X
(90-100)	(85-89)	(80-84)	(77-79)	(73-76)	(70-72)	(60-69)	(1-59)	(0)

3rd presenter's name:

A+	A	A-	B+	B	B-	C	D	X
(90-100)	(85-89)	(80-84)	(77-79)	(73-76)	(70-72)	(60-69)	(1-59)	(0)

4th presenter's name:

A+	A	A-	B+	B	B-	C	D	X
(90-100)	(85-89)	(80-84)	(77-79)	(73-76)	(70-72)	(60-69)	(1-59)	(0)

5th presenter's name:

A+	A	A-	B+	B	B-	C	D	X
(90-100)	(85-89)	(80-84)	(77-79)	(73-76)	(70-72)	(60-69)	(1-59)	(0)