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EE214000 Electromagnetics, Fall, 2015

Last update Sep.13rd, 2016

EE 214000 Electromagnetics

國立清華大學電機工程科學系

Fall 2016

Prof. 黃衍介

Class location: Delta 209

Class schedule: M3M4W2

Office hours @ Delta 515: 10:10 am - noon, Wednesday.

Teaching Assistants (TAs): 蔡家豪 u10103021@go.utapei.edu.tw, 蔣弘儒,
alex830719@gmail.com, Tel: x 62333

General Information

This course is to introduce the basic concepts on electromagnetics, covering topics of transmission line, electrostatics, magnetostatics, time-varying field, plane waves etc. To be consistent with the modern trend of electrical engineering, I bring forward the transmission line to beginning of the lecture. The content of transmission line is mostly adopted from the textbook by Ulaby. However, the same concepts are also given in the textbook by Cheng.

This course will be lectured mostly in English and slightly in Chinese for clarity.

Textbook

David K. Cheng, Field and Wave Electromagnetics 2nd Ed., Addison Wesley, 1989.

Reference book

Fawwaz T. Ulaby, Fundamentals of Applied Electromagnetics 6th Ed., PEARSON Prentice Hall, 2007. (新月圖書，東華書局代理)

Grading Policy:

Homework	25% (late homework not accepted)
1. Turn in a sheet containing 3 questions and their possible answers before the Monday class [submit it through the iLMS system]. The scope of the questions is in the scope of the weekly reading assignment. (15%)	2. Regular homework assignments (10%)
Weekly quiz (open books/notes)*	15%
Two midterm exams	20% x 2
One final exam	20%

* weekly quiz includes those lectured, **to be lectured**, or assigned in homework.

* those asking or answering questions in the class will receive extra credits.

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* In case we need to adjust scores in the end of the semester, your performance in quiz, question asking/answering, and “1” for the homework will become the weighting factor for the adjustment.

Course Handouts: Bound copies will be available at 水木書苑 in the first week of class . Updates can be found on <http://www.hope.nthu.edu.tw/?p=427> (passcode: EM_2016) .

Course Contents

Introduction, transmission line, vector calculus, electrostatics, magnetostatics, time-varying field, electromagnetic waves, EM wave at boundaries, radiation and antenna (if time allows).

Handout Reading Assignments (scope of in-class quiz)

Week 1 (Sep. 12): up to page 19
Week 2 (Sep. 19) : up to page 36
Week 3 (Sep. 26): up to page 47 (no class on Wed., Sep. 28)
Week 4 (Oct. 3): up to page 68
Week 5 (Oct. 10): up to page 82 (no class on Mon., 10/10)
Week 6 (Oct. 17) –up to page 103
Week 7 (Oct. 24): up to page 119
Week 8 (Oct. 31): first midterm exam
Week 9 (Nov. 7): up to page 135
Week 10 (Nov. 14): up to page 151 (no class on Wed., 11/16)
Week 11 (Nov. 21): up to page 167
Week 12 (Nov. 28): up to page 189
Week 13 (Dec. 5): midterm exam 2
Week 14 (Dec. 12): up to page 207
Week 15 (Dec. 19): up to page 223
Week 16 (Dec. 26): up to page 238
Week 17 (Jan. 2): up to page 253 (no class on Monday, 1/2)
Week 18 (Jan. 9) – Final Exam