

Silicon Photonics

矽光子學

課程編號：941 U0460

科目名稱：矽光子學

授課教師：黃鼎偉

時間地點：一678 明達館 303

Course Description

- This course provides a comprehensive overview of the technology, and take the students through the introductory principles, on to more complex building blocks of the optical circuits.

Course Information

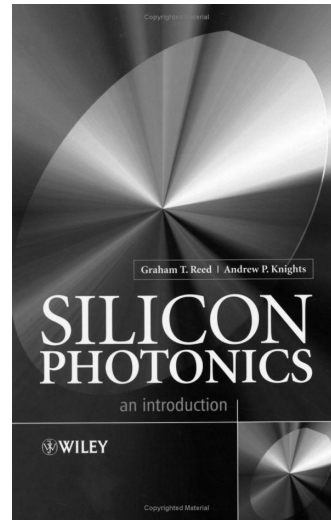
- Homepage:
<http://iphotonics.dyndns.org/dwhuang/courses/sp/>
- Credits: 3 units
- Time/Location: Mon. 678, EE MD 303
- Textbooks: "Silicon Photonics: An Introduction" by Graham T. Reed and Andrew P. Knights, Wiley, 2004.
- Instructor:
Ding-wei Huang 黃鼎偉 (dwhuang@cc.ee.ntu.edu.tw)
Office: MD 720
- TA:
- Office Hour:

Course Information

- Grading
 - Midterm Exam 30%
 - Final Exam 30%
 - Homework 25%
 - Discussion and Report 15%
- Other
 - Please print out the class notes (posted on the website) in advance.
 - Please also take the additional notes in the class.
 - Final report: Details to be announced in midterm.

Textbook

- “Silicon Photonics”
- Graham T. Reed and Andrew P. Knights
- Wiley 2004
- 滄海書局代理
 - 02-27090781
 - 04-27088787



Course

0. Introduction
1. Fundamentals of photonics
2. Basics of guided waves
3. Characteristics of Optical Fiber Communications
4. Silicon-on-Insulator (SOI) Photonics
5. Fabrication of Silicon Photonic Devices
6. A Selection of Silicon Photonic Devices
7. Prospects for Silicon Light-emitting Devices
8. Other Issues

國立臺灣大學九十八學年度 第一學期教學計劃表

一、科目名稱：矽光子學 課程編號 941 U0460					
二、教學內容與進度：					
週次	起迄日期	上課日期	教材單元與進度	評量與檢討	備註
一	09/14-09/20	09/14	0 Introduction		
二	09/21-09/27	09/21	1 Fundamental of Photonics 2 The Basics of Guided Waves		
三	09/28-10/04	09/28	2 The Basics of Guided Waves		加選課
四	10/05-10/11	10/05	3 Characteristics of Optical Fibers for Communications	Homework 2	
五	10/12-10/18	10/12	3 Characteristics of Optical Fibers for Communications		
六	10/19-10/25	10/19	4 Silicon-On-Insulator (SOI) Photonics	Homework 3	
七	10/26-11/01	10/26	4 Silicon-On-Insulator (SOI) Photonics		
八	11/02-11/08	11/02	4 Silicon-On-Insulator (SOI) Photonics		
九	11/09-11/15	11/09	MIDTERM EXAM	期中考 30%	
十	11/16-11/22	11/16	5 Fabrication of Silicon Waveguide Devices	Homework 4	
十一	11/23-11/29	11/23	5 Fabrication of Silicon Waveguide Devices		
十二	11/30-12/06	11/30	6 A Selection of Photonic Devices	Homework 5	
十三	12/07-12/13	12/07	6 A Selection of Photonic Devices		
十四	12/14-12/20	12/14	7 Prospects for Silicon Light-emitting Devices	Homework 6	
十五	12/21-12/27	12/21	7 Prospects for Silicon Light-emitting Devices		
十六	12/28-01/03	12/28	8 Other Issues	Homework 7	
十七	01/04-01/10	01/04	8 Other Issues		
十八	01/11-01/17	01/11	FINAL & REPORT	期末考 30%	報告15%