

GUIDELINES FOR B. TECH PROJECT REPORT PREPARATION



**Department of Mechanical Engineering
University of Kashmir
Zakura, Srinagar.**

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GUIDELINES FOR B.TECH PROJECT REPORT

PREPARATION

Introduction

This document is intended to provide a set of specific and uniform guidelines to the B. Tech students in the preparation of the final year project report. The content of the report, which is submitted to the Department of Mechanical Engineering in partial fulfillment for the award of the degree of Bachelor of Technology, is very much important. It is also imperative that the report, to be acceptable by the department, should essentially meet a uniform format emphasizing readability, concordance with ethical standards and Department-wide homogeneity.

CHAPTER 1

REPORT LAYOUT

The thesis has to be organised in the following order.

1. Cover Page
2. Inside Title Page
3. Certificate signed by the Supervisor(s) (in the stipulated format)
4. Declaration signed by the Candidate (in the stipulated format)
5. Acknowledgements
6. Abstract
7. Table of Contents
8. List of Figures
9. List of Tables
10. Abbreviations/ Notations/ Nomenclature (if any)
11. Text of the Report
 - Chapter 1
 - Chapter 2
 -
 -
12. References
13. Appendices (if any)
14. Non-paper materials (if any)

The formats to be followed for various headings are as follows

- 1. COVER PAGE:** See sample sheet 1. The content, relative font size and locations of various items in the page should match with those given in sample sheet 1.
- 2. INSIDE TITLE PAGE:** Same as that of cover page except but printed in bond paper.
- 3. CERTIFICATE:** See sample sheet 2. The content, relative font size and locations of various items in the page should match with those given in sample sheet 2.
- 4. DECLARATION:** See sample sheet 3. The content, relative font size and locations of various items in the page should match with those given in sample sheet 3.
- 5. ACKNOWLEDGEMENTS:** See sample sheet 4. Should not exceed two pages.
- 6. ABSTRACT:** See sample sheet 5.
- 7. TABLE OF CONTENTS:** See sample sheet 6.
- 8. LIST OF FIGURES:** See sample sheet 7.
- 9. LIST OF TABLES:** See sample sheet 8
- 10. ABBREVIATIONS/ NOTATIONS/ NOMENCLATURE:**
See sample sheet 9.
- 11. CHAPTERS:** The chapters may have Introduction including literatures referred, Materials, Methods used, Results, Discussions and Conclusions. See sample sheet 10.
- 12. REFERENCES:** To be provided immediately after the last chapter. See sample sheet 11.
- 13. APPENDICES:** See sample sheet 12.

CHAPTER 2

GENERAL GUIDELINES

2.1. Report Size

The report may contain a maximum of about 100 pages including references and appendices.

2.2. Paper Size

Use A4 size paper (210 mm wide and 297 mm long).

2.3. Margins

A margin of 40 mm (1.574 inches) is to be provided on the left side and for the right side, a margin of 20mm (0.787 inches) is to be provided. Whereas top and bottom margins should be 30 mm (1.181 inches). No print matter should appear in the margin except the page numbers. All page numbers should be centered inside the bottom margin, 20mm from the bottom edge of the paper.

2.4. Font

Times New Roman (TNR) 12-point font must be used throughout the running text. The captions for tables and figures should have a font size of 11 and footnotes should be set at a font size of 10. Font sizes for various levels of headings are given in section 2.7.

2.5. Line Spacing

The line spacing in the main text should be 1.5. Single-line spacing should be given for quotations, abstract, figure captions, table captions, figure legends, footnotes, and references. The equations, tables, figures, and quotations should be set off from the main text both before and after with a spacing of 1.5. Two consecutive paragraphs should be separated by triple line spacing.

2.6. Headings

The following format must be followed in the heading of chapters and sections.

CHAPTER 3

**TITLE PAGE-CENTERED TNR 17-POINT BOLD ALL
CAPS**

3.1. Section Heading
Left aligned with number, TNR 17 points, bold and leading caps

3.1.1. Second level section heading
Left aligned with number, TNR 14 points, bold and sentence case.

3.1.1.1. Third level section heading
Left aligned with number, TNR 12 points, bold and sentence case.

Fourth-level section heading
Numbered subsections beyond third level are not recommended. However, fourth-level subsection headings may be included without numbering, TNR 12-point font, left aligned and italicized.

