

Department of Electronic Engineering
City University of Hong Kong
EE3109 Applied Electromagnetics
Jan – Apr 2019

Course Outline

(Version: 25 Jan, 2019)

Abstract:

The aim of this course is to provide students with fundamental electromagnetic theories and techniques for working as a communication engineers.

Official Course Page: <http://www.cityu.edu.hk/catalogue/ug/current/course/EE3109.htm>

Course Sections:

- Lectures: Tues 9-11am (Yeung LT-16)
- Tutorials: T01: Wed 3-4pm (Yeung B 5-211), T02: Wed 2-3pm (Yeung B 5-208)
 - (Tutorials start on **WEEK 1**)
- Lab Sessions: L01: Mon 9am-12nn (Yeung P1615), L02: Mon 3-6pm (Yeung P1615)
 - (Tentatively, Lab Sessions are on **WEEKS 10 and 12**)

Course Staff:

Name	Email	Office	Office Hours
INSTRUCTOR:			
Dr. Alex M. H. WONG (Assistant Professor)	alex.mh.wong AT cityu.edu.hk	Yeung G6516	Wed. 4-5pm
TEACHING ASSISTANTS:			
Mr. Kayode A. OYESINA	kaoyesina2-c AT my.cityu.edu.hk	MMW1433	Mon. 2-5pm, Fri. 12nn-3pm
Mr. Zhenxing XIA	zxxia2-c AT my.cityu.edu.hk	FYW1386	Tues. 3-6pm, Thurs. 3-6pm

Assessment:

Assessment Activities	Weighting
Continuous Assessment: 30%	
Test (2)	17%
Assignment (3)	3%
Laboratory Reports	10%
Examination: 70%	
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Remark: To pass the course, students are required to achieve at least 30% in coursework and 30% in the examination. Also, 75% laboratory attendance rate must be obtained.

Assignment Submission Policy:

Three assignments will be assigned and completed on an individual basis. The purpose of the assignments is to encourage students to practice solving the problem set questions. The assignment due dates will be as follows:

Assignment 1 Due Date: Week 6, beginning of lecture hour

Assignment 2 Due Date: Week 9, beginning of lecture hour

Assignment 3 Due Date: Week 12, beginning of lecture hour

Assignments must be submitted in lecture in the week where it is due. Submissions that come 1, 2 or 3 working days late will be deducted 15%, 30% and 45% of the total grade of the assignment. Assignments submitted more than 3 working days after the deadline will not be accepted.

Reading List:

1. I. Nathan" Engineering Electromagnetics (Springer, 3rd ed., 2015). (Compulsory text)
2. W. Hayt and J. Buck: Engineering Electromagnetics (McGraw Hill, 8th ed., New York, 2010)
3. Y. H. Lee: Engineering Electromagnetics (Springer, 2013) (Online)
4. F. Ulaby and Ravaioli: Fundamentals of Applied Electromagnetics (Pearson, 7th ed., Boston, 2015)

Tentative Course Schedule:

Week #	Week of (Monday)	Course Coverage
1	14 Jan	Course Introduction, Math Review
2	21 Jan	Electro/Magneto/Quasi-statics Review, Maxwell's Equations, Introduction to Electromagnetics (EM)
3	28 Jan	Complex Dielectric Properties, Boundary Conditions, Electromagnetic Potentials, Plane Waves
	4 Feb	<i>Holiday: Happy Chinese New Year!</i>
4	11 Feb	Plane Waves Continued, Polarization, EM Wave Reflection and Transmission from a Single Interface
5	18 Feb	Reflection and Transmission from Multiple Interfaces
6	25 Feb	Review; Test 1 Assignment 1 Due
7	4 Mar	Introduction to Transmission Lines (TL)
8	11 Mar	TL Equations from a Circuit Model, Voltage and Currents in a TL Assignment 2 Assigned
9	18 Mar	V and I in a TL Continued, Terminated TLs Assignment 2 Due
10	25 Mar	Impedance in a TL, Smith Charts <i>First Lab Session</i>
11	1 Apr	Multiple Reflections, Quarter-wave Transformers
12	8 Apr	Antennas, other Advanced Topics <i>Second Lab Session</i> Assignment 3 Due
13	15 Apr	Review; Test 2