Syllabus of Fall Semester, 2017

Course Title	ELECTROMAGNETICS(II)	Course Code	ET25985	Section	061
Department	Electrical Engineering Major	Level	2	Credit - Theory - Practice	3.0 - 3.0 - 0.0
Class Hours & Classroom	Mon. 13:30(75) 207-10204,Wed. 13:30(75) 207-10204				
Lecturer	Hae June Lee	Office		Office Hours	Tue & Wed: 16:30~18:00
		Telephone		E-mail	
Methodology of Instruction					
Evaluation and Grading	Attendance 5%, Mid exam 30%, Homework 10%, Final exam 40%, Quiz 15% * Students with disabilities can request an extension of the exam hour, and they can take exams by getting writing assistance or by using a computer.				
Prerequisites	Electromagnetics 1				
Course Objectives	1. To understand the physics of magnetic field induced by electric current, and to enhance the bases of mathematics and engineering. 2. To study the relationship of time varying electric and magnetic fields. 3. To derive the mathematical solution of plane waves and to enhance the systematic thought by understanding the physics. 4. To emphasize the skills of expression and communication, and the generality of logics in order to enhance exact, logical, and systematic thoughts and to apply them to many fields				
Course Description	This lecture deals with basic theory and application aspect of time varying electromagnetic field. Understanding physical meaning of the maxwell equations is a major goal of this class. It covers low frequency induction field, EM waves, transmission line analysis. Many application specific examples and problems will be given * Students with disabilities can negotiate with the Disabled Student's Academic Support Center regarding course materials and assignments.				

Relationship between Courses and Core Competencies

8 Core Competencies of PNU								

Core Competencies Based on Courses and Educational Methods

Core Competencies of Department		Educational Methods
1	Ability for applying information and technology in mathematics, basic science, and engineering	
3	Ability for designing systems and processes that meet realistic limits and requirements, and planning and performing projects	
4	Ability for formulating engineering problems, understanding requirements, and modeling the problems	
5	Ability for using techniques, methods, and tools required in engineering and IT work	
9	Widespread knowledge for understanding effects of engineering and IT for solving problems in global economy, environment, and so	

Textbooks and References		
Required Textbooks	Engineering Electromagnetics, Hayt & Buck, 7th edition, McGraw Hill	
References	1. Field and wave electromagnetics, David K. Cheng, 2nd edition, Addison Wesley 2. Elements of Electromagnetics, Sadiku, 2nd edition, Saunders College Publishing	
Weekly Schedule of Classes		
Week No.	**Course Material**	**Assignments and Other Notes**
Week 1	[Orientation and Education on Academic Misbehavior(e.g. Cheating, Plagiarism) and Safety Education on Experiment and Practice] Review of basic concept of magnetostatics	
Week 2	Magnetic forces, materials	
Week 3	Inductance and Boundary conditions of magnetic field	HW 1
Week 4	Time varying field and Maxwell's equations	
Week 5	Test Exam	
Week 6	Distributed circuit analysis of transmission line	
Week 7	Transmission line theory and voltage, current wave propagations in transmission line, Smith chart	HW 2
Week 8	Uniform plane wave theory (1)	
Week 9	Mid term exam	
Week10	Uniform plane wave theory(2)	
Week11	Reflection of uniform plane waves at normal incidence and multiple interfaces	
Week12	Plane wave reflection at oblique incident angles 1	HW 3
Week13	Plane wave reflection at oblique incident angles 2	
Week14	Introduction to waveguide and antenna	
Week15	Final exam	
Week16		
Attachment		