淡江大學 Tamkang University

課程計畫

Spring, 2008 (九十六學年度第二學期)

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Course: Electronic and Circuit Laboratory 1 credit hours, optional
Prerequisite: Electrical Engineering, Electronic and Circuit**.**
Class: Class 2009
Lab hours: 04:10 ~ 07:00PM, Mon.
Room: E217
Office hours: Mon, Tue, Thur, and Fri.: 11:00AM ~ 6:00PM or by appointment.
References:

1. 蔡朝洋，電子學實驗（修訂版），全華科技圖書，中華民國九十二年十一月。
2. 盧勤庸，電子電路模擬-使用PSpice A/D，全華科技圖書，中華民國九十六年九月。

Course Objectives:

To provide an introduction to electronic circuits measurements for aerospace engineering students. Topics include: basic measuring instruments, resistors, capacitors, inductors, transformers, diodes, transistors, operational amplifiers, and logic circuits.
The objectives of this course are to make students to understand the principles and characteristics of basic electronic components and their possible applications, familiar with the basic electronic measuring instruments and to develop the basic electronic circuit design capability.

Course Schedule:

Week	Dates	Material Covered
1st		
2nd	02/25	Syllabus
3rd	03/03	Lab 1 – Resistors and Capacitors
4th	03/10	Lab 2 – Diodes
5th	03/17	Lab 3 – Clipper
6th	03/24	Lab 4 – DC Restorer
7th	03/31	Lab 5 – Digit Logic Circuit
8th	04/07	Lab 6 – Zener Diode
9th	04/14	Lab 7 – Differentiators and Integrators
10th	04/21	Midterm
11th	04/28	Lab 8 – Timer
12th	05/05	Lab 9 – 2nd-Order Low Pass Filter
13th	05/12	Lab 10 – Fixed Voltage Regulator
14th	05/19	Lab 11 – Fixed Current Source
15th	05/26	Lab 12 – Comparator and Schmitt Trigger
16th	06/02	Lab 13 – Power Supply
17th	06/09	Lab 13 – Power Supply
18th	06/16	Final

Grading Policy*：

1. Lab Attendance 20%
   (a) Students are required to attend all labs.
   (b)Students should work in groups of two or three.
   (c) Each group should maintain one lab notebook to record the weekly data and schematics (complete with component values). This notebook should be kept in ink.
2. Lab Reports 60%
   (a) Each lab group will submit only one lab report at the beginning of the next lab session.
   (b) Late report will be penalized 10% per day.
   (c) Report grading methodology:
      (i) Lab work (30%) – evidence of having successfully completed the lab tasks.
      (ii) Figures/Tables/Equations (20%) – the solid content of the report
      (iii) Discussion (50%)
         Purpose – why we did it

* I reserve the right to change the policy.

Procedures – what we did
Theoretical results – what we should have seen
Measurement results – what we did see
Conclusions – why we see what we did

3. Lab Clean-up 20%

Lab Report Writing Strategies

When writing the lab reports, please stick to the following rules.

1. Use a title page, including title, bench #, names of group member.
2. Lab report should be typed, except for the print-outs from the oscilloscope.
3. Be sure to use any relevant equations when comparing theoretical and measured results and to use the measured component values when calculating theoretical results.
4. All pages should be numbered.
5. When applicable, use percent error to describe how a circuit functions.
6. Keep the report simple. Be complete but concise.

Figures/Tables/Equations:

1. Equations/figures/tables should be numbered in numerical order. (Figure1 always precedes Figure2, and Figure2 always precedes Figure3, but of course Table2 can come before or after Figures 1,2 or 3).
2. Print-outs should be inserted within the report (not at the end). Either paste them in or insert an entire page for it.
3. Each figure should be labeled. For print-outs, handwritten labels are acceptable.
4. Tables and figures should always have descriptive captions, which are properly placed.
5. Do NOT include a figure unless the text says something about it.
6. Once a figure has included, tell the reader what is important to notice about it.
7. Figures should not span multiple pages.
8. Insert actual oscilloscope print-outs from the lab; do NOT insert scanned or photocopied oscilloscope print-outs.