

MASTERS THESIS/PROJECT FORMAT GUIDELINES

CHEMICAL AND MATERIALS ENGINEERING DEPARTMENT

SAN JOSÉ STATE UNIVERSITY

Revision September 19, 2023

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## CME MASTERS THESIS/PROJECT REPORT FORMATTING

This document provides instruction on the accepted way to format a thesis or project report for submittal to the Chemical and Materials Engineering (CME) department. The overall format of the report should conform to the San Jose State University thesis guidelines established by the College of Graduate Studies (<https://www.sjsu.edu/cgs/current-students/thesis-and-dissertations/index.php>) The following paragraphs will discuss the formatting rules specific to the CME Department.

### 1. Chapters

The basic chapters that should be in the main body of a project or thesis report submitted to the CME department are listed below.

- CHAPTER ONE: INTRODUCTION
- CHAPTER TWO: LITERATURE REVIEW
- CHAPTER THREE: OBJECTIVES/HYPOTHESIS
- CHAPTER FOUR: MATERIALS AND METHODS
- CHAPTER FIVE: RESULTS
- CHAPTER SIX: DISCUSSION
- CHAPTER SEVEN: CONCLUSIONS
- CHAPTER EIGHT: REFERENCES

The Chapter Number and Title are formatted in all capital letters. Each chapter starts on a new page. Each chapter must contain at least two paragraphs of text. If CHAPTER ONE: INTRODUCTION is longer than five pages, then the theoretical background material should be put into CHAPTER TWO: BACKGROUND.

If the chapter contains more than four paragraphs, then it can be divided into sections. Each section must contain at least two paragraphs of text. Each paragraph must contain at least three sentences. The section title should be capitalized and include both the chapter number and section number in Arabic numerals (e.g. 1.1. Section Name). Do not allow “widows” (the last line of a paragraph which appears alone at the top of the following page) or “orphans” (the first line of a paragraph which appears alone at the bottom of the page) in your text. Insert page breaks as needed to avoid widows and orphans.

## 2 Figures

All figures should be numbered sequentially using Arabic numerals starting with Figure 1 for the first figure appearing in the text. Do not use chapter numbers as part of the figure number. All figures should have a figure number followed by a descriptive caption. Captions should be placed below the figure with left justification. The figure number and caption must be included in the LIST OF FIGURES in the Front Matter section of the thesis/project report. Allow enough spacing after the figure so the caption is distinctly clear from the subsequent text. If the caption is more than one line long it should be single-spaced. The caption needs to be on the same page as the figure.

Figures by themselves do not convey any information to the reader. Do not assume that the reader will automatically understand the figure. The author needs to discuss the importance of each figure in the text. All figures should be mentioned in the text using the Figure number, rather than the page on which they appear. The figure should then appear immediately following the paragraph in which it is first mentioned. It is recommended that there be only one figure per page, unless two figures fit neatly and do not appear crowded. Page breaks should be inserted to avoid crowding. For figures containing graphs, make sure each axis is fully labeled with the

variable name, symbol, and units. In general, experimental data is best displayed using a scatter plot without lines connecting the points, while theoretical equations are best displayed using a scatter plot with solid lines and no points. Fits to experimental data should be with the clearly labeled with the fit equation and correlation coefficient. Figure 1 shows an example of a figure that complies with the CME formatting rules.

