INTEGRATED CIRCUITS LABORATORY

I. SOME DO's AND DON'Ts (general)

1. The lab sheets for every experiment will be available in soft copy well before the lab starts. Students are requested to print the copy and use. For every experiment, there will be three parts; preparation, experimentation and reporting. The preparation (pre-work) part should be completed by each student well before the lab session. In addition, the circuit diagrams required to be drawn, also should be completed before coming to the lab. Space is provided for the design calculations and observations. Additional sheets may be used if required. For uniformity, the graph sheets (included in the soft copy) should be used for the plots. The same set of sheets (with neat plots) can be submitted as the lab report after completing the experiment.

2. Each experiment has to be completed within one laboratory session. This normally requires a reasonable amount of preparation by the student so that lab time is not wasted in learning the basic theory of the experiment or how to use the lab equipment.

3. Credit (marks) will be given only for the completed part of the experiment.

3. Students are encouraged to focus solely on their experiment, avoiding chatting or disturbing other students.

4. Students are required to obtain the approval of their circuit diagrams and design calculations before wiring up the circuit. Wrong connections can damage equipment/components/devices. Further they also bring down your credit (marks) for the experiment.

5. Results or data acquired must be approved by laboratory teacher or tutor (stamped signed and assessed) within the same lab session. Copying others' data or report is not acceptable.

6. After completing the experiment, students must tidy the work-table before leaving the laboratory.

7. Lab reports should be submitted right on time, a week after the experiment is completed.

8. The compensation laboratory (repeat lab) can be done only with the permission of laboratory teacher. Students are requested to avoid being absent for any lab session.

9. Students need to inform laboratory teacher or tutor before leaving the lab.

10. Switch off the hand-phone during laboratory sessions.

11. It is good to keep the bags and other such items in the place provided for them and not on the work-tables.

II. Laboratory procedure and mode of assessment

There will be about ten experiments in the Integrated Circuits laboratory, including one mini-project. All the experiments will carry equal marks. The weightage is 75% for continuous assessment and 25% for end-semester examination (written or practical). The following procedure will be followed for the conduct of laboratory.

a) At the beginning of each experiment, the students are expected to get the prework (question- answers, circuit diagrams, design calculations) approved.

b) During the laboratory sessions it is desirable that you conduct the experimental work on your own as much as possible. But when in doubt, please call the lab teacher/ tutor for help.

c) At or immediately after completion of every experiment (session), the lab report needs to be shown to the tutor for **approval** of the result/completion of the work.

d) Before approving, the tutors will

- Ask the students questions on the procedures used to obtain the experimental results and the contribution of each team member;
- Check the validity of the recorded results.

e) Any graphs to be drawn etc can be completed within the following week and the report for the experiment should be submitted at the beginning of next experiment (session).

The assessment of each report is as follows

A mark of up to **20 (twenty**) is assigned for each lab experiment, distributed as:

- **5** marks for the pre-work (Completion of pre-work such as answering the theoretical questions, drawing the required circuit diagrams etc before coming to the lab);
- **10** marks for the experimental work (correct use and settings of lab instruments, avoiding wrong connections which damage components, correct application of the experimental procedure, ability to answer questions on the experimental procedure by each team member, a good technique of debugging, validity/explanation of the results). **Trivial mistakes or repeated mistakes (due to negligence) during experimentation can be costly**!
- **5** marks for the reporting (compliance with required reporting, correctness of calculations and plotting, etc. Neatness and clarity are encouraged).