Course Name Number (ELEC 370) – Electromechanical Energy Conversion

Term – Fall 2016 (201609)

Instructor
Dr. Ashoka K.S. Bhat
Phone: 250-721-8682
E-mail: abhat@engr.uvic.ca

Office Hours
Days: Monday
Time: 2:00 to 3:00 PM
Location: EOW413

Course Objectives
- To introduce students to the principles of electromechanical energy conversion, transformers and electric machines.

Learning Outcomes
You will learn:
- Basic principles of magnetic circuits, how to draw equivalent circuits and how to analyze them to calculate different parameters like flux, energy density, etc.
- The basic principles of operation and construction details of transformers and dc machines (as a generator and a motor); their equivalent circuits and their use in calculating performance parameters such as regulation and efficiency.
- The basic principles of operation and construction details of induction motors and synchronous machines (as a generator and as a motor); their equivalent circuits and their use in calculating performance parameters such as regulation and efficiency.
- Speed-torque characteristics of dc motors and induction motors and how to control their speed.

Syllabus (Approximate number of lectures)
Magnetic Circuits (5 lectures)  
Transformers (8 lectures)  
DC Machines (8 lectures)  
Induction Motors (7 lectures)  
Synchronous Machines (4 lectures)  
Electromechanical Energy Conversion Principles (2 lectures)  
Stepper Motor and Brushless DC Machines (1 lecture)  
Introduction to Electric Drives (1 lecture)

A-Section(s): A01 / CRN 11265  
A02 / CRN 11266  
Days: Tuesday, Wednesday, Friday  
Time: 12:30 – 13:20  
Location: ELL167

Lab TAs:
B01 & B02: Manouchehrinia, Babak (bmn14@uvic.ca)  
B03: Gahrha, Harmanpreet Singh, (harman26@uvic.ca)  
B04 and B05: Tayebi, Parniyan (parniyan_tayebi@yahoo.com)  
B06: Mohammadalizadeh, Parisa (Parisa.alizadeh2020@yahoo.com)
B07: Jooshesh, Afshin (jooshesh@uvic.ca)
B08 – Omar, Abdussalam (aaomar@uvic.ca)
B09 – Alimohammadi Helaleh (halimoha@uvic.ca)

Marker TAs:
Wilson, Preethy (preethy.wils@gmail.com), Zhou, Jun (zhoujun0323@gmail.com), Rezvanifar, Alireza (arezvani@uvic.ca)

Required Text
2. A.K.S. Bhat, ELEC370 Course Notes, 2016: http://www.ece.uvic.ca/~bhat (will be available on the web during the semester).

References:

Assessment:

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<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Due Dates</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>5%</td>
<td>As the course progresses (5 assignments)</td>
</tr>
<tr>
<td>Labs</td>
<td>23%</td>
<td></td>
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<tr>
<td>Mid-term</td>
<td>22%</td>
<td>Date: October 14</td>
</tr>
<tr>
<td>Final Exam</td>
<td>50%</td>
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Note: Failure to complete all laboratory requirements will result in a grade of N being awarded for the course.

The final grade obtained from the above marking scheme for the purpose of GPA calculation will be based on the percentage-to-grade point conversion table as listed in the current Undergraduate Calendar.

There will be no supplemental examination for this course.

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 Chair of the Department by email or the Chair's Secretary to set up an appointment.

Accommodation of Religious Observance
http://web.uvic.ca/calendar2016-09/general/policies.html

Policy on Inclusivity and Diversity
http://web.uvic.ca/calendar2016-09/general/policies.html

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

Cheating, plagiarism and other forms of academic fraud are taken very seriously by both the University and the Department. You should consult the entry in the current Undergraduate Calendar for the UVic policy on academic integrity.

http://web.uvic.ca/calendar2016-09/undergrad/info/regulations/academic-integrity.html

Course Lecture Notes

Unless otherwise noted, all course materials supplied to students in this course have been prepared by the instructor and are intended for use in this course only. These materials are NOT to be re-circulated digitally, whether by email or by uploading or copying to websites, or to others not enrolled in this course. Violation of this policy may in some cases constitute a breach of academic integrity as defined in the UVic Calendar.