Running text should be set in 12-point TNR and fully justified. The first line of the paragraph should have an indentation of 15 mm.

2.7. Table / Figure/equation Format

Tables, figures, and equations shall be numbered chapter-wise. For example, the second figure in Chapter 3 will be numbered Figure 3.2. The figure can be cited in the text as Fig. 3.2 or Figure 3.2, however consistent citation format should be followed throughout the thesis. Tables shall be numbered similarly (Table 2 in Chapter 3 will be numbered Table 3.2) and shall be cited in the text as Table 3.2. The figure caption shall be located below the figure. The

table number and caption shall be located above the table. Equations aligned to the page's centre with the equation number in the text have to be given at the end of the line within brackets as given below.

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left(a_n \cos \frac{n\pi x}{L} + b_n \sin \frac{n\pi x}{L} \right) \quad \text{Equation 1-1}$$

2.8. Citing References

When writing a piece of academic work, you must acknowledge any sources which you have used. You do this by including a brief in-text 'citation' within the main body of your writing, next to the material you have used.

The IEEE style is a numeric style, where citations are numbered [1] in the order of appearance. This citation leads your reader to a full reference to the source in the list of references at the end of your work. Each citation number should be enclosed in square brackets on the same line as the text, before any punctuation, with a space before the bracket [2]. Once a source has been cited, the same number is re-used for all subsequent citations to the same source.

Here are some examples of IEEE-style citations:

- "... as shown by Brown [4], as previously stated."
- "The theory was first put forward in 1987 [1]."
- "For example, see [7]."
- "Several recent studies [3, 4, 15, 16] have suggested that..."

The example above may also be formatted as:

- "Several recent studies [3], [4], [15], [16] have suggested that..."

Page numbers are required within citations where the material is directly quoted or you refer to a specific part of the source, such as a detail difficult to find. Give page numbers within the square brackets, for example [1, p. 3].

2.9. Listing of the References

References are to be listed after the last chapter. They are to be listed in alphabetical order and numbered. Within a reference, the line spacing should be single. Each reference should be separated by one blank line. The referencenumber should be left aligned. The text of the reference should have an indentation of 10 mm. The reference format to be followed for journal articles, textbooks, conference proceedings etc. are given below.

2.9.1. References

At the end of your work, list full details of all of the sources which you have cited in your text in a section headed References, in numeric order. References listed must follow IEEE formatting guidelines (see reference examples overleaf). Your reference list should allow anyone reading your work to identify and find the material to which you have referred.

In IEEE style your reference list should be formatted in the following way:

- Align references left.
- Single-space each entry, and double-space between every new entry.
- Place the number of entries at the left margin, and enclose them in square brackets.
- Indent text of entries.

2.9.2. Citations/references with multiple authors

If you choose to mention the author(s) of a source whilst citing it in the text of your work, if there are three or more you can abbreviate them using ‘et al.’ e.g. During their research, Fan, et al. [4] discuss lasers in detail. However, in general, you do not need to mention the authors by name, just use the numeric citation in square brackets. In your full reference list at the end, however, you always give the authors’ names. In the reference list, you can only abbreviate these using ‘et al.’ if there are six or more authors.

2.9.3. Reference examples

There are standard reference formats for most types of documents. Below are examples of the most common types of documents you might want to reference. Each of the following gives a suggested standard format for the reference followed by examples for the different document types.

2.9.4. Textbooks

[Ref number] Author's initials. Author's Surname, Book Title, edition (if not first).
Place of publication: Publisher, Year.

[1] I.A. Glover and P.M. Grant, Digital Communications, 3rd ed. Harlow: Prentice Hall, 2009.

2.9.5. Book Chapter

[Ref number] Author's initials. Author's Surname, "Title of chapter in the book," in Book Title, edition (if not first), Editor's initials. Editor's Surname, Ed. Place of publication: Publisher, Year, page numbers.

[2] C. W. Li and G. J. Wang, "MEMS manufacturing techniques for tissue scaffolding devices," in Mems for Biomedical Applications, S. Bhansali and A. Vasudev, Eds. Cambridge: Woodhead, 2012, pp. 192-217.

2.9.6. Electronic Book