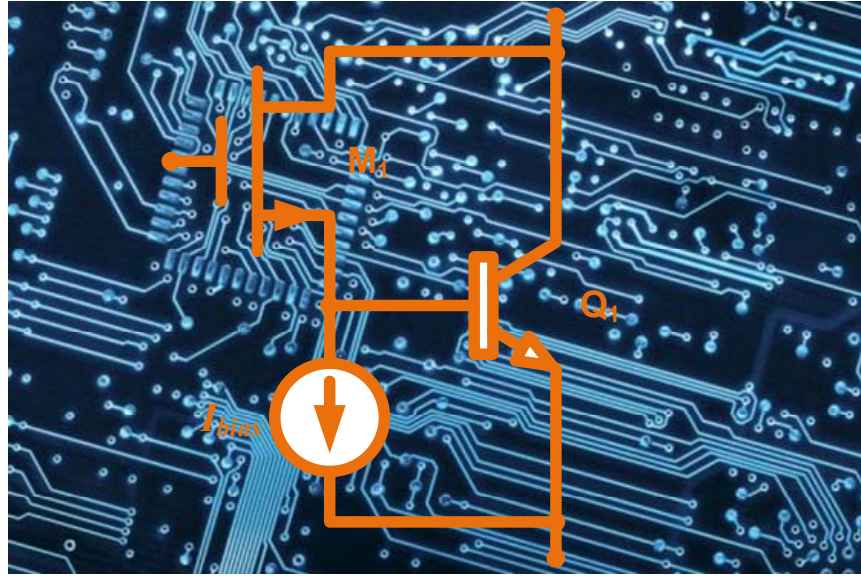


# Laboratory Manual for Electronic Circuits - 1

Experiments in Electronics Fundamentals



2018-Adana  
Çukurova University  
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## Preface

Laboratory Manual for Electronic Circuits - 1 is prepared for the students taking the electronic circuit course which is EEE226 Electronic Circuits offered in the Electrical and Electronics Engineering Department at Çukurova University. The content covers the course materials taught in the department. The manual is mainly intended to verify theory taught in the electronic courses in the laboratory.

This manual is divided into two parts as follows:

Section 1 introduces the laboratory rules, simulation of electronic circuits and laboratory equipments (Oscilloscope, DC Power Supply, DMM, and Signal Generator) to be used in the experiments.

Section 2 is devoted to experiments involving the basic electronic circuits which are taught in EEE226. It contains nine experiments, and it starts with basic measurements and learning the equipments used in Electronic Laboratory. The following three experiments are subjected on the diode characteristic and circuits. The next four experiments are on transistor characteristics and basic BJT and FET transistor based amplifiers. The last experiment is subjected on frequency response of the basic amplifiers.

Each experiment contains the following parts:

*Objective:* The purpose of the experiment is given.

*Theory:* The complementary information about the theory related to the experiment.

*Preliminary:* Detailed analysis of the experiment and should be completed before coming to the laboratory.

*Experimental Procedure:* Containing a relatively structured set of steps for performing the experiment.

*Conclusion:* This section is included for the evaluation of the differences between the theoretical and experimental results.

*Equipment List:* Lists of components and standard equipments which DMM, Oscilloscope, signal generator, and a prototyping board.

Appendix includes the data sheets for the components used in the experiments.

July 2018, Adana

Assist. Prof. Dr. Murat AKSOY



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# SECTION 1

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## 1. General Laboratory Rules

The purpose of experimental work is to help you gain a better understanding of the principles of electronics and to give you experience with instruments and methods used by electronic engineers. You should begin each experiment with a clear idea of the purpose of the experiment and the theory behind the experiment. Each experiment requires you to use electronic instruments to measure various quantities. The measured data are to be recorded, and you need to interpret the measurements and draw conclusions about your work. The ability to measure, interpret, and communicate results is basic to electronic work.

### **Rules and Regulation on Electronics Lab:**

- Students have to attend all the scheduled experiments. It can normally be completed within a two-hour period. If anybody misses an experiment due to health problem student will make it up.
- Experiments starts at scheduled date an hour, anyone who fails to join the experiment after five minutes later will be assumed absent.
- Students are supposed to study the experiment sheets, do the preliminary calculations and collect enough knowledge about the experiment before coming lab. These may be checked by quiz before experiment.
- Students who do not prepare the preliminary section will not be able to join the related experiment.
- Students must take all precautions for their own and instruments safety.
- Students cannot drink / eat anything in the Laboratory.
- Each group has responsible for their lab bench.
- After the experiment, all equipments should be powered off and all probes, cords, etc. are returned their proper positions.
- Your grade will be affected, if your bench is not tidy when you leave the laboratory.
- No visitors are permitted in the Laboratory.

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