

EET225L
EL ELECTRONIC DEVICES LABORATORY

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TEXT: Boylestad et al: *Electronic Devices and Circuit Theory*, Prentice Hall
Handouts from Professors Finley and Wheeler, DeVry Kansas City

CREDIT HOURS: 1.0

EXPERIMENT NUMBER	EXPERIMENT TITLE	DUE WEEK
1	Diode Characteristics Page 13, Boylestad Lab Manual	3
2	Half-Wave and Full-Wave Rectification Page 33, Boylestad Lab Manual	4
3	Light-Emitting and Zener Diodes Page 73, Boylestad Lab Manual	5
4	Bipolar Junction Transistor Characteristics (Handout)	6
5	BJT DC Switch Design (Handout)	7
6	BJT DC Bias Design (Handout)	8
7	CE, CB, CC Small-Signal Amplifier Design (Handout)	10
8	FET Characteristics (Handout)	11
9	FET Bias Design (Handout)	12
10	CS, CD Small-Signal Amplifier Design (Handout)	13
11	Four-Layer Devices (Handout)	14

Each person in EET225L will design and build his or her own circuits, and write his or her own laboratory report. No laboratory partners are permitted. All circuits must be permanently marked with your name prior to operational signoff.

REPORT CONTENTS

Reports in EET225L should consist of the following parts (please pay attention to order):

1) COVER PAGE -- Must be on UNLINED WHITE paper, typed or word processed. Contains:

- a) Your name
- b) Your class and section (IE., EET225L 3DP)
- c) Experiment Title
- d) For: SR. PROFESSOR WHEELER
- e) Due Date of report (Week # or date given in class)
- f) Statement: "This is the original work of <your name>".

(Sign below.)

g) Operational sign-off blank.

2) LAB PAGES - The original pages from the lab manual, filled out with data, waveforms, etc.

3) RECORDED DATA PAGES - Where required by the experiment. Some experiments may require that you produce tables, graphs, etc. that are not part of the original lab pages.

4) DESIGN CALCULATION PAGES - Where the experiment involves design calculations, these pages will be included. (Labs 5,6,7,9, 10). All calculations performed will be clearly shown according to the standards for "Homework Performance" in the EET225 course syllabus.

GENERAL GUIDELINES FOR RECORDING DATA

- ?? All graphs must be done on the appropriate type of GRAPH PAPER. Frequency response plots should employ SEMI-LOG paper; other plots should use LINEAR (grid) paper. The use of EXCEL and other computer graphic tools is strongly suggested.
- ?? Graphs requiring iterative (repetitive) measurements must have a DATA TABLE. The data table should be on the page IMMEDIATELY BEFORE each graph. Data tables must be typed. A SAMPLE CALCULATION for ONE ROW of the data table must be shown on the same page as the table.
- ?? Waveforms may use electronic graphing means (BENCHLINK, for example); however, the presentation must be clearly labeled. Specifically, a legend must appear below the graph stating the circuit test point being measured by each scope channel. See the instructor's labs for COMPI25 if you need instruction on the acquisition of waveform data with the digital scopes - they are available on the instructor's web site.
- ?? All graphs and tables must be APPROPRIATELY TITLED.

GRADING

Each report in EET225L is worth 100 points; there are 11 reports due, for a total of 1100 points in the course.

Each report must contain a OPERATIONAL sign-off for credit. A sign-off is provided by the instructor or other authorized person. Performance of each critical portion of the experiment versus recorded data will be verified prior to sign-off.

The instructor reserves the right to use one or more periods for LAB QUIZZES. Students should expect to attend all lab sessions and be prepared for any quizzes. Lab quizzes will increase the total number of points possible. Each quiz, if given, will be worth 100 points and will increase the total number of points available by 100. For example, if one lab quiz is given, then the total number of points available becomes 1200.

Letter grades are assigned as follows:

Letter Grade	Percentage %	Quality Of Work
A	90 - 100%	Far above average; exemplary
B	80 - 89 %	Above average
C	70 - 79 %	Average; meets expectations
D	60 - 69 %	Below expectations
F	< 60 %	Inadequate, failing

POLICIES

I. LAB PARTNERS

There are NO lab partners allowed in EET225L. EACH PERSON IS EXPECTED TO WRITE HIS/HER OWN REPORT. All circuits must be CLEARLY ENGRAVED ON TOP with your name to obtain a sign-off. (Engrave all breadboards prior to assembling circuits upon them.)

II. LAB SUCCESS HINTS

The successful student will have all circuits built and ready to test BEFORE going to lab. Lab handouts and other information distributed in class are extremely important, and should be studied and understood before attempting the experiment. Try a "dry run" in your mind the day before the experiment to see if you can recall the important steps, setups, and results.

III. LATE WORK

NO late work is accepted. Work may only be turned in directly to the instructor during the assigned laboratory period. "Late work" is defined as work turned in after the end of the assigned lab period during which the work was due. DO NOT TURN ANY WORK INTO ROOM 208.

IV. PLAGIARISM, AND OTHER FORMS OF CHEATING

PLAGIARISM

Copying the work of another, and claiming it to be your own is plagiarism. This includes (but is not limited to) copying others homework, copying from a lab manual or textbook, or collusion. The minimum penalty for cheating in any form is a grade of zero for the element involved; in some cases, failure of the course and/or expulsion from the Institute will also result. **All cases of misconduct will be documented and forwarded to Student Services for disciplinary consideration.** The DeVry Student Handbook contains complete information on this topic.

Please do not turn in any work that is not your own! If in doubt, ask the instructor. Here are some ways to avoid any problems:

- ?? Don't share your computer files (text, OrCAD, etc) with anyone else.
- ?? Don't share a diskette (or other media) with another student; it's too easy to get files mixed up
- ?? Don't copy answers from a neighbor. If you don't understand how to do it, ask!
- ?? Decline any request from fellow students for a copy of your work. Anybody needing help should ask the instructor.

GOOD DATA PROCESSING PROCEDURES

Computers will be used for the generation of schematic drawings in this lab. The student can expect to spend many hours creating and updating these drawings; loss of this data can be disastrous! The following tips will help to minimize the chance of losing a project:

- ?? Make frequent backups. These backups should be in at least two different physical locations.
- ?? Always keep schoolwork on two different diskettes. Both of these disks will contain identical information. If one diskette is damaged by a computer, the data can still be recovered from the other during the lab period.
- ?? Don't save your data to the hard disk on the workstation, except in an emergency. The hard disks on lab workstations are periodically "cleaned" of any extra information as part of a housekeeping program.
- ?? Keep the work for each class on a separate disk.
- ?? Write your name, course, section, and professor's name on each disk. This will make it easier for others to return your work to you should you accidentally leave a disk behind.
- ?? If you're using a computer at home, an *anti-virus* program is strongly recommended.

V. MISCELLANEOUS INFORMATION

EMERGENCY PROCEDURES - There are plaques located in the lab discussing emergency procedures. The instructor will remain in charge of your class group in an emergency situation.

FOOD - DRINK - Are NOT allowed in the laboratory at any time. With liquids especially, there is a great potential for damage to equipment and injury to yourself or others. If you are caught with open food or drink containers during lab, you will be asked to leave the lab, and you will receive a grade of zero for the assignment. A second violation will result in a grade of "F" for the course.