COMPUTER ENGINEERING DEPARTMENT
DIGITAL DESIGN LAB. (COE 203)
Laboratory notebook

Experiment/Project:

Team leader :
Team member :
Date :

1. **Objectives.** Briefly describe the objectives of the Experiment/project: the circuit to be designed, implemented, and tested, and its intended use.

2. **Specifications.** Describe the technical and performance specifications that must be met by the circuit or system that is to be designed. It is perfectly acceptable to refer to published documents here rather than repeating them if they are lengthy. It is, however, wise to record whatever data you need while you are working.

3. **Design methodology.** Describe the procedures you followed in the design. Explain design decisions and write down all equations used and calculations made. Sketch rough schematics of the design details, with nodes labeled for later analysis. It is perfectly acceptable to paste or tape into your notebook copies of printouts, photographs, plots and other items.

4. **Implementation.** Draw detailed schematics of your built design. These should be very complete, using functional schematics of integrated circuits instead of the pin-out schematics given in the data books. Label each terminal with its function where appropriate and give the pin number to help with troubleshooting. Measure the values of any parameter when they are critical to performance.

5. **Troubleshooting.** Describe the procedures followed in troubleshooting your design. Don't simply write "we tried it and it worked," but instead describe the test configuration, test data applied, and measurement of output. Discuss how you concluded that it was working correctly. If it did not work properly, explain the problem and how you solved it. Discuss any redesign that was required. Keep a list of the equipment used. Since this list will not change often, list your equipment in the front of your notebook, and then list any changes as they occur.

6. **Test and evaluation.** Explain the test set-ups and the measurements taken. Provide clear, organized graphs, performance tables and observations. Graphs should be drawn as the measurements are taken. In this way, you can visually detect anomalous values and quickly check these measurements to verify their accuracy. Explain what the data means by explaining how it agrees with the corresponding mathematical model. Your report should be more than just a collection of tables, graphs, and equations. Your interpretations and explanations of this material is the most important part of the report. If you realize that your data is not in agreement with theory, then explain why you think it is in error and what data you expected to record.

7. **Conclusion.** Summarize the work accomplished. Discuss any critical design factors. Compare the actual performance with the theoretical performance. Discuss alternative approaches.