

Virginia Tech ECE 3254 – Fall 2009
Industrial Electronic Laboratory

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Course Material: All laboratory materials will be available at
<http://www.ece.vt.edu/ece3254>

I. Lab Objectives:

- To gain practical understanding of circuit theory concepts.
- To become familiar with basic laboratory equipment.
- To enhance effective communication and teamwork skills.

II. Grading

Grades will be divided as follows:

Pre-Lab reports	45%
Lab Report	30%
Lab Practical	15%
Quizzes	10%

III. Notebooks

Students are encouraged to keep a lab notebook for notes. Explanations given in the beginning of the lab can be useful in writing the lab report.

IV. Pre-Labs

Each student is required to complete and turn in the pre-lab at the beginning of the lab. Failure to turn in the pre-lab will result in a “0” grade for that particular pre-lab. Late pre-labs will not be accepted without prior approval. Some pre-labs are lengthy, so do not wait until the last minute to start the pre-labs. The Pspice simulations must be completed and printed as part of the prelab.

V. Lab Reports

Each lab report must be completed in the lab during the scheduled lab period. Missing a scheduled lab without prior approval will result in a 10% penalty per day for that particular lab.

VI. Honor Code

The Honor Code will be enforced in this class. Discussion of topics with other people in the class is fine, but all submitted work should be your own.

VII. Outline of Labs

Week 1 - Lab Orientation

Week 2 - Lab 1: Pspice introduction

Week 3 - Lab 2: Resistors, Oscilloscope, Function Generator, Measurements

Week 4 - Lab 3: Thevenin Equivalent

Week 5 - Lab 4: Passive Filter Frequency Response

Week 6 - Lab 5: Diode characteristics and rectifier circuits

Week 7 - Lab 6: Zener Diode circuits and applications

Week 8 - Lab 7: NPN transistor circuit analysis

Week 9 - Lab 8: OpAmp Amplifier circuits

Week 10 - Lab 9: OpAmp limitations

Week 11 - Lab 10: OpAmp active filters

Week 12 - Lab 11: Digital logic

Week 13 - Lab practical exam