UNIVERSITY OF TORONTO

ECE 463 - Introduction to Electric Drives - Winter 2017

Instructor: Prof. P. Lehn  
Office: SF 1021 J  
E-mail: lehn@ecf.utoronto.ca

Text:  
1. Electric Machinery by A.E. Fitzgerald (2 chapters)  
   Available in library or from ECE314/349  
2. Course Notes

Office Hours: Due to no commonly available time slot for all students, please approach me after lecture to arrange a meeting or set a meeting time via e-mail.

Mark Assignment:  
<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam</td>
<td>55%</td>
</tr>
<tr>
<td>Test</td>
<td>25%</td>
</tr>
<tr>
<td>Labs</td>
<td>15%</td>
</tr>
<tr>
<td>Assignments</td>
<td>5%</td>
</tr>
</tbody>
</table>

Final Exam:  
- Type B exam.  
- non-programmable calculator permitted  
- a common aid sheet will be made available to all students

Tests:  
- 1 test  
- non-programmable calculator permitted  
- a common aid sheet will be made available to all students

Labs:  
❖ start at on the hour at 9:10 or 12:10 sharp, arrive on the hour if possible  
❖ lab reports due in at the end of the lab

Lab Marks:  
preparation 5% MUST be submitted by 9.15/12.15 during lab session or marks will be deducted  
professionalism 5% individual mark based on:  
- your ability to efficiently set up your lab hardware to provide a safe working environment  
- your contribution & interaction with group members  
- your systematic engineering approach to executing the lab  
lab report 5% May be brief, but must be clear, neat and orderly  
If TA can’t understand what’s written, it won’t be marked

Assignments: 2 assignments

Course Website: Available through Blackboard
Time Table and Locations

**Lectures:**
- Monday 16:00 BA1210
- Tuesday 17:00 BA1210
- Thursday 16:00 BA1210

**Tutorials:**
- TUT101 Wednesday 11:00 WB119 (see schedule)
- TUT102 Monday 17:00 BA1240 (see schedule)

**Labs:**
- PRA 101 Tuesday 12:00 GB040 (see schedule)
- PRA 102 Tuesday 12:00 GB040 (see schedule)
- PRA 104 Monday 9:00 GB040 (see schedule)

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**Lab and Tutorial Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Lab PRA 101</th>
<th>Lab PRA 102/104</th>
<th>Tutorial (1 HOUR)</th>
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</thead>
<tbody>
<tr>
<td>Jan 9 – 13</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Jan 16 – 20</td>
<td>-</td>
<td>Lab Safety/Sign-up</td>
<td>Torque Production</td>
</tr>
<tr>
<td>Jan 23 – 27</td>
<td>Lab Safety/Sign-up</td>
<td>-</td>
<td>DCM operation &amp; lab preparation</td>
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<tr>
<td>Jan 30 – Feb 3</td>
<td>-</td>
<td>DC machine 1</td>
<td>DCM by conservation of energy vs. power balance</td>
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<tr>
<td>Feb 6 – 10</td>
<td>DC machine 1</td>
<td>-</td>
<td>Detailed DCM analysis</td>
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<tr>
<td>Feb 13 – 17</td>
<td>-</td>
<td>DC machine 2</td>
<td>Intro to space vectors</td>
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<tr>
<td>Feb 20 – 24</td>
<td>READING</td>
<td>WEEK</td>
<td></td>
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<tr>
<td>Feb 28 – Mar 3</td>
<td>DC machine 2</td>
<td>-</td>
<td>PM-SM operation &amp; lab prep</td>
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<tr>
<td>Mar 6 – 9</td>
<td>-</td>
<td>PM SM</td>
<td>Detailed PM-SM analysis</td>
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<tr>
<td>Mar 13 – 17</td>
<td>PM SM</td>
<td>-</td>
<td>IM lab prep</td>
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<tr>
<td>Mar 20 – 24</td>
<td>-</td>
<td>Induction Machine 1</td>
<td>IM operation</td>
</tr>
<tr>
<td>Mar 27 – 31</td>
<td>Induction Machine 1</td>
<td>-</td>
<td>Detailed IM analysis</td>
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<tr>
<td>April 3 – 7</td>
<td>-</td>
<td>Induction Machine 2</td>
<td>AC Machine Review</td>
</tr>
<tr>
<td>April 10 – 13</td>
<td>Induction Machine 2</td>
<td>-</td>
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**Tentative Test Schedule**

Date: Week of Feb. 14  
Time: 18.30 – 20.00 *  
Location: TBA

*Midterm schedule to be confirmed.*