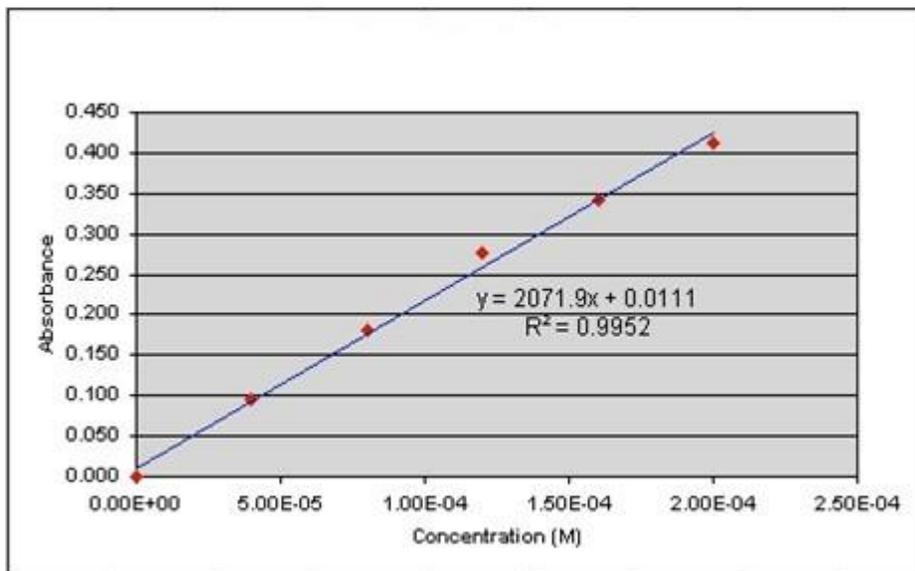


Figure 1. Calibration curve for yeast concentration as a function of absorbance measured at 520 nm.

Figures which have been obtained from other sources must be cited in the caption using a bracketed citation number (e.g. [1]). For a thesis, permission to copy the figure must be obtained from the publisher. Permission forms can be obtained from the College of Graduate Studies; allow enough time to get the permissions. Permission requests are also available on-line for many journals. Obtaining permissions during the proposal preparation phase in MatE/ChE 281 is recommended.

### 3 Tables

All tables should be numbered sequentially using Arabic numerals starting with Table 1 for the first table appearing in the text. Do not use chapter numbers as part of the table number. All tables should have a table number followed by a descriptive caption. Captions should be placed above the table with left justification. The table number and caption must be included in the LIST OF TABLES in the Front Matter section of the thesis/project report. If the caption is more than one line long it should be single-spaced. The caption needs to be on the same page as the table.

The purpose of providing tables in the text is to enable an organized presentation of data. First, remember that the tables in themselves do not convey anything. Do not assume that the reader will be able to interpret the data. The author of the report needs to discuss important facts for each table included in the report text. All tables should be mentioned in the text using the Table number, rather than the page on which they appear. The table should then appear immediately following the paragraph in which it is first mentioned. If more than one table is mentioned in the paragraph, then each table should be placed sequentially. Tables have rows and columns. In general, each column should have a descriptive label, which include a variable name, symbol, and units. Sometimes rows will also have descriptive labels. Table entries should include measurement errors when available. Table 1 shows an example of a table that complies with the CME formatting rules.

Table 1. Numerical calculations for sundial angles.

Location	Latitude	Longitude	f(degrees)
Palo Alto, CA	37°11'	42°9'	37
New Orleans, LA	28°61'	54°12'	7

#### 4. Equations

All equations are to be numbered continuously, beginning with Equation 1. The equation label and number should be on the first line of the equation. You can use the “insert caption” feature of Word to do this. The equation should be set-off from the text as a separate paragraph and centered. All variables should be defined in the text with units. The following is an example of a properly formatted equation and its text description. Equation 1 shows Ohm’s Law.

$$V = i R \quad \text{Equation 1}$$

where V is voltage in volts (V), I is current in amperes (A), and R is resistance in ohms ( $\Omega$ ).

#### 5 References and Citations

The purpose of providing references is so that the interested reader can read the original source material. A reference is used to let the reader know where you obtained a certain piece of information or opinion. It is extremely important to properly cite reference, since the reader has to assume that any uncited information or opinion is actually that of the author of the report.

References should be cited in the text by inserting the reference number in brackets [1,2]. If you have multiple references for the same paragraph or idea it can also be done as shown [3-10]. If you refer to the same reference later in the text, use the already assigned reference number [3].

When referring to researchers in the text, refer to them by last name unless to distinguish

between more than one researcher with the same last name. Avoid using gender specific pronouns (“he/his/she/her”). If there is more than one author on the paper, refer to the researchers using *et al.* or and co-workers or similar. For example, “Lee *et al.* found that stress increased in the last half of the semester [1].” The Chemical and Materials Engineering department uses the IEEE Reference Guide (<https://ieeauthorcenter.ieee.org/wp-content/uploads/IEEE-Reference-Guide.pdf>) for citation and reference formatting. Most of your reference should come from printed peer reviewed journals, which use the Periodical format found on page 12 of the IEEE Reference Guide.