Instructor
Do-Hoon Kwon
Electrical & Computer Engineering University of Massachusetts Amherst MoWe 2:30–3:45PM
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Office hours 3:45–4:15PM on MoWe and by appointment

Course Objectives
In this course, the student will acquire the following skills. He/she should be able to:
1. Understand and use the standard antenna parameters
2. Understand and compute near- and far-field quantities from several common antennas
3. Design simple antennas to achieve specified electrical performance
4. Design antenna arrays with required radiation pattern characteristics
5. Understand self/mutual impedances and use MoM numerical analysis
6. Critically evaluate requirements and potential design options for applications

Prerequisites

Course Website
http://www.ecs.umass.edu/ece687

Textbook

Reference

Course Requirements
Homeworks, one midterm exam, and a final exam.

Grading Policy
Homework 20 %
Midterm Exam 40 %
Final Exam 40 %

Homework assignments are due at the beginning of the class period on the due date. Late homework will NOT be accepted. Late submissions under extenuating circumstances (e.g. a research-related travel) should be arranged in advance with the instructor.
Course Topics
1. Fundamental quantities of antennas (ch. 2) [3 lectures]
2. Basic wire antennas: dipole, loop (ch. 4, 5) [3 lectures]
3. Method of Moments (ch. 8) [3 lectures]
4. Antenna arrays (ch. 6) [4 lectures]
5. Antenna synthesis (ch. 7) [3 lectures]
6. Aperture antennas (ch. 12, 13) [4 lectures]
7. Reflector antennas (ch. 15) [3 lectures]
8. Broadband/wideband antennas (sec. 10.3) and microstrip patch antennas (ch. 14) [3 lectures]

Computer Requirements
The software PCAAD – Personal Computer Aided Antenna Design (Antenna Design Associates, Inc.) may be used by students for homework. Some computer analysis using PCAAD and/or general-purpose tools (MathCad, Matlab, etc) may be necessary for homework.

Academic Honesty
The students of this course are expected to abide by the Academic Honesty Policy of the University, available online at http://www.umass.edu/ombuds/honesty.php.