# TECH 4945 Senior Project
# Technical Report Guidelines

Along with your poster presentation and final, formal presentation to your classmates and the department faculty, you must submit a written technical report that fully documents your senior project.  This is a significant body of work and is not to be taken lightly.  Plan ahead and work on this report as the project progresses.  A properly kept journal will be invaluable in the preparation of this report.  You will be assigned dates to bring draft copies of the various sections of the report to class for critique.

A minimum of 4,500 words of original narrative is required between Section 1 and the end of Section 5.  For team projects, add 1,000 words per person in addition to the first.  For example, a team of two would have to submit 5,500 words.  Direct quotes, tables, figures, or bulleted lists are not included in this count.

Your written work may be submitted to Turnitin.com, or a similar electronic detection method, for an evaluation of the originality of your ideas and proper use and attribution of sources. As part of this process, you may be required to submit electronic as well as hard copies of your written work, or be given other instructions to follow. By taking this course, you agree that all assignments may undergo this review process and that the assignment may be included as a source document in Turnitin.com's restricted access database solely for the purpose of detecting plagiarism in such documents. Any assignment not submitted according to the procedures given by the instructor may be penalized or may not be accepted at all.  (University of Memphis Office of Legal Counsel, October 17, 2005)

Any acts of plagiarism will result in failure of the course.

As you have been taught, write to your audience.  Assume the reader to have technical proficiency, but not necessarily in your specialty.

Spelling, grammar, and flow will be heavily weighted in the scoring of the written report.  Note that given the grading criteria, it is actually possible to earn a negative score on this report.


# Parts of the Project Report

**Letter of Transmittal:** The letter of transmittal is a cover letter, generally brief, that accompanies another item such as a document.  The transmittal letter includes the purpose and a description of the document or item being sent.  A Letter of Transmittal is a business letter and should be formatted accordingly.  It should include the recipient's address, your address, a salutation and a closing.

**Title Page:** The title page must contain the title of the project, the statement of submission, the name of the student, the name of the institution, and date submitted.

**Executive Summary:** Similar to an abstract, the executive summary is a brief, comprehensive summary of the contents of the report.  It should state the problem, describe the procedure or methods used, and summarize the conclusions reached.  The bo dy of the executive summary should be no longer than one page, single-spaced (approximately 500 words).  The project title, your name, and the name of the institution should appear at the top of the page.

**Table of Contents:** The table of contents reflects the outline and organization of the thesis. The main body of text (and corresponding sections or chapters), bibliography, appendix material (if any), list of tables (if any), and list of figures (if any) should appear in the table of contents.

**Preface and/or Acknowledgements (optional):** This optional page is where special help received (guidance from faculty members, funding agencies, relatives, etc.) should be acknowledged.

**List of Figures:** if two or more figures appear in the main body of text, you must include a list of figures after the table of contents. Each legend must appear in the list exactly as it appears in the text (same figure number, same caption, and page number).

**List of Tables:** if two or more tables appear in the main body of text, you must include a list of tables after the table of contents (or List of Figures if you have one). Each legend must appear in the list exactly as it appears in the text (same table number, title, and page number).

**Body of Report:** See Report Outline Below

**References/Bibliography:** See Manuscript Guidelines for details.

**Appendices:** appendices contain information that is important to the project but interrupts the flow of the narrative. See Manuscript Guidelines for more information.

# Report Outline

**Front Matter**

title page; acknowledgements; executive summary; table of contents; list of figures; list of tables

**Section 1 – Introduction**
Problem Statement
Objectives
Limitations

Set the stage. Provide the reader with background about the industry in general, company in particular, the product and services provided by that company. Describe the nature of the problem you are investigating. Discuss the importance of this research to the company and/or industry. What did you encounter when you first arrived on the scene? What is the starting point for this project?

**Section 2 – Review of Literature**
Review of Previous Research
Summary of the State of the Art

Discuss what is currently being done in the industry. What technology or technique is currently being used? How does this technology or technique work? What technology or technique did you use and how does it work? Summarize applicable textbook related information.

**Section 3 – Method**
Description of Procedure

This comes from your implementation of your project plan as outlined in your proposal. What did you do? In what order did you do it? What delays did you encounter? If someone wanted to do a similar project this section should guide them through the process.

