University of Portland (UP)
School of Engineering

EE 402/502 – Microwave & Optical Transmission – 3 cr. hrs.
Spring 2014
Tentative Course Outline Sheet

Course Purpose: The purpose of this course is to introduce the students to more advanced topics in high-frequency applications of electromagnetic theory. This course is a continuation of EE 301 (Electromagnetic Fields) which is taken at the junior level.

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

- Understand Maxwell's equations and their applications;
- Understand propagation of uniform plane waves in different types of media;
- Understand wave polarization;
- Understand reflection/transmission of electromagnetic waves at plane boundaries (normal incidence & oblique incidence);
- Analyze and design simple radome and antireflection (AR) coating structures;
- Understand Brewster angle and its applications; and
- Understand total internal reflection and its applications; and
- Parallel-plate metal and dielectric slab waveguides.

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Lecture Hours: TTh 9:45-11:10 (Location: Shiley Hall 101)

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

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

Textbook: *Electromagnetic Waves* by Inan[2]
(Prentice Hall, 2000, ISBN 0-201-36179-5)

Course Content: Review of Maxwell's Equations (Chapter 1)
EM Waves in Unbounded Medium (Chapter 2)
Reflection, Transmission and Refraction (Chapter 3)
Parallel-plate Metal and Dielectric Waveguides (Chapter 4)
Cylindrical Waveguides (Chapter 5)

Prerequisites: EE 301.

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

- 20% for homework
- 20% for the research project

- 30% for the midterm exam
- 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 – Thursday, March 6, 2014
Final exam* – Monday, April 28, 2014, 8:00-10:00
*Comprehensive and mandatory for all the students.

N☺-Class Dates: Monday-Friday, March 10 through 14, 2014 (Spring Break)
Friday & Monday, April 18 & April 21, 2014 (Easter Break)
Tuesday, April 8, 2014 (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!!☺

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 2013-2014 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.

Accomodation

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.

Friday, January 17, 2014 marks Benjamin Franklin's 308th birthday!