Instructor: Dr Magda El-Shenawee

Email: magda@uark.edu

Office hours: MWF 2:30-3:30pm


Grading Policy
Mid Term Exam 30 points (in class)
Project I 35 (25 solution + 10 presentation in class using power point)
Final Project II 35 (25 solution + 10 presentation in class using power point)

A: 90-100 %, B: 80-89 %, C: 70-79 %, D: 60-69 %, F: 0-59 %

Attendance
Attendance is expected from all students

Mid Term Exam
No make up exams unless it is an emergency.

Project Deadlines
Project deadlines are very strict.
<table>
<thead>
<tr>
<th>Lecture</th>
<th>Topic</th>
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<tr>
<td><strong>Review Topics</strong></td>
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<tr>
<td>• Dynamic Maxwell’s equations</td>
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<td>• Plane wave propagation</td>
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<tr>
<td><strong>Topic 1 (Chapter 6): Wave Reflection and Transmission at Plane Boundaries</strong></td>
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<tr>
<td>• Review of Maxwell Equations and Boundary Conditions</td>
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<td>• Boundary Value Problems</td>
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<td>• Reflection from Plane conductor at normal incidence</td>
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<td>• Two Region reflection and Transmission</td>
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<td>• Normal Incidence for more than two regions</td>
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<tr>
<td>• Solution using reflection coefficient and wave impedance</td>
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<td>• Reflection and Transmission at Oblique Incidence</td>
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<td><strong>Topic 2 (Chapter 7): The Poynting Theorem and Electromagnetic Power</strong></td>
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<tr>
<td>• The Theorem of Poynting</td>
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<td>• Time Average Poynting Vector and Power</td>
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<tr>
<td><strong>Mid Term Exam (open book)</strong></td>
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<td><strong>Topic 3 (Chapter 8): Mode Theory of Waveguides</strong></td>
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<tr>
<td>• Maxwell’s relations when fields have exp(jωt) dependence</td>
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<tr>
<td>• TE, TM and TEM mode relationships</td>
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<tr>
<td>• TM mode solutions of rectangular waveguides</td>
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<tr>
<td>• TE mode solution of rectangular waveguides</td>
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<td>• Dispersion in hollow waveguides</td>
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<td>• Wall loss attenuation in hollow waveguides</td>
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<td><strong>Project I (to cover Topics 1-3)</strong></td>
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<td><strong>Topic 4 (Open Subject): Introduction to Computational EM</strong></td>
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<tr>
<td>Papers &amp; external book chapters will be needed based on the Instructor’s guidance</td>
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<tr>
<td><strong>FINAL PROJECT II (to cover Topic 4)</strong></td>
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