**Section 4 – Findings**
Summary of Results
Presentation of Final Design
Presentation of Computer Output
Presentation of Electronic Circuit

This represents the results of your labor. It may include such things as motion and time studies, plant layout drawings, machine drawings, results of analysis, photographs, flow diagrams, schematics, screen captures. Computer program flowcharts are discussed here, with the program listing included in the appendix. Use figures and tables whenever possible.

**Section 5 – Summary and/or Conclusions**
Overview of Project's success or lack thereof
Implications
Suggestions for future research

This represent your opinion of your project. Was it successful? Did you met your stated objectives? Summarize the results. Was it interesting? Lessons Learned?

**Bibliography**

MLA format for all references. Cite all references, reference all citations.

**Appendices**

Listings of computer programs, manufacturer data sheets and/or schematics or other manufacturer's literature, listings of all data collected, etc.
Only include pertinent information as applicable to the project. For example, if using a particular microcontroller, include a data sheet but not the entire user's manual.

# Manuscript Guidelines

**Font and Point Size**
- Times New Roman, 12 point for the narrative.
- Arial, 10 point for charts, graphs, diagrams, tables, etc…
- Headings Times New Roman, 14 point bold.

**Margins**
- Margins should be 1.0" at top, right, and bottom; 1.25" at the left.

**Spacing**
- The body text should be double-spaced, but you should single-space quotations more than 4 lines in length, footnotes, and bibliographical/reference entries.
- A subheading at the bottom of the page must have two full lines of text below it.  Otherwise, the subheading should begin on the next page.

**Headers and Footers**
- Header for each page includes your name and project title.
- Footer for each page has page number centered on page (see below).

**Page Numbering**
- The preliminary pages (e.g., the Executive Summary, Acknowledgement, Table of Contents, List of Figures and List of Tables) are numbered in lower case Roman numerals (ii, iii, iv, and so on).  They should be placed in the center of the bottom margin.
- The Title Page is not numbered.  It is understood to be page Roman numeral I, although the number does not appear on the page itself.
- The main body of the text, including references, is numbered with Arabic numerals.  They should be placed in the center of the bottom margin.
- Page numbers are not required for appendices.

**Table of Contents**
- Place the word Page above the page number column.
- Use leader dots between listings and page numbers.
- Use double space above and below all major headings.
- Single space all subheadings.
- Use all capital letters for major headings.
- Include preliminary pages in the table of content, beginning with the Executive Summary
- List the Reference/Bibliography section and Appendix.
- Make sure page numbers correspond to the text.

**List of Figures and/or List of Tables**
- Include a list if two or more figures (or tables) are used in the main body of the text.
- Use a separate list for figures and a separate list for tables.
- Place the word Page above page number column.
- Use leader dots from last word of title to page number.
- Double space between figure (or table) titles; single space title if it is two or more lines.
- Check page numbers in the List of Figures (or Tables) against those in text.

**References/Bibliography**
- Cite all references in the text; reference all citations.
- Be consistent in referencing style – use MLA.  See http://citationmachine.net/

**Appendices**

- Place appendix headings either on a separate cover sheet before appendix material or on the top of first page of each appendix.
- Must include a hard copy of any web site referenced by url in the bibliography/references.
- Must be separated and titled, e.g. Appendix A – Program Listing, Appendix B – Process Flow Diagrams, etc…
- Titles of appendices should be included in the Table of Contents
- Any items that cannot be 3-hole punched should be inserted into a plastic sleeve
- Original graded project proposal and copies of progress reports are to be included in two separate appendices.
- Include a hard copy of all program code with a listing that exceeds one page in an appendix. Listings that are one page or less may be included in Section 4, Results.

**Organization**

- Submit in a 3-ring binder of size comparable to the document.
- Insert a copy of the title page in clear pocket on front cover.
- Label title and author on spine.
- Order of assembly is: title page; acknowledgements; executive summary; table of contents; list of figures; list of tables; body of report; bibliography/references; appendices.
- In the inside front pocket include the following documents in this order:
    - Letter of transmittal.
    - Letter of approval from your supervisor if applicable.
    - Your resume.
- In the inside back pocket include the following saved on a CD:
    - Your entire written project report saved as one file beginning with the title page and including all material through the bibliography.
    - Separate files of all photographs, diagrams, charts, etc… used in the project
    - Your Project Poster
    - Your PowerPoint presentation used for your final project presentation