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Classroom: 5725
Time: Mon 1 and Tue 3-4
Lab: 5727
Time: Fri 7-9

Course description:
This is a course including the lectures and labs for providing the foundation for analyzing and designing, as well as the hands-on experience for both the analog and digital electronic circuits. The purpose is to acquaint the students with the basis of semiconductor technology, discrete and integrated circuits, and some circuit design and analysis techniques. The topics covered in this course are listed in the following:

Scheduled topics for lecture:
1. Chapter 1: Semiconductor Materials and Diodes
2. Chapter 2: Diode Circuits
3. Chapter 3: Field-Effect Transistor
4. Chapter 16: MOSFET Digital Circuits
5. Chapter 4: Basic FET Amplifiers
6. Chapter 5: Bipolar Junction Transistor
7. Chapter 6: Basic BJT Amplifiers

Scheduled topics for lab:
Lab 1 Electronic Instruments
Lab 2 Pspice Analyses
Lab 3 Diode Basics and Applications (I)
Lab 4 Diode Basics and Applications (II)
Lab 5 BJT Basics and MOSFET Basics
Lab 6 Single Stage MOSFET Amplifiers
Lab 7 Multi-Stage MOSFET Amplifiers
Lab 8 MOS Differential Pairs
Lab 9 MOS Biasing and Current Mirror
Lab 10 OP Amp Basics and Applications
Final Project Linear Regulator


**Lab manual:** The lab manual is kindly provided by Prof. Kuo Tai-Haur (郭泰豪教授), Department of Electrical Engineering, NCKU. It may be downloaded from Moodle, NCKU during the class.

**Reference Books:**

**Homeworks:** Five problems after each chapter will be selected as assigned homework. Each problem has one point. Every student needs to work on the problems by himself/herself.

**Lab Report:** Firstly, the students will be divided into groups. Each group consists of two students. For each lab and final project, each group needs to hand in the written report with the format as indicated in lecture. Before going to lab, the students need to study the lab manual. During the lab, students need to be very careful for safety and to use the instruments with care.

**Grading method for lecture:**
- Homeworks (35%)
- One Mid-term examination (30%)
- Final examination (30%)
- Class attendance (5%)

**Grading method for lab:**
- 10 Lab written reports (50%)
- Final project (presentation and written report) (30%)
- Class attendance and attitude (20%)