



# DESIGN & ANALYSIS OF STEAM TURBINE POWER PLANT (IN CAPITAL LETTERS)

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By

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**2014-MS-MED-12**

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2021

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**2014-MS-MED-12**

A THESIS

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in partial fulfillment of the requirements for the degree of  
Master of Science

In

**MECHANICAL DESIGN ENGINEERING**

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## ABSTRACT

The abstract of the thesis is presented here. The abstract is a standalone document and is generally intended for a general audience. It presents a high-level summary of your work highlighting the problem statement, theoretical background, a methodology, experimentation, and key results.

**It is a single page** document and follows the same text format as for your whole thesis. It can have paragraphs. The references are generally not included in the abstract.

## **ACKNOWLEDGMENTS**

Present your acknowledgements here. It is a good idea to acknowledge those who helped you through this journey and provided key input and resources to achieve this milestone.

## **STATEMENT OF ORIGINALITY**

It is stated that the research work presented in this thesis consists of my own ideas and research work. The contributions and ideas from others have been duly acknowledged and cited in the dissertation. This complete thesis is written by me.

**Saqib Hussain Jafri**

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## NOMENCLATURE

Symbol	Description
$i, j, k$	indices for X, Y, and Z axis
F	Force
ORIC	Office of Research, Innovation, and Commercialization
UET	University of Engineering & Technology

# 1. INTRODUCTION

Start writing your thesis here. This section provides recommended guidelines for preparing your thesis for submission to ORIC. Thesis sections (commonly referred as chapters as well) are centered, capitalized, and are numbered. The recommended font size 14 (two points larger than your text). For Microsoft Word these would be treated as **Heading 0**. It is a good idea to save the Heading 0 style in MS Word for consistent formatting of your thesis. The Section heading has a spacing of 24 pts from the text. **Please also note that this is also the Page 1 of your thesis.**

## 1.1. FIRST LEVEL HEADINGS

The first level headings are also capitalized and numbered continuously using a multilevel list. Recommended font size is 12. These headings have a paragraph spacing of 12 before and after. Microsoft word **Heading 1** may be modified and saved for consistent formatting of the thesis.

The paragraphs are indented consistently thorough the thesis. The recommended spacing is 0.5” from the left margin. The text is generally left aligned but justified is also acceptable.

**1.1.1. Second Level Headings** The Second level and subsequent headings can be formatted as above. These are first letter capitalized. In Microsoft Word the Heading 2 and the subsequent headings may be saved for consistent formatting of the thesis. In case a heading is more than a single line, then these headings should be single spaced.

### **1.1.2. Second Level Headings That Are Longer Than Two Lines Are Single-Spaced Lines**

Longer headings are formatted as single spaced. The rest of the formatting stays the same i.e. first letter capitalized, 12 pts before and after spacing etc.

## **1.2. TABLE OF CONTENTS, LIST OF TABLES, LIST OF FIGURES**

The table of contents (TOC), list of figures list of tables, and nomenclature all work in a similar manner. It is recommended that the MS Word's built-in features are utilized for creation of TOC, list of figures, and list of tables.

### **1.2.1. Table of Contents**

The TOC should be automatically created if you follow the MS Word Headings styles. TOC uses a dotted leader between headings and page numbers. For situations where the heading is long and is missing the dotted leader, put your cursor before the page number and hit the Tab key. This should move your page number over to the right margin and add the dotted leader.

For list of figures and list of tables a similar strategy can be adopted using the captions. Please refer to MS Word help and other available resources for the use of captions and generating the List of Figures and the List of Tables.

**1.2.2. Formatting Figures** Figures should be formatted with plenty of space above and below the actual figure. Two lines (double spaced) above and below the figure are recommended. The figure caption must be below the figure and centered.

The figure should be numbered using the section/chapter number. For example, the first figure in Section 1 should be numbered as Figure 1.1 and then should continue as 1.2, 1.3. Similarly, a third figure in Section 2 should be numbered as Figure 2.3.

It is recommended that Captions feature of MS Word is used for figures and tables for automatic creation of List of Figures and List of Tables. MS Word help documentation or other sources may be consulted for the use of captions.

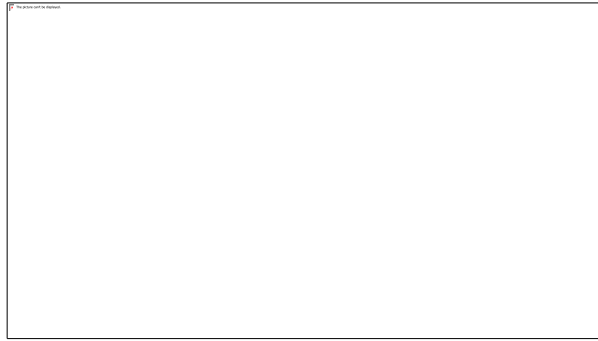


Figure 1.1 Main Entrance to UET Lahore.



Figure 1.2 UET Logo

### 1.2.3. Formatting Equations

Equations should be numbered sequentially throughout the thesis. Equation should have a single line spacing (double spaced) before and after. It is generally required that the equations, figures, and tables are introduced in the text before they appear.

$$\sum_{i=1}^n F = 0 \quad (1)$$

$$\begin{bmatrix} i \\ j \\ k \end{bmatrix} = \begin{bmatrix} 10 \\ 20 \\ 0 \end{bmatrix} \quad (2)$$

Please use the indentation if your text following the equation, figures, or tables is a new paragraph. Please ensure all symbols used are provided in the Nomenclature.

