개설학기	2015 - 1				
교과목명	전자기학			학수번호	106303- 007
학점/시수(이론/실기)	3학점/4시수 (3/1)	설계학점	0학점	강의시간	목789
개설학과 (학년)	전자·전기공학부(2학년)			강의실	P209
담당교수	오이석			e-mail	
	박신명				
연구실 및 면담시간	P607, Office Hours: Thur, 6-9 pm				
담당조교명	Sinmyeong Park			조교실	P611-1
담당조교 e-mail				면담시간	
작성일자	2015/02/06			선수과목	

1. 교과목 개요

This course covers the basic theories and fundamental concepts on the principles and applications of electric and magnetic fields and all kinds of phenomena relating to the electromagnetics. At first, the vector anlysis for vector differentialtion and integraton will be introduced as the background mathematics for the forth-coming electromagnetic field analyses. Then, the electrostatics and magnetostatics will be handled in this course, which are emphasized on field computations, Maxwell's equations, boundary conditions, design principles of the circuit elements (R, L, C), and material characteristics.

2. 교재 및 부교재

교재	D.K.Cheng, Fundamentals of Engineering Electromagnetics, Addison-Wesley
부교재	Fundamentals of Applied Electromagnetics, Ulaby, Michielssen, and Ravaioli, 6th Ed,
부교재2	
부교재3	
부교재4	
부교재5	

3. 학점 구성 및 평가기준

학점분포	A+/A0: 20~30%, B+/B0: 30~40%, C+/C0: 20~30%, D+/D0: 10~20%
학점구성	Mid-term Exam 40%, Final Exam 40%, Assignments 10%, Attendance 10%
시험	A midterm exam and a final exam.
숙제	6~8 Assignments
F학점처리기준	'F' grade will be given to the students (a) Cheating, (b) Attending less than 2/3 of all classes, and (c) not taking either exam.
기타 (재수강제한 등)	

4. 강의 진행방법 및 유의사항

강의진행방법	빔프로젝트 판서
장애학생에 대한 지원	
기타유의사항	

5. 강의 내용 및 일정			
No	강의 및 실습내용	교재내 범위	기타
1	Overview of Electromagnetics, Vector Multiplication	1.1-1.3	
2	Orthogonal Coordinate Systems	2.4	
3	Gradient, Divergence of a vector field, Divergence Theorem	2.5-2.7	
4	Curl of a vector field, Stokes's Theorem, Null identities	2.8-2.11	
5	Electrostatics, Coulomb's Law	3.1-3.3	
6	Gauss's Law, Electric Potential	3.4-3.5	
7	Conductors and Dielectrics, Electric flux density	3.6-3.7	
8	Boundary Conditions, Capacitances, Mid-term Exam	3.8-3.9	
9	Boundary-value problems	3.10-3.11.4	
10	Method of lines, Steady electric current, Ohm's law	3.11.5	
11	Electric current, Resistance	4.5-4.6	
12	Magnetostatics, Vector magnetic potential	5.1-5.3	
13	Biot-Savart Law, Magnetic dipole	5.4-5.6	
14	Magnetic field intensity, Inductance	5.7-5.10	
15	Magnetic energy, force, torque, Final Exam	5.11-5.12	
참고 사항	Please be aware that the lectures of this couse will be proceeded in English.		