EE 301 – Electromagnetic Fields – 3 cr. hrs.
Spring 2016
Tentative Course Outline Sheet

Course Purpose: The purpose of this course is to introduce the students to the basic definitions, concepts and laws that are essential in understanding the characteristics and propagation of electromagnetic waves.

Student Outcomes: At the successful completion of this course, the student is expected to gain the following skills:

- Understand the fundamental differences between Lumped-circuit versus distributed-circuit analysis;
- Understand transmission-line fundamentals;
- Understand the Smith chart and its applications;
- Analyze and design impedance-matching networks;
- Become familiar with Maxwell’s equations; and
- Understand the properties of uniform plane electromagnetic waves.

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Lecture Hours: MWF 11:25-12:20 (Location: Shiley Hall 123)

Office Hours: M 13:30-15:30; T 12:30-13:30; W 14:30-15:30; & F 13:30-14:30

“I prefer death to lassitude. I never tire of serving others,”
by Leonardo da Vinci (1452–1519)


Course Content: Lumped vs Distributed Electrical Circuits (Chapter 1)
Digital Signals Traveling on Transmission Lines (Chapter 2)
Steady-State Waves on Transmission Lines (Chapter 3)
Smith Chart and Impedance Matching (Chapter 3)
Maxwell’s Equations (Chapter 7)
Electromagnetic Waves (Chapter 8)

Prerequisites: EE 261, MTH 301, and PHY 205.

Grading Policy: The total numerical grade is computed based on the following percentages:

- 2% for contemporary issues
- 18% for homework
- 50% for the two midterm exams (25% each) and
- 30% for the final exam

The final letter grade in the course is assigned based on the following total numerical grade intervals out of a total of 100 points:
90–100 A–A (Excellent Performance)
80–89 B–B’ (Good Performance)
70–79 C–C’ (Average Performance)
60–69 D–D’ (Poor Performance)
<60 F (Inadequate Performance)

Typically, the numerical average of the total numerical grades is assigned to about a B’ grade.

Exam Dates:
The exam dates are tentatively set as follows:

Midterm exam #1 – Friday, February 19, 2016
Midterm exam #2 – Friday, April 8, 2016
Final exam* – Thursday, April 28, 2016, 8:00-10:00
*Comprehensive and mandatory for all the students.

N-C Class Dates:
Monday-Friday, March 7 through 11, 2016 (Spring Break)
Friday & Monday, March 25 & 28, 2016 (Easter Break)
Tuesday, April 12, 2016 (Founder’s Day Presentations*)
*Attendance expected.

Homework:
Weekly homework will be assigned. Solutions for each homework assignment will be provided on the due date. Homework assignments are mandatory, that is, every student is expected to do the homework assignments on time to qualify for consideration to receive a passing grade in the course.

Sorry, but, no late homeworks will be accepted!!
Therefore, no late homeworks will be expected!!

Contemporary Issues Assignment:
Due Friday, April 8, 2016. This assignment is worth 10 points (about 2% of the total class grade).
The purpose of this assignment is to help students become more aware of contemporary issues related to electrical engineering that can affect their careers and lives. To receive credit for this assignment, you need to attend at least one professional meeting or lecture where a contemporary issue related to electrical engineering is presented and write a short summary of the presentation.
A list of pre-approved events will be posted at http://faculty.up.edu/hoffbeck/ContemporaryIssues.html

If you plan to attend a presentation that is not listed on the website, please contact your instructor before the event to see if it will be approved for this assignment.

The summary should be approximately one page long, and should include the following items:
1. Your name
2. The title, date, and location of the event
3. Name of the speaker, and his/her affiliation (company or university)
4. Summary of the presentation discussing the main points and what you learned from the presentation.
UP’s code of Academic Integrity:

Academic integrity is openness and honesty in all scholarly endeavors. The University of Portland is a scholarly community dedicated to the discovery, investigation, and dissemination of truth, and to the development of the whole person. Membership in this community is a privilege, requiring each person to practice academic integrity at its highest level, while expecting and promoting the same in others. Breaches of academic integrity will not be tolerated and will be addressed by the community with all due gravity (taken from the University of Portland’s Code of Academic Integrity).

The complete code may be found in the 2015-2016 University of Portland Student Handbook and as well the Guidelines for Implementation. It is each student’s responsibility to inform him or herself of the code and guidelines.

Assessment Disclosure:

Student work products for this course may be used by the University for educational quality assurance purposes.

Accommodation for Disability:

If you have a disability and require an accommodation to fully participate in this class, contact the Office for Students with Disability (OSWD), located in the University Health Center (503-943-7134), as soon as possible.

Diversity & Green Dot Statement:

All persons should be safe to express their opinions in my class, regardless of their race, religion, political philosophy, gender, sexual orientation, or disability. In addition, I encourage anyone to speak up on behalf of themselves or others, if the classroom environment becomes uncomfortable for any reason.

Sunday, January 17, 2016 marks Benjamin Franklin’s 310th birthday!

What is special about my 310th birthday, to occur in 2016?

Answer: If the digits of my 310th birthday, expressed as 01-17-2016, are numbered from left to right as 1 to 8, the even-numbered digits yield 1706. What is special about 1706?