1. There will be lab reports to be completed throughout the semester, each of which will utilize lab data collected over one or more lab periods. These reports should be considered as combination lab/engineering reports that utilize the gathered lab data to provide insight and answers to the specific problem being considered. Each report MUST include a main body and separate appendices for each included lab. Each table and figure in the main body should be given a number and title and be included within, or at the end of the text. Data tables/figures included in the body of the report should present useful summaries which are pertinent to the design problem at hand.

2. The main body of your lab reports must be typed and include the following sections in the order specified. Information in appendices may be hand written.

   A. **Title Page:** A one-page cover sheet showing the title of the report, your name and all members of your lab team, and the date of report submission.

   B. **Introduction:** A brief (one-half page or less) summary of the objectives of the work. In a commercial report this is a summary of the contractual agreement as understood by the consultant.

   C. **Summary of Tests Performed:** A one or two paragraph statement which indicates the types of lab tests performed, including any special techniques used or changes from laboratory procedural instructions. DO NOT re-write the specific procedures followed for each lab as detailed in the lab procedures handed out. Any equipment limitations or possible sources of errors should be discussed. If your results are not very good, give your analysis of the probable cause. In a commercial report you would indicate any deviations from the ASTM (or other standard) and the reasons.

   D. **Summary of Test Results:** A brief summary and tabulation of the PERTINENT laboratory test results. When necessary, you should note when obtained results are unreasonable and provide your opinion as to why this occurred. Do not say you got a lot (or nothing) out of the experiment; this is not considered a “conclusion.” This part of the report should be about one-half page or less, depending on the amount of information to be presented. In a commercial report, this would be those items in the first sentence together with a summary of recommendations for use by the client later in the project design.

   E. **Recommendations:** A brief summary of recommendations that are appropriate for the design project. In some instances, recommendations for further tests may be given if suspect data was used and/or additional test data are needed for design recommendations. Design recommendations should be based on an analysis of available data as well as associated costs of production/construction. Costs associated with additional tests should also be justified.
F. **Appendices:** Your report should include separate appendices for each lab session included. Each appendix should include completed data tables, necessary figures, and example calculations. DO NOT include lab data sheets in the body of the report. These are generally of no interest to the reader of the report; instead they are made available in an appendix if the reader calls into question a statement or conclusion in the body of the report.

F. **Writing Form:** Your reports should follow good technical writing form, including the citing of any references used. DO NOT write in the first person (I, me, we, our, etc.) in writing a technical report. Do not write such statements as “I found that ....” or, “My group found ....;” instead use “It was found that ...” Use correct spelling - when in doubt, use a dictionary. Try to use good sentence construction, and do not change from past tense to present tense in the same sentence or paragraph. Many of these problems can be avoided by:

1. Writing the report and then reading it over a day or so later. A neatly marked-through word or two will be better received by the instructor than a report that is poorly written. It will also indicate that you went over the report before submitting it.
2. Thinking about what you are going to write and being brief. A few well-put-together sentences are far more impressive than a long, poorly written report that says nothing.

A primary purpose of the report is to give the instructor an indication of what you learned from the project. Other major benefits are obtained from practice in report writing and presenting engineering data. While you will be graded primarily on the project and the presentation of the data, a poorly written report will generally result in a lower grade than a well-written one. In a commercial environment the report is the project information record that documents to the client the scope of the work performed, both for design use and for payment authorization. Great care is required in its preparation since the content may be used later for peer review or as evidence if legal actions are brought against the Engineer. Students may not yet fully appreciate the formality involved in the reports; however, be aware that report writing is an essential part of the work of most engineers.