King Fahd University of Petroleum & Minerals

Electrical Engineering Department

EE 212: Electrical Circuits Laboratory (0-3-1)

Fall Semester 151 (2015)

Course Topics: The course consists of a set of laboratory experiments for students to gain hands-on experience in electrical circuits so that they are able to put theoretical concepts into practice. The experiments are designed to help students understand the basic principles of electric circuits as well as giving them insight on design, simulation and hardware implementation of circuits.

Corequisite: EE 202

Textbook: Lab Manual

Grade Distribution:

Item	%	Notes
Quizzes	**21**	3 Quizzes
Reports	**24**	Report (1 student or **2 students maximum per report**)
Midterm Test	**20**	Exp2 till Exp7 (Experimental)
Final Exam	**35**	During week 15 (Experimental & Theoretical)

1. **EE Department Late/Attendance Policy:**

   - At least **-2.5 point** for each unexcused absence & **-0.5 point** for every 5 minutes late should be deducted out of the student final grade.
   - 2 absences (excused or non-excused) : **Official Warning**
   - 3 absences (unexcused): **DN**
   - 4 absences (excused or non-excused) : **DN**

2. **EE Department Copying/Cheating Policy:**

   - First time the student will get a zero at the report/quiz/pre-lab/post lab/project & 2 points will be deducted from his final grade. In addition, the instructor should report the student to the department and the department will issue the student an official warning.
   - Second time the student will get zero out of 20 at the lab & will be reported to the students' affairs.
   - Lab final exam cheating will result in an F grade.

Lab Breakdown

Week #	Date	Activity
1	23-27 Aug	**No Lab**
2	30Aug-3 Sep	Exp1: Electric Circuits Simulation Using Multisim
3	6-10 Sep	Exp2: Electric Circuit Fundamentals
4	13-17 Sep	Exp3: Resistors in Series, Color Codes & Power Rating (**Quiz1: 5% and Multisim based**)
5	29 Sep-1 Oct	**No Lab**
6	4-8 Oct	Exp4: Kirchhoff's Law
7	11-15 Oct	Exp5: Series & Parallel Circuits, Voltage Divider & Current Divider Rules
8	18-22 Oct	Exp6: Superposition Theorem
9	25-29 Oct	Exp7: Thevenin's Theorem and Maximum Power Transfer (**Quiz2: 7% and Experimental based**)
10	1-5 Nov	**Midterm Test**
11	8-12 Nov	**No Lab**
12	15-19 Nov	Exp8: Transients of a First Order RC Circuit (**Quiz 3: 8% and theoretical based**)
13	22-26 Nov	Exp9: The Oscilloscope and Function Generator
14	29 Nov-3 Dec	Exp10: Sinusoidal AC Analysis
15	6-10 Dec	**Lab Final Exam**

Grade Distribution:

- All lab sections should have the follow the given grade distribution.
- The performance evaluation should be within the lab reports, quizzes & exams. However, the instructor can deduct points from a student final grade (before averaging) if the student is not working during the lab.
- -2.5 point (out of 100) should be deducted for every unexcused absence.
- -0.5 point (out of 100) should be deducted for every 5 minutes late.
- The last thing the instructor should do with the grades is averaging. Thus, all the mark deductions mentioned above should be done **BEFORE** averaging the grades to 75.00.
- Attendance should be taken seriously and the instructor should report any warning or DN grades (within a week) according to the rules mentioned in the Performance Evaluation file sent earlier.
- Instructors should return the corrected pre-labs and reports to the students every week.
- Instructors have to reports copying.
- All pre-labs should be done and submitted individually (No group for pre-labs).
- All MATLAB experiments and simulations reports should be done and submitted individually.
- For the experimental part of the report a maximum of two students are allowed.
- All quizzes and exams should be done individually.
- The instructor should change some parameters at the MATLAB experiments so that the students do not copy from old reports.

Absent	With an Official Excuse	Without an Official Excuse
Attendance Grade	Nothing deducted.	-0.5 point (out of 20) should be deducted.
Quiz (If there is a quiz at that day)	The instructor should give the student a make-up quiz.	The student should get a zero grade at that quiz.
Report (If there is a report from previous experiments to submit at that day)	An extension equal to the number of days mentioned at the official excuse should be given to the student.	The student should get a zero grade at that report unless he managed to submit the report before the deadline (for example by sending the report with another student). *
Report of the experiment that he missed	He should not submit a report for an experiment that he missed. His grade on that experiment should be the average grade of all of his other reports.	The student should get a zero grade.
***In any way the student should not get an extension, make up or an advantage for being absent without an official excuse.**		

Copying and cheating:

- The instructor should be very strict with copying and cheating.
- If a student cheated for the 1st time, the instructor should do the following:
    - Give the student a **ZERO** grade in the corresponding assignment.
    - Deduct 2 points out of 20 from the student final grade (before averaging).
    - Report the student to the department by filling the copying form & by sending an email to the coordinator and the Laboratory Instructional Supervision & Coordination Committee (eelabs@kfupm.edu.sa)
- If the student cheated for the 2nd time, the instructor should do the following:
    - Give the student **ZERO** out of 20 at the lab.
    - Report the student to the department by filling the copying form & by sending an email to the coordinator and the Laboratory Instructional Supervision & Coordination Committee (eelabs@kfupm.edu.sa) then the department will report the case to students' affairs.
- The instructor should not accept the excuse "Working and studying together" for cheating or copying. Especially in simulations (MATLAB, PSPICE, …etc). That is because working on a computer, is done mainly by one person. Also, studying together will result in similar results but not **EXACT** results. Students can share their ideas, problem solving strategy, and explaining to each other the concepts. However, they should **NOT** share the solution and/or code and results.

Computer Simulations:

In the experiments that have simulations or theoretical derivations, the instructors are advised to add small changes to the questions in a way that will not affect the idea behind the question (for example change the parameters, frequencies, …etc) . Also, instructors can add one or two small questions or parts to distinguish the students who did the work by themselves from those who copied.

Performance Evaluation File:

The evaluation list was sent to the instructors before the meeting and the following points were emphasized:

- The instructor should not miss any lab. Also, he should NOT combine experiment in one lab session.
- If the instructor cannot cover his lab for some reason, he can ask some of the other lab instructor to cover for him **AFTER** getting the lab coordinator and the Laboratory Instructional Supervision & Coordination Committee (eelabs@kfupm.edu.sa) approvals. Also, he should get this approval before the week of intended leave by enough time (at least a week for example).
- Instructors should utilize the whole lab period. If the experiment is easy and can be finished early, he can add some related tasks that can help the students to understand the subject better or can use the extra time for quizzes and tests.
- The instructor should not leave before the students and he should switch the main power supply off and close the lab door before he leaves.
- The instructors should take the attendance seriously.
- The correct start and end time should be filled in the log sheets in every experiment.
- Instructors should respond and take appropriate action for any inquiry received from the lab coordinator or from the Laboratory Instructional Supervision & Coordination Committee (eelabs@kfupm.edu.sa).