Syllabus for ECE 464, Power Electronics
Fall Semester, 2016

Instructor: Prof. Robert Pilawa-Podgurski, pilawa@illinois.edu, 244-0181
Instructor Office Hours: Room 4042 ECE Building, Wednesdays 10-11 am, or by appointment
Course Secretary: Robin Smith, rsmith@illinois.edu, 333-6592
Course TA 1: Pourya Assem, office hours Wednesdays, 5-7 pm
Course TA 2: Shibin Qin, office hours Tuesdays, 3:30-5 pm
Lectures: TR 14:00-15:20, 2017 ECE Building
Course Website: http://courses.engr.illinois.edu/ece464
Prerequisite: Electronic Circuits (ECE 442/342)

Purpose: To learn fundamentals of electronics for electrical energy processing, and applications to renewable and alternative energy.

Course Structure:
Part One
   Energy conversion and the future, switch circuit analysis, measures of quality, basic dc-dc converters

Part Two
   Advanced dc-dc converters, rectifiers, inverters, and applications

Part Three
   Real sources and loads, passive components, control of converters

Exams: Exam 1 is tentatively scheduled for Thursday, September 29th, at 7:30 pm. Exam 2 is tentatively scheduled for Thursday, November 3rd, at 7:30 pm. The final exam is tentatively scheduled for Friday, December 9th, and will include all material of the course. For exam 1, you are allowed one sheet of notes. For exam 2, you are allowed two sheets of notes. For exam 3, you are allowed three sheets of notes. No calculators are allowed (or needed).

Written Assignments: Written assignments are due on Fridays as you enter class. Late work is subject to a penalty of 10% per day, except that assignments turned in after the solution is posted will not receive credit. The lowest score on one homework will be dropped from your homework grade.

Grading:
Grading is on an absolute scale. You are compared against a performance standard, not to other students. Weightings are as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeworks, other assignments, class participation</td>
<td>20%</td>
</tr>
<tr>
<td>Test #1</td>
<td>25%</td>
</tr>
<tr>
<td>Test #2</td>
<td>25%</td>
</tr>
<tr>
<td>Final Examination</td>
<td>30%</td>
</tr>
</tbody>
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The plus and minus system will be used, and grades are assigned on an absolute scale as follows:
A 88% and up (A- 88-90%)
B 78% to 87% (B + 85-87%, B- 78-80%)
C 67% to 77% (C+ 75-77%, C- 67-69%)
D 55% to 66% (D + 64-66%, D- 55-57%)

I reserve the right to adjust these numbers downward (in students' favor) but they are guaranteed maximums and will not be raised.