**King Fahd University of Petroleum & Minerals**

Electrical Engineering Department

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

Fall Semester 151 (2015)

**Course Instructor:** Ibrahim Al-Saihati **Office Location:** Building 7 room 126-4

**email:** [saihati@kfupm.edu.sa](mailto:saihati@kfupm.edu.sa) **Phone Number:** 013-860-2628

**Office Hours:** Sunday 9:00-11:00 & 1:00-2:00

Monday 1:00-2:00 Tuesday: 9:00-10:00

Wednesday 1:00-2:00 (or just call my office any other time

**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:**

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| **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**

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

* First time the student will get a zero at the report/quiz/pre-lab/post lab/project & 10 points (out of 100) 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 and lab final exam cheating will result in an F grade at the lab & the case will be reported to students’ affairs.

**Lab Breakdown**

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| 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: 7% 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: 7% 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 quizzes and exams should be done individually.

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| **Absent** | **With an Official Excuse** | **Without an Official Excuse** |
| **Attendance Grade** | Nothing deducted. | -2.5 point (out of 100) 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 10 points out of 100 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](mailto:eelabs@kfupm.edu.sa))
* If the student cheated for the 2nd time, the instructor should do the following:
  + Give the student **ZERO** out of 100 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](mailto:eelabs@kfupm.edu.sa)) then the department will report the case to students' affairs.