강 의 계 획 서

교과목명	전자기학1	교강사명	김소영
수강대상대학	반도체시스템공학전공		
수업시간	월[EE]15:00-16:15,수[EE]15:00-16:15		
강의실	[400126] 반도체관 1층 첨단강의실		
개요/진행	Electromangetics 1 explains the force and energy due to charge and currents in terms of field quantity. To explain the electromagnetic field theory and solve the related problems quantitatively and concisely, mathematical tool of vector calculus is continuously used through the lecture. Therefore students should be accustomed to using vector calculus to solve problems by taking a lot of practice. However, please keep in mind that the vector calculus is not electromagnetics itself. To understand the physical meaning of several derivative concepts of electromagnetic field theory such as potential, capacitance, inductance and EMF is more important for electronic engineers.		

내용

1 회	Introduction
2 회	Vector Analysis
3 회	Static Electric Fields (Gauss's Law , Electric Potential)
4 회	Static Electric Fields (Conductors and Dielectrics in Static Electric Fields, Boundary Conditions)
5 회	Capacitance and Capacitors, Electrostatic energy and force
6 회	Boundary Value Problems
7 회	Midterm
8 회	Steady Electric Currents
9 회	Capacitance and Resistance in VLSI systems
10 회	Static Magnetic Fields (Bio-Savart Law)
11 회	Static Magnetic Fields (Magnetic dipole, Boundary Conditions)
12 회	Magnetic Material
13 회	Inductance and Inductors
14 회	Magnetic Energy,Magnetic Forces and Torques
15 회	Applications of Electromagnetics
16 회	Review and Finals

참고문헌

도서구분	도서명	저자	발행년도	출판사
교재	Elements of Electromagnetics	Mattew O. Sadiku	2009	Oxford University Press
부교재	Fundamentals of Engineering Electromagnetics	David K. Cheng	1993	Pearson Addison Wesley