Syllabus for ECE 464, Power Electronics
Fall Semester, 2017

Instructor: Prof. Arijit Banerjee, arijit@illinois.edu
Instructor Office Hours: Room 4064 ECE Building, Wednesdays 10-11 am, or by appointment
Course Secretary: Robin Smith, rsmith@illinois.edu
Course TA 1: Yizhe Zhang, Wednesdays 3:30-5:30 pm, Room 4036 ECE Building
Course TA 2: Leslie Cheng, Wednesdays 1:30-3:30 pm, Room 4036 ECE Building
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 scheduled for Friday, October 6th, at 7:00 pm (No time limit). Exam 2 is scheduled for Friday, November 10th, at 7:00 pm (No time limit). The final exam is tentatively scheduled for Friday, December 15th, 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 Thursdays 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:

Homeworks, other assignments, class participation: 20%
Test #1 25%
Test #2 25%
Final Examination 30%

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 student’s favor) but they are guaranteed maximums and will not be raised.