Dr. Tomás´ Guide to Writing a Good Report

Style and Format:

- The report should consist of coherent, clearly labeled sections. What these sections are depends largely on the subject of the report and the nature of the project. Nonetheless, there are some sections that should be included in any report. Those are

  o A **Cover Page** with pertinent information (including contact information)
  o An **Introduction**
  o A body with meaningful subsections
  o A **Conclusion**

  Many people also like to see an **Executive Summary** at the beginning of the report. This should give a snapshot of the whole report. Even though it appears first, *it should be written last*.

- All figures and tables should be labeled and titled. Refer to each figure and table that you include; no figure should be treated as self-explanatory.
- A consistent style and format should be used throughout the report. Do not change fonts within the report. Do not change styles of section headings or figure captions.
- Introduce all variables used in your report. If a large amount of variables exists in the report, include a **List of Symbols and Notation**.
- Use appropriate mathematical equation editors for all equations.
- Number all pages.
- Proof read your report to catch all grammatical, spelling and style errors.

Guidelines for Graphics

Listed below are some guidelines regarding the use of figures, tables, pictures, and equations in student reports.

Tables:
1. Give the table a number and a title. This information is usually placed at the top of the table.
2. Include units.
3. Fractional numbers should be presented with a leading zero, e.g., the number 0.3432 should never be reported 0.3242.
4. For audiovisual presentations:

Figures:
1. All figures must
   a. be mentioned and thoroughly discussed in the text
   b. appear after the text reference (preferably that page or the next)
2. Give the figure a number and a title. This information is usually placed under the figure.
3. Figures are generally incorporated in the body of a report with a portrait (not landscape) orientation. Use a landscape orientation only if there is a good reason to do so.
4. A figure title such as "Fig. 1: Particle size vs. Time" is usually unacceptable. The title should be descriptive, as in "Fig. 1: Growth of particle size as a function of time".
5. Include units on all axes.
6. Axis markings generally belong to the left and below the figure.
7. Carefully check that fonts and other graphical elements are not too small. Otherwise, your figure is violating its primary goal of conveying information. As a general guideline, don't use fonts smaller than 9-point.
8. Include a legend when two or more quantities are plotted on the same graph. Some of the choices available for establishing the legend are:

    a. Place a legend for the curves directly on the graph. Generally used for all simple plots. Another possibility is to use curve-labeling without a separate legend box.

    b. Label the curves with numerals (1, 2, 3, etc.) or letters (a, b, c, etc.) which are defined or explained in the figure title. Used if style (a) clutters the graph.

Pictures:
Photographs are often used when they should not be used. In engineering reports, schematic drawings with labeled information are often better than a photo.

Equations:
1. Usually, equations should be centered on the page.
2. Equations should be sequentially numbered.
3. Equations should always be incorporated into the text using standard equation editing tools. For guidance, examine engineering textbooks and technical articles.

Content:

- All reports should have an **Introduction** that clearly defines your purpose in writing it. In this section you need to clearly identify what you are attempting to do in the report and also the *perspective* (punto de vista) from which you will be doing it. Are you describing a particular MEMS device in detail, including principles of operation and the modeling of its functionality? Are you instead describing a particular fabrication technique not covered in detail in the course? The best way to do this is to briefly state your **objectives** for the reader, much as I have done for each of the course's individual lectures. As concisely and thoroughly as possible, state what you would like the reader of report to *be able to do* or what you would like them *to know* after they have finished reading it.

  You also want to as **motivate** the topic you are discussing. Answer the question, "*What am I doing in this report and why is it important?*"

- Simply giving information in the report is not sufficient. In some sense you are *telling a story*. How do the parts of the story go together as a whole? The answer to that question is different for every report and topic. The thing to think about, however, is simple: Ask yourself, "Am I helping the reader meet the **objectives** I stated in the introduction?" If so, then do it. If not, then reconsider what you are writing.

- In the **Conclusion** section briefly remind the reader of what they have just learned in the body of the report. A good conclusion section will make it clear to the reader that they have in fact met the **objectives** you set for them in the **Introduction**.

- If there is any one secret to writing an effective report (or technical writing), it is this:

  Your intended audience has your level of technical expertise, but knows nothing of the particular project on which you are working.

  You should be able to give your completed report to a fellow classmate with no knowledge of the project, and after reading it, he or she should have a clear understanding of what you did and why.