Syllabi:

EE3221 ELECTROMAGNETIC FIELD THEORY

Instructor: Jorge Garza-Ulloa, MS jgarzaulloa@miners.utep.edu Office: EE316

Note : Please use your Blackboard email box for this class

Catalog description:

This course covers: Wave propagation and Vector analysis, Fundamental of Laws and concepts of static and time harmonic electromagnetic fields.

Motivation:

The electrical engineers need to understand and applied the fundamentals principles and laws to design better electronics systems: analog and digital.

Textbook (Required)

Fundamentals of Applied Electromagnetic (6^{th} edition)
Fawwaz T. Ulaby
Pearson Prentice-Hall 2010
ISBN: 0-13-978-0-13-21393-1

Course: Outline:

Module 1	Vector Analysis
Module 2	Electrostatics
Module 3	Magnetostatics
Module 4	Wave propagation and Transmission lines
Module 5	Waveguides

Critical course outcome:

Apply vector calculus to understand statics electric fields

Apply vector calculus to understand statics magnetic fields

Describe and analyze electromagnetic wave propagation in free space

Describe and analyze transmission lines

Project to connect the theory with the real world of and Electrical Engineer

UTEP Blackboard:

UTEP Blackboard is used on the entire course for material presentation, assignment and homework

Mandatory attendance:

We reserve the right to withdraw any student who has more than four unexcused absences

Homework:

Weekly (individual assignment)

Grading:

Exam 1:	15 points + 5 points of weekly homework
Exam 2:	15 points + 5 points of weekly homework
Exam 3:	15 points + 5 points of weekly homework
Exam 4:	15 points + 5 points of weekly homework
Project:	20 points
Total	100 points

Final letter grade scale:	A	100-90
	B	89.9-80
	C	79.9-70
	D	69.9-60.0
	F	below 60.0

Academic integrity and Professional Ethics

As described on the policy on academic dishonesty: http://www.utep.edu/dos/acadintg.htm

And IEEE code ethics: http://www.ieee.org/about/whatis/code.html

Fall Schedule 2011 - **EE3221 ELECTROMAGNETIC FIELD THEORY**

Note: Hw assignment Every Thursday Due by Blackboard Every Sunday before 5 pm. No exception

Date	Lecture Description	Reading Assignment
T Aug 22	Introduction to EMF	Chapter 1
Th Aug 24	Waves	Chapter 1
TAug 29	Coordinate Systems Dot and Cross Product	S3-1, S3-2
Th Aug 31	Coordinate Transformations Gradient, Laplacian Operator	S3-3, S3-4, S3-7
T Sept 5	Divergence, Curl Stokes Theorem	S3-5, S3-6
Th Sept 7	Review for Exam 1	
T Sept 12	Exam 1	
Th Sept 14	Exam results and Intro Electric Field	S1-1.2
T Sept 19	Electric Field	S4-1, S4-3
Th Sept 21	Charge and Current Density	S4-2
T Sept 26	Gauss's Law	S4-4
Th Sept 28	Potential Poisson's Equation	S4-5
T Oct 3	Capacitance	S4-10
Th Oct 5	Review for Exam 2	
T Oct 10	Exam 2	
Th Oct 12	Exam results and Intro Magnetic Field	S1-2,3
T Oct 17	Lorentz' Force	S5-1
Th Oct 19	Biot-Savart Law	S5-2
T Oct 24	Ampere's Law	S5-3,S5-4
Th Oct 26	Faraday's Law Inductance	S5-8, S6-1, S6-2
T Oct 31	Review Exam 3	
Th Nov 2	Exam3	
T Nov 7	Harmonic Fields and Phasors Maxwell's Equations	S1-6, S7-1
Th Nov 9	Wave Propagation	S7-2
T Nov 14	Normal Incidence	S8-1
Th Nov 16	Oblique Incidence	S8-2,S8-4
T Nov 21	Telegraph Equations	S2-1, S2-2 S2-3, S2-4
Th Nov 23	Voltage Standing Wave Ratio and Assign Final Projects	S2-5
T Nov 28	Input Impedance	S2-6, S2-7, S2-8
Th Nov 30	Exam 4	

T Dec 5	Results Exam 4	
Th Dec 7	Project Presentation	