Course title and number: ECEN 322: Electric and Magnetic Fields
Section 501
Term: Summer 2017 Germany
Meeting times and location: TBA
Texas A&M/RWTH Aachen
Credit: 3

Course Description and Prerequisites
Vector analysis, Maxwell’s equations, wave propagation in unbounded regions, reflection and refraction of waves, transmission line theory; introduction to waveguides and antennas.
Course Prerequisites: ECEN 214, PHYS 208, and junior or senior classification.

Learning Outcomes or Course Objectives
The learning outcomes include the following ABET Criteria (A, E, and K):
- an ability to apply knowledge of mathematics, science, and engineering
- an ability to identify, formulate, and solve engineering problems
- an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Instructor Information
Name: Prof. Ulisses Braga-Neto, ECE Department
Telephone: TBA
Email address: ulisses@ece.tamu.edu

Textbook and/or Resource Material
13 digit ISBN: 978-0133356816

Grading Policies
Grading will be based on homework and quizzes. Reading assignments will not be made; you are expected to study the book topics as appropriate. The dates indicated for the material are approximate; some modifications will be inevitable.

Quizzes: 50%
Homework: 40%
Cultural Exchange Reflection Essay: 10%

100%

Grading Scale (out of 100): A: 90-100; B: 80-89; C: 70-79; D: 60-69; F: 59 or lower
Homework

Homework will be assigned weekly and graded. Solutions will be provided. The quizzes will be mostly based on problems that will be assigned as homework.

Course Topics, Calendar of Activities, Major Assignment Dates

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic (tentative, subject to change)</th>
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<tbody>
<tr>
<td>1. Week of Jul 3</td>
<td>Introduction; Transmission lines in sinusoidal steady-state and transient</td>
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<td>regimens; Smith chart and load matching.</td>
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<td>2. Week of Jul 10</td>
<td>Review of vector calculus; Maxwell’s equations.</td>
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<tr>
<td>4. Week of Jul 17</td>
<td>Plane wave propagation; Reflection and refraction; Snell’s laws.</td>
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<tr>
<td>5. Week of Jul 24</td>
<td>Potentials, Hertzian dipole; Antenna parameters, half-wave dipole.</td>
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Academic Integrity

"An Aggie does not lie, cheat, or steal, or tolerate those who do.”

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