

EE468G: Introduction to Engineering Electromagnetics (Fall 2011)

<http://www.engr.uky.edu/~cclu/ee468.html>

	Instructor	Teaching Assistant
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Office Hours	Monday: 1:30-2:30pm Tuesday: 4:pm-5:pm	Tuesday 9:00-11:00am Friday: 1:00-3:00pm

Expected Student Outcomes: A student who has successfully completed this course should be able to:

1. Understand electrostatic, magnetostatic, and electromagnetic fields and their interaction with matter
2. Solve basic canonical electrostatic, magnetostatic, and electromagnetic problems
3. Understand electromagnetic wave propagation
4. Solve for the reflection and transmission of uniform plane waves at infinite planar interfaces
5. Evaluate transmission line problems including methods for impedance matching
6. Use commercial mathematics software for computing and visualizing electrostatic, magnetostatic and electromagnetic field problems.

Text: *Elements of Electromagnetics*, 5th Edition, Matthew N. O. Sadiku, Oxford University Press, 2010 (ISBN 978-0-19-538775-9).

Grading Policy: Your grade will be based on:

Homework/Quiz	for 25%
Test #1 (closed book)	for 15%
Test #2 (closed book)	for 15%
Test #3 (closed book)	for 15%
Final Exam (closed book)	for 30%

- The letter grade assignment is based on the following scale: from 100 to 90 pts. => A, from 89 to 80 pts. => B, from 79 to 70 pts => C, from 69 to 60 pts. => D, from 59 to 0 pts. => E.
- Any request for reviewing homework/quiz/test grades must be made by the second class period after the homework is returned to you.
- **Failure to take exams:** Make-up exams will be given in cases where the student contacts the instructor prior to the exam and receives permission to make the test up. There will be no makeup tests except in cases of extreme illness or other officially sanctioned absences from campus.
- Students are responsible for all business conducted during any scheduled class period. Any revision to the test dates, homework assignments, etc. will be made during the class period.
- The detected use of **unethical tactics** on a quiz or test will result in a zero for that quiz or test.
- The lectures will follow the text. Students are expected to read the text and are responsible for all material in the reading assignments.
- Students are expected to use MATLAB or similar software for some homework problems.

**EE468G: Introduction to Engineering Electromagnetics
Course Outline, Fall 2011**

<p>Vector calculus review Charges and currents Electric field intensity Coulomb's law and Gauss' law Electrostatic potential Conductors and Dielectrics, Capacitance and Energy Boundary conditions Boundary value problems</p> <p>Test #1 , Thursday, 15 Sept.</p> <p>Magnetic potential Biot-Savart law Magnetic field: line current Magnetic field: loop Ampere's law Magnetic material Magnetic field boundary condition Farady's law Inductance</p> <p>Test #2, Thursday, 13 Oct.</p>	<p>Time varying fields, phasors Maxwell's equations Uniform plane waves in free-space UPW in dielectrics UPW in conductors UPW normal incidence on conductor interface UPW normal incidence on dielectrics UPW oblique incidence on planar interface Introduction to Radiation</p> <p>Test #3, Thursday, 10 Nov.</p> <p>Voltage and current on transmission lines Transmission line equation Transients on transmission line Source and load on transmission line Time-harmonic waves on transmission line Reflection coefficients and VSWR Smith chart Impedance matching Stub tuning Introduction to antennas</p> <p>Final Exam: 10:30-12:30, Tuesday, 13 Dec, 2011</p>
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