ECE 420 Power Laboratory

Spring 2014

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Meetings

Thursday 11:30-2:20, and 3:00-5:50.

Prerequisites

ECE 320 or concurrently

Materials

ECE 420 Lab Manual

Safety Glasses

References

- ECE 320 Class Notes
- Basic Principles of Power Electronics, by K. Heumann, Springer Verlag 1985,

Prelab

Prelab will be assigned every week and it will be a significant factor in determining your grade for the course. Prelab will be structured to help you complete the related lab experiment, so completing it in time and with full understanding will greatly increase you chance of doing well in the lab experiment. There will be a quiz on the prelab before every experiment.
Lab Reports

All materials turned in for grading should be clean, legible and self-explanatory. Lab reports should show your results, but also the procedure of the experiment including list of the equipment used, schematics and drawings. Students with similar background to yours should be able to reproduce your results just by following your lab report. The good lab report should include following five parts:

1. **Objective**
   Use this section to explain what you hoped to accomplish when you started the experiment. This should be in your own words; copying from the manual is not acceptable.

2. **Background**
   This section should include your discussion on how the theory applies to the experiment.

3. **Experiment Procedure and Equipment**
   Explain in detail what you did and which steps you took in doing it. What equipment did you use? Include schematics and drawings to supplement and support your explanations. Also comment on one thing you did that was not in the notes; what did you hope to accomplish and how did it work?

4. **Results and Analysis**
   Provide the results of your experiment; numerical and graphical and explain what they mean. Do the results match the theory? If not, why? Are there any errors and why? Explain your plots by labeling the points of interest and commenting on them. All the graphs should be clear and self-explanatory (i.e. with clear labels of axes and units).

5. **Conclusion**
   Brief comment of the overall experiment, what was accomplished and what could be done differently.

Grading

The grade for the course will be a function of the following:

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<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Prelab</td>
<td>30%</td>
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<tr>
<td>Lab Reports</td>
<td>40%</td>
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<tr>
<td>Experiment &amp; Participation**</td>
<td>30%</td>
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** This will be based on your participation, knowledge and initiative but also on your ability to safely perform given experiment. Safety is very important and it will be emphasized in this course. If you do something unsafe during the experiment, you will automatically receive grade zero for the participation portion of that experiment.
Attendance

Attendance for this class is mandatory. There will be a short lecture and a prelab quiz at the beginning of every lab session, so you will have to be on time. Being up to 5 minutes late is usually not a problem, but anything beyond that should be prearranged, or have a valid excuse. In this case the arrangements can be made for the make up time.

Policies

Article 2.3.3 of the Academic Freedom Report states that the student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards. In addition, the Department of Electrical and Computer Engineering adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades, and in the All-University Policy on Integrity of Scholarship and Grades, which are included in Spartan Life; Student Handbook and Resource Guide.

Other

If you have any questions regarding this syllabus or course in general, please address them with the instructor and supervisor in person or via email.