**ECE 3090 – Electrical Engineering Laboratory I**

**Clemson University – Fall 2013**

**Monday 10 AM – 12 PM**

**Section 1**

**Instructor:**

Name: Neelima Dahal

Email: ndahal@g.clemson.edu

Office: If you need to meet, please email me. We will find a place and time!

**Lab Coordinator:**

Name: Dr. Timothy Burg

Email: tburg@clemson.edu

Office: 307 Fluor Daniel (EIB)

Phone: 864-656-1368

**Text (required):**

Download from: <http://www.clemson.edu/ces/ece/resources/lab_manuals.html>

This laboratory course is companion to the lecture course, ECE 3070 - Basic Electrical Engineering. Several ECE 3090 labs require the knowledge of theory developed in ECE 3070, whereas the labs assist in understanding ECE 3070 concepts.

**Objectives**

1. To gain proficiency in the proper use of common measuring instruments.
2. To learn about lab safety.
3. To develop communication skills through:
4. Maintenance of lab notebooks containing clear and concise descriptions of procedures, results, and analyses
5. Verbal interchanges with lab partners, other students, and instructor, and
6. Preparation of lab reports
7. To learn to compare theoretical predictions with experimental observations and to resolve and explain any apparent deviations and differences.

**Co-requisites**

ECE 3070

**Grading:**

60% Participation

30% Lab Reports (3)

10% Final Exam

The three lab reports will be assigned in class. The due dates for the lab reports will be set when assigned.

Tentative Grade Scale:

A: 90% – 100%

B: 80% – 90%

C: 70% - 80%

D: 60% - 70%

F: <60%

**Attendance:**

Attendance is mandatory. If you must miss a lab due to special circumstances, please try attending a different section of the lab to make up for the missed lab. If you cannot do so due to course conflicts then let me know. You will receive a score of 0 for any missed labs.

**Instructor Absence:**

If I am late to the class by 15 minutes, you are free to leave.

**Academic Integrity:**

*“As members of the Clemson University community, we have inherited Thomas Green Clemson’s vision of this institution as a high seminary of learning. Fundamental to this vision is a mutual commitment to truthfulness, honor, and responsibility, without which we cannot earn the trust and respect of others. Furthermore, we recognize that academic dishonesty detracts from the value of a Clemson degree. Therefore, we shall not tolerate lying, cheating, or stealing in any form.”*

*“When, in the opinion of a faculty member, there is evidence that a student has committed an act of academic dishonesty, the faculty member shall make a formal written charge of academic dishonesty, including a description of the misconduct, to the Associate Dean for Curriculum in the Office of Undergraduate Studies. At the same time, the faculty member may, but is not required to, inform each involved student privately of the nature of the alleged charge.”*

**Note:** The instructor reserves the right to modify the syllabus as needed. Students will be notified prior to any changes.

**Lab Report:**

Labs 2, 4 and 8 require lab reports. We will discuss about the format and due dates when the reports are assigned.

**Tentative Schedule:**

Lab# Week beginning Description

1 Sep 2 Laboratory #1: *Course Description and Introduction*

2 Sep 9 Laboratory #2: *Measurement of DC Voltage and Current (Report)*

3 Sep 16 Laboratory #3: *Computer Analysis*

4 Sep 23 Laboratory #4: *Instrument Characteristics (Report)*

5 Sep 30 Laboratory #5: *Oscilloscope*

6 Mar 1 Laboratory #6: *Problems: Circuit Analysis Methods*

7 Oct 7 Laboratory #7: *Network Theorems*

8 Oct 21 Laboratory #8: *Problems: Phasors (Report)*

9 Oct 28 Laboratory #9: *Problems: AC Power Calculations*

10 Nov 4 Laboratory #10: *AC Measurements*

11 Nov 11 Laboratory #11: *Problems: Operational Amplifiers and Digital Logic*

12 Nov 18 Laboratory #12: *Digital Logic Circuits*

12 Nov 25 Final Exam

\*Note: No lab the week of the Jan \*\* due to Martin Luther King Jr day

\*Note: No lab the week of the Nov \*\* due to Fall Break

\*Note: No lab the week of the Oct \*\* due to Thanksgiving Holiday