**1.2.4. Formatting Tables** Tables are formatted similar to figures. The title of the table is placed at the top, and an extra line of space is used above and below. The numbering of tables in the section writing follows the same rules as the figures. Table 1.1 is one such example. The large table may be oriented landscape. These large tables, and figures may be placed in an appendix as well rather in the main body of the text to continue the flow of your writing. Please pay attention to the page number as MS Word might place the page number at a different spot than your other pages.

It is recommended that Captions (available under References for MS Word) be used for titles of the tables for automatic creations of List of Tables. Tables are used as first letter capitalization here. It is not compulsory, however, must be consistent throughout the thesis. The same goes for Figures as well. Further, Cross-reference be



used while writing your thesis for automatic update of Table and Figure number in your text.

Table 1.1 A Sample Table

<b>Activity</b>	<b>Start Date</b>	<b>Duration</b>	<b>End Data</b>
<b>Literature Review</b>	Sep 1, 2020	8 Months	April 30, 2021
<b>Model Development</b>	January 1, 2020	3 Months	March 30, 2021
<b>Experimentation</b>	April 1, 2021	6 Months	September 30, 2021
<b>Thesis Writing</b>	June 2022	3 Months	August 2022

## **2. MISCELLANEOUS INFORMATION ON FOMATTING OF YOUR THESIS**

In this section we present some common tips. Please refer to the ORIC website for updated versions of this template. Also note above that the Section 2 heading is long and is single spaced.

### **2.1. MISCELLANOUS INFORMATION**

While writing and formatting your document, the following is recommended:

- Refer to ORIC website for latest information and guidelines for your thesis.
- Generally, the text is “Left Aligned, but “Justified: is also accepted.
- Use Headings in MS Word to your advantage. These can be modified and saved for consistent formatting of your thesis.
- Use Widow/Orphan control for paragraphs
- Use Captions and Cross-references in MS Word to your advantage to create List of Tables and List of Figures. These will ensure that your text stays updated if you add or delete a table or figure in your thesis.
- Leave consistent space between Figures, Tables, and Equations.

Recommendations are given in this document.

### **2.2. THESIS FINAL PRESENTATION**

The guidelines provide in

Table 2.1 be used for final presentation of your thesis.

Table 2.1 Presentation of Thesis

<b>Item</b>	<b>Specifications</b>
<b>External Cover</b>	Hard cover and binding Color = Black Finish = Matt
<b>Writing on Cover Page</b>	<ul style="list-style-type: none"> <li>• A replica of the Page ii of this template is to be presented as the Hard Cover with the above color specification.</li> <li>• Inscription is in golden (R, G, B = 212, 175, 0)</li> <li>• Recommended font is Times New Roman with 22 Size</li> <li>• The UET logo may be printed in Gold color as well.</li> </ul>
<b>Writing on Spine</b>	<p>Inscribed in Gold color (with font size = 22, adjusted for larger titles)</p> <p>The following is to be provided on the spine:</p> <ol style="list-style-type: none"> <li>1- Thesis Title (left aligned with 1-inch margin from the edge)</li> <li>2- Scholar Name (minimum 1-inch space between title and name and 1-inch space from the other end of the spine)</li> <li>3- Registration Number (Exactly below and left aligned with the name)</li> <li>4- Year (Ph.D. completion year) Year is provide as a 4-digit number and is written one half-inch from the bottom edge of the spine and read horizontally when standing.</li> </ol> <p>A sample is provided in Figure 2.1.</p>
<b>Paper Size</b>	A4 (8.2'' x 11.6'')-80g
<b>Margins</b>	<p>Left = 1.5 inch</p> <p>Right = 1.0 inch; Top = 1.1 inch; Bottom =1.0 inch</p>



Figure 2.1 Sample Formatting for The Spine

Your thesis is one of the most significant writings you would ever write in your academic career. We hope this template helps for that. Good Luck!

## **BIBLIOGRAPHY**

Please ensure that you use a referencing style that is recommended by your department or of a prominent periodical published by a professional society in your field such as IEEE, SME, ASCE, ASME, SPE, SGE, etc.

It is recommended that a reference management software such as EndNote, Mendeley is used for bibliography. The references should be downloaded directly from the authentic sources to ensure accuracy of information.

Double spacing should be used between each reference. References that are more than one line long should be single-spaced within.

Separate sections for references and bibliography may be added as well if required.

## **APPENDICES**

Appendices are generally used to provide useful information about your work for more details but are not essential part of your research. Some of the items that become part of your appendices include detailed explanations and elaborations, additional or large diagrams, additional or long tables, detailed mathematical derivations, experimental standards and protocols etc.

Use letters to label the appendices e.g. Appendix A, Appendix B, etc. Each appendix should have a suitable title and should contain a specific type of information. Each appendix should start on a new page. Every appendix must be referred in your body text.

## **VITA**

Provide information about yourself here in simple paragraph format in the past tense. You must include your full name, your educational and professional background. All degrees earned and year earned need to be included in the vita. Also include the degree and date of the current degree earned.



Finally, leave a blank page at the end of your thesis.