430.203A-002: Electromagnetics (Credit: 3)
Spring 2019
Department of Electrical and Computer Engineering, Seoul National University

Instructor: Jaesang Lee
jsanglee at snu dot ac dot kr
Office: Bldg. 301 Rm. 906 (Office hours: Mon / Wed / Fri 2 – 3 pm)

Lectures: Tue / Thu 2 – 3:15 pm (Classroom: Bldg. 301 Rm. 103)
Prerequisite: Introduction to electromagnetism with practice (430.202B), Engineering mathematics 1 & 2, Circuit Theory I & II

Textbooks: D. K. Cheng, *Field and Wave Electromagnetics*, 2nd Ed. Addison-Wesley, 1989.

Homework: A problem set will be given approximately every two weeks and will be uploaded on ETL after the Thursday class. A homework is due one week after being assigned. Course TA will collect the finished homework at the end of the class or students can drop their homework in the submission box at the instructor's office (301-906) until 6 pm. No late homework will be accepted.

Exam: There will be two midterm and one final exams. The exam schedule is subject to change.

Grading:
Homework (15 %)
Midterm I (20 %)
Midterm II (25 %)
Final (30 %)
Attendance (10 %)
* Attendance policy: Students who are absent for over 1/3 of the class will receive a grade of 'F' or 'U' for the course. (Exceptions can be made when the cause of absence is deemed unavoidable by the course instructor.

Descriptions: In the course, we will begin with *Maxwell's equations* that are a complete set of four equations describing classical electromagnetism: the interaction between electric and magnetic fields under *both static and time-varying conditions*. Based on such governing equations, we will learn how plane electromagnetic waves propagate in a vacuum and across different media. Also, we will explore transmission of signal and power in the form of the electromagnetic waves through different waveguiding structures. At the end, we will learn antennas that are designed for long-distance and wireless radiation and reception of electromagnetic waves in a prescribed manner.

Syllabus:

Week	Topic	Reading	HW / Exam
1	Introduction / Review static EM fields	Ch. 1 ~ 6	
2	Maxwell's Equations	Ch. 7	HW1
3	Plane Electromagnetic Waves I	Ch. 8	
4	Plane Electromagnetic Waves II	Ch. 8	HW2
5	Plane Electromagnetic Waves III	Ch. 8	**Midterm I**
6	Waveguides I	Ch. 10	
7	Waveguides II	Ch. 10	HW3
8	Waveguides III / Transmission Lines	Ch. 9 ~ 10	
9	Transmission Lines I	Ch. 9	HW4
10	Transmission Lines II	Ch. 9	**Midterm II**
11	Transmission Lines III	Ch. 9	
12	Transmission Lines IV	Ch. 9	HW5
13	Antennas I	Ch. 11	
14	Antennas II	Ch. 11	HW6
15	Antennas III	Ch. 11	**Final**

* Note that this is a guide and thus, subject to change as the course progresses.

Staff

Course TA: 양광모 (kwangmo95 at snu dot ac dot kr)
Course tutor: 최선진 (csj7481 at snu dot ac dot kr)

Support services for students with disabilities:

For lectures

- Visual Impairment: Make textbooks (digital textbook, braille textbook, enlarged textbook etc.), Allow note takers.
- Physical Disability: Make textbooks (digital textbook), Allow note takers and assistants
- Hearing Impairment: Allow note takers and translators, Allow lecture recording
- Health Impairment: Excuse absence due to health problems, Allow note takers
- Learning Disability: Allow note takers
- Intellectual Disability / Autism Spectrum Disorder: Allow note takers and mentors
- Visual Impairment: Make textbooks (digital textbook, braille textbook, enlarged textbook etc.), Allow note takers.

For assignments and Evaluations

- Visual Impairment / Physical Disability / Hearing Impairment / Health Impairment / Learning Disability: Extend assignment deadlines, Offer alternate assignment submission and response method, Extend testing period, Offer alternate testing method, Offer different testing room
- Intellectual Disability / Autism Spectrum Disorder: Offer individualized assignments and alternative evaluations

Others

- Students who take this course can get appropriate level of support service including the support listed above depending on the students' individual characteristics and needs through consultation with professors and the Support Center for Students with Disabilities. If you have any questions concerning support service for students with disabilities you can contact Professor Jaesang Lee (02-880-9093) or Support Center for Students with Disabilities (02-880-8787).