

PROCEDURES FOR LABORATORY WORK

This document outlines the general procedures for Laboratory work undertaken as part of the Electrical and Computer Systems Engineering degree courses at James Cook University.

- Generally practicals are scheduled to run during a 3 hour session. The practical schedule and group listing will be advertised through the subject Web pages prior to the commencement of the laboratory. It is important students adhere to the published schedule to ensure sufficient resources are available to do the laboratories.
- Experimental procedures to be followed during the laboratory are available via the appropriate subject Web sites. Students should print the procedure and read through the practical prior to the commencement of the laboratory session. Some practicals require calculations to be done prior to the start of the laboratory.
- There will be an attendance sheet that students are required to sign at each laboratory session. It is the responsibility of the student to ensure that they have signed the attendance sheet before leaving the laboratory. Failure to do so will result in the assumption that the student was not present at the session, and no marks will be awarded.
- Generally only one practical per subject will be required to be submitted as a formal laboratory report. Some notes on the preparation of formal laboratory reports are included at the end of this document. Practical not assessed by way of a formal report will be assessed during the laboratory and/or based on some form of electronic submission of results. Practical marked during the laboratory will generally take into account Preparation (40%), Participation (20%) and Progress (40%). It is the responsibility of the **student** to ensure that they have had a mark recorded before leaving the laboratory. For details concerning a specific subject or practical, it is suggested that students consult the relevant practical tutor or the lecturer in charge of the subject.
- Formal laboratory reports are to be placed in the appropriate letterbox outside the ECE Office, room EL107, before 4:00pm two-weeks from the date the student signed for attending. Boxes are available for both 2nd and 3rd year labs. Laboratory reports submitted to other locations will **not** be considered.
- Laboratory reports received after the two-week period will be subject to a penalty of 10% per day of the marks that would have been awarded if the Laboratory report were on time. Laboratory reports received after the three-week period will be awarded no marks.
- In exceptional circumstances where the deadlines cannot be met, and before the due date, the student can approach the Lecturer for the subject for an extension. An extension **may** be granted, but will be at the Lecturer's discretion.
- All Laboratory reports will be marked as soon as possible and should be available for collection by the end of the semester. Practical marks will be advertised on the subject Web page at the end of the semester. Students should check their results carefully and inform the Lecturer in charge immediately of any problems.
- Engineering laboratories are similar to most work sites and are governed by Workplace Health and Safety regulations. Please see *Safety Requirements for Engineering Buildings* on the School of Engineering web pages at; <http://www.eng.jcu.edu.au/resources/studentinfo/>.
Enclosed footwear must be worn in all Laboratories, including computer labs, at all times.

Laboratory Report Preparation

A laboratory report is a formal presentation of the analysed results of an experiment or investigation and the conclusions that may be drawn from those results. The structure of a report may vary depending on the type of report, the topic and the expected audience. In this case, we will assume a professional report similar to what might be published in a professional journal (such as IEEE Transactions on Instrumentation and Measurements).

The basic structure of a laboratory report can be similar to that of a normal Journal log but more detailed. The report will therefore include sections such as

- Experiment Title and Date. Your name and those who worked with you during the experiment.
- Goal of the experiment.
- Experimental Theory. Key equations and concepts relevant to the practical.
- Experimental Procedure. What you did, what equipment was used and what was done differently to the written procedure.
- Results : Observations and Interpretations. **Very Important!** The results obtained shown in an appropriate form (diagrams, graphs, tables etc). Answers to questions posed within the written procedure. What the results show you. Anything unusual in the results you obtained and possible explanations for what was observed.
- Conclusions. General findings. Anything that went wrong.

In addition, a report should include a list of references as well as a brief summary of the work and any conclusions drawn at the beginning of the report under the heading of an Abstract.

Reports should be submitted on A4 paper, preferably typed. Binding or enclosure within a folder is recommended.

The assessment will take into account such things as

- Introductory theory
- Procedural description
- Observations (comparison to expected outcome)
- Interpretations (error analysis)
- Completeness (Was the prac finished)
- Style (Neatness, legibility, structure)
- Evidence of additional effort. (Reading, research, etc).

A minimum of effort will ensure a passing grade for the practicals. Additional work will be rewarded with higher marks.