COURSE OUTLINE
ELEC 340 – Electromagnetic Field Theory
Spring 2014

Instructor
Dr. Poman So
Phone: 250-472-4224
E-mail: Poman.So@UVic.CA

Office Hours
Days: Tuesday & Wednesday
Time: 2:00 PM to 3:00 PM
Location: EOW 417

Lectures
A-Section(s): A01 / CRN 21088
A02 / CRN 21089
Days: Tue, Wed & Fri
Time: 12:30 PM – 1:20 PM
Location: ELL 167

B-Section(s)
B01: 21090 Mon 12:00–14:50
B02: 21091 Mon 12:00–14:50
B03: 21092 Tue 13:30–16:20
B04: 20093 Tue 13:30–16:20
B05: 21094 Wed 16:30–19:20
B06: 21095 Wed 16:30–19:20
B08: 21097 Fri 13:30–16:20

Location: ELW A309

Required Text
Author: Fawwaz T. Ulaby, Eric Michielssen, Umberto Ravaioli
Publisher: Pearson / Prentice Hall
Year: 2010

References
Title: Engineering Electromagnetics, 7ed
Author: W.H. Hayt, J.A. Buck
Publisher: McGraw-Hill
Year: 2006

Assessment
Quizzes: 10%
Labs*1 20%
Mid-term*2 10% Closed book, no calculator Date: Feb 21, 2014
Final*2 60% Closed book, no calculator

*Note
1. Failure to complete all laboratory requirements will result in a grade of N being awarded for
the course.
2. Must attend all labs and at least 80% of the lectures in order to qualify to write the midterm
and final examinations (http://web.uvic.ca/calendar2013/FACS/UnIn/UARe/Atte.html)
3. Failure to pass the final examination will result in a grade of E or lower being awarded for
the course.
4. Plagiarism detection software may be used to aid the instructor and/or TA's in the review
and grading of some or all of the work you submit (http://library.uvic.ca/instruction/cite/plagiarism.html).

Due Dates for Assignments and Lab Reports
- Assignments: One week after each assignment is handed out. Late assignments are not
  accepted.
- Lab Reports: One week after each lab is performed. One report per group (of two persons,
  max); late reports are subjected to 25% penalty per day.
Final Grade

The final grade obtained from the above marking scheme will be based on the following percentage-to-grade point conversion:

<table>
<thead>
<tr>
<th>Grades</th>
<th>Grade Point Value</th>
<th>Percentage for Instructor Use Only</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>9</td>
<td>90 – 100</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>8</td>
<td>85 – 89</td>
<td></td>
</tr>
<tr>
<td>A–</td>
<td>7</td>
<td>80 – 84</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>6</td>
<td>77 – 79</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>73 – 76</td>
<td></td>
</tr>
<tr>
<td>B–</td>
<td>4</td>
<td>70 – 72</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>3</td>
<td>65 – 69</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>60 – 64</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>50 – 59</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>0</td>
<td>35 – 49</td>
<td>Fail, conditional supplemental exam. (For undergraduate courses only)</td>
</tr>
<tr>
<td>F</td>
<td>0</td>
<td>0 – 34</td>
<td>Fail, no supplemental exam.</td>
</tr>
<tr>
<td>N</td>
<td>0</td>
<td>0 – 49</td>
<td>Did not write examination, lab or otherwise completed course requirements by the end of the term or session; no supplemental exam.</td>
</tr>
</tbody>
</table>

The rules for supplemental examinations are found on page 80 of the current 2013/14 Undergraduate Calendar.

<table>
<thead>
<tr>
<th>Term in which E Grade was obtained:</th>
<th>Application Deadline for Supplemental Exam</th>
<th>Supplemental Exam Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>First term of Winter Session (Sept – Dec)</td>
<td>Following February 28</td>
<td>First week of following May</td>
</tr>
<tr>
<td>Second term of Winter Session (Jan – Apr)</td>
<td>Following June 30</td>
<td>First week of following September</td>
</tr>
<tr>
<td>Summer Session (May – Aug)</td>
<td>Following October 31</td>
<td>First week of following January</td>
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</table>

Deferred exams will normally be written at the start of the student’s next academic term; i.e., approximately 4 months following the deferral of the exam.

Course Description

1. **Course Objectives:** Study electromagnetic field theory and its applications in engineering electrodynamics.

2. **Learning Outcomes:** Upon completion of this course students should be able to:
   a. Describe mathematically the electric and magnetic fields of EM waves.
   b. Characterize wave propagation and relate the propagation parameters of a wave to the constitutive parameters of the medium.
   c. Calculate the rate of power carried by an EM wave in both lossless and lossy media.
   d. Determine the behaviour of resonant modes inside a rectangular cavity.
   e. Design electromagnetic structures for polarization of electromagnetic waves.
   f. Design electromagnetic structures to optimize transmission behavior of plane-waves incident upon plane boundaries, for both normal and oblique incidence.

Note to Students
Students who have issues with the conduct of the course should discuss them with the instructor first. If these discussions do not resolve the issue, then students should feel free to contact the ECE Chair by email or the ECE Chair's secretary to set up an appointment.

Accommodation of Religious Observance
See http://web.uvic.ca/calendar2013/GI/GUPo.html

Policy on Inclusivity and Diversity
See http://web.uvic.ca/calendar2013/GI/GUPo.html

Standards of Professional Behaviour
You are advised to read the Faculty of Engineering document Standards for Professional Behaviour at http://www.uvic.ca/engineering/assets/docs/professional-behaviour.pdf which contains important information regarding conduct in courses, labs, and in the general use of facilities.

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult http://web.uvic.ca/calendar2013/FACS/UnIn/UARe/PoAcI.html for the UVic policy on academic integrity.

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