

GENERAL COURSE INFORMATION:

**ADVANCED ELECTROMAGNETIC
THEORY - Part b**

Fall semester of 2016

**EE 570b – Lec 31111R & 31288D
Dis 31339R & 31289D**

Welcome to ADVANCED ELECTROMAGNETIC THEORY, Part b, the second part of an advanced course on applied electromagnetics. This course has 29 lectures, 14 discussion sessions, 13 homeworks, 1 midterm exam, and one final exam. Below are relevant information concerning this course; feel free to clarify any additional points that you may have directly with the instructor.

Prerequisite: EE 570a or equivalent.

Credit: 3 units.

Instructor: Prof. Aluizio Prata, Jr. [office: PHE 618;
tel. (213) 740-4704; email: prata@usc.edu].

Grader: Aluizio Prata, Jr..

Text: Class notes and (loosely followed) Constantine Balanis,
Advanced Engineering Electromagnetics, second edition
(ISBN 0-471-62194-3).

Lectures: Tuesday and Thursday 14:00 – 15:20 in OHE 100B.

Discussion: Friday 08:00 – 08:50 in OHE 100B.

Instructor Office Hours: Tuesday and Thursday,
11:00 to 11:45 and 15:30 to 16:45

Material covered and homework schedule:

Week #	HWK # and due date	Material covered in class
1		Radiation. Uniqueness theorem.
2		Image theory. Equivalence theorem.
3	HWK 01, Sep, 08, Thursday	Equivalence theorem. Green's functions. Reciprocity theorem.
4	HWK 02, Sep. 15, Thursday	Reciprocity theorem. Circuit theory sources.
5	HWK 03, Sep. 22, Thursday	Principle of similitude. Rectangular cross-section waveguides.
6	HWK 04, Sep. 29, Thursday	Rectangular cross-section waveguides.
7	HWK 05, Oct. 06, Thursday	Group velocity. Power carried by waveguide modes.
8	HWK 06, Oct. 13, Thursday	Power orthogonality. Junction between waveguides.
9	HWK 07, Oct. 20, Thursday	Junction between waveguides.
10	HWK 08, Oct. 27, Thursday	Excitation of waveguides. Green's functions.
11	HWK 09, Nov. 03, Thursday	Green's functions.

12	HWK 10, Nov. 10, Thursday	Coupling through apertures.
13	HWK 11, Nov. 17, Thursday	Circular cross-section waveguides.
14	HWK 12, Nov. 29, Tuesday	Waveguides with anisotropic walls. Corrugated waveguides.
15	HWK 13, Dec. 01, Thursday	Corrugated waveguides.

The homework is due *at the beginning* of the corresponding lecture, on the due date. No late homeworks are accepted.

Exam schedule:

Exam	Date	Time	Location	Material Covered
Midterm	Fri., Nov. 04	08:00–08:50	OHE 100B	Assignments 1–8
Final	Thr., Dec. 13	14:00–16:00	OHE 100B	All course material

All exams are of the closed-book type. The only books allowed during the exams are mathematics books, and your own class notes and homework solutions. You may also use a calculator. You are responsible for all material covered in class, on the assigned readings, and on the homework problems.

You must take the exams at the scheduled times. If you are absent during an exam, you will receive a zero grade unless you have a valid reason for your absence, *and* you have discussed it with Prof. Prata *prior* to the exam. Bring your USC ID card to each exam; it may be checked during the exam.

Grading Policy: The final grade of the course is computed using an weighted average of the midterm exam (with 35% weight), the final exam (with 45% weight), and of the thirteen homeworks (their average weighted by 20%).