Writing a lab report for Paper 9

Write a lab report for Paper 9 to help you think about the theory behind lab exercises, and to get experience in (and feedback on!) technical writing and presentation ready for your Lent term project.

A lab report is a simplified form of how experiments are reported in academic journals, as explained in the handout *Format of a Project Report*, which you should also have a copy of. (Get it from the website it you don't have one.) As detailed in that handout, a formal report comprises: Abstract, Introduction, Method, Results, Discussion, References. This handout largely outlines the differences between what's expected in your final Project report, and what's expected in a lab report.

Laboratory reports
Omit the Abstract and References (unless the exercise requires specific reading).
Reduce the scope of other sections but in other respects follow the same basic format.

Statement of Purpose
Replaces the Introduction of formal journal articles, in that it is not usually necessary to review relevant literature in a lab report, nor to justify in detail why this experiment is being done. The statement of purpose may be as short as one sentence, and is not necessary at all if it is implicit in the title e.g. "Comparison of men's and women's vowel formant frequencies". But if you have hypotheses (predictions) about the expected findings, then put them here. Omit this section completely if the purpose is implicit in the title and you have no predictions.

Method
It's usually unnecessary to give enough details for someone else to replicate your work. Just say where the data came from. E.g. "the vowels /i/ and /u/ in the context of /b_d/ from file <filename> (spoken by Sarah Hawkins)." However, if you provide the speech materials yourself, note:

1. The material: words used etc; natural or synthetic; if natural, the talker(s)' characteristics (accent, sex, age....if it was you, just give your name); if synthetic, the type of synthesizer and the values of the input parameters (and sometimes acoustic analyses of the output speech).
2. The method of data collection (if relevant—unlikely to be so in the undergraduate course).
3. The method of analysis. (E.g. what type of spectrum you used, But NOT obligatory activities e.g. not "The cursor was placed...." but "Durations of fricatives were measured from the point where aperiodic noise began to where it ceased.")

Results

- Decide what figures and tables to present during the lab session (obviously). Print any figures you need before the end of the session, but try to do the measurements on them before you print them.
- Use the same basic principles of presentation as for a formal project, except that you should not waste time making fancy computerised figures and fitting them nicely on the page: just append any computer printouts etc, but make sure you have labelled/numbered them.
- Hand-drawn figures, and handwriting on them, is perfect as long as it is legible.

Discussion as for a larger work, but there may be rather little for a lab report.

1. Say what your work shows, in terms of the hypotheses, motivating theory, etc.
2. Relate your observations to those of others, including any discussed in the Introduction.
3. Criticise your work constructively if appropriate.
4. Suggest directions for future work.

Items 2 and 4 can be completely omitted if it seems appropriate to do so.

Do not spend more than 4 hours writing one lab report! Two hours would be vastly preferable.