ELEC 313 Electronics Laboratory

Course Syllabus, Fall 2013

Prerequisites: ELEC 206

Corequisites: ELEC 306

Course description: Experimental studies coordinated with the subjects introduced in ELEC 306 (*Electronics I*).

Instructor: Dr. Gregory J. Mazzaro, Grimsley Hall Room 312
phone: 843-953-0429, e-mail: gmazzaro@citadel.edu
office hours: MW 16:00-17:00, TR 13:30-17:00 (and by appointment)

Class Schedule:

Section 81:	M	20:15-22:15	GRIMS 311
Section 82:	W	20:15-22:15	GRIMS 311

Textbook: Written material and assignments will be available on the course website.

Course webpage: http://ece.citadel.edu/mazzaro ("ELEC 313")

Skills to be developed:

(1) DC characterization of diodes
(2) DC characterization of transistors
(3) Design and measurement of op-amp circuits
(4) AC measurements using voltmeters and oscilloscopes
(5) Frequency response measurements
(6) Preparation of lucid, succinct technical reports
(7) Working as part of a technical team

Grading policy:

Pre-lab exercises	20%
Lab notebook	10%
Lab reports	60%
Lab practical	10%

Grade breakpoints:

$90\% \le A < 100\%$	$70\% \le C < 80\%$	$F < 60\%$
$80\% \le B < 90\%$	$60\% \le D < 70\%$	

Course policies:

Attendance: A student missing a lab must work out a time with the instructor to make it up. Missing more than 2 labs will result in a failing grade in the course.

Lab teams: The students will be divided into teams of two to three individuals. The lab work, lab notebook, and technical reports are the responsibility of all team members.

Course website: Assignments and course announcements will be distributed to the class via the course website. It is the responsibility of each student to check this website regularly.

Lab decorum: Each lab team member is expected to earnestly participate in each experiment. Students must respect the lab equipment and clean their lab bench by properly stowing all wires and components after each experiment. Food and drink are not permitted at any time in the laboratories nor any other classroom or hallway of Grimsley Hall. Each student must understand and follow all safety instructions. Horseplay is strictly prohibited at all times and could result in the removal of students from the course. All potentially hazardous situations must be reported to the instructor.

Accommodations for learning disabilities: Upon receipt of a bona fide letter from the Office of Access Services, Instruction, and Support (OASIS), appropriate accommodations will be made for learning disabilities. However, nothing can be done retroactively.

Lab Notebooks: Each lab team will keep a handwritten lab notebook in accordance with the prescribed format. The lab notebooks should be available at each lab meeting.

Lab reports: Lab reports shall follow the prescribed format and be the printed output of a word processor. Lab reports should be submitted at the *beginning* of the lab period on the day they are due.

Lab practical: At the end of the course, each student will demonstrate individually to the instructor the ability to construct circuits from a schematic diagram, to operate the test equipment, and to take and interpret data. This lab practical examination will take place during the last regular class period and will be given in lieu of a final examination.

Course outline:

Week	**(Mon)**	**(Wed)**	**Due at start of class**	**Activity**
1	26-Aug	28-Aug		Lab orientation
2	2-Sept	4-Sept		(no lab)
3	9-Sept	11-Sept	Pre-lab #1	Lab #1, Amplifier models
4	16-Sept	18-Sept	Pre-lab #2, Report #1	Lab #2, Diode characterization
5	23-Sept	25-Sept	Pre-lab #3, Report #2	Lab #3, Diode circuits
6	30-Sept	2-Oct	Report #3	Lab #4a, DC Motor Driver Kit
7	7-Oct	9-Oct	(completion of Lab #4a)	Lab #4b, DC Motor Driver Lab
8	14-Oct	16-Oct	Pre-lab #5, Report #4	Lab #5, CMOS circuits
9	21-Oct	23-Oct		(no lab – office hours instead)
10	28-Oct	30-Oct	Pre-lab #6, Report #5	Lab #6, MOSFET characterization
11	4-Nov	6-Nov	Pre-lab #7, Report #6	Lab #7, MOSFET amplifier configurations
12	11-Nov	13-Nov	Pre-lab #8, Report #7	Lab #8, BJT characterization
13	18-Nov	20-Nov	Pre-lab #9, Report #8	Lab #9, Common-emitter transistor amplifier
14	25-Nov	27-Nov		(no lab)
15		4-Dec	Notebooks, Report #9	Lab practical
16	9-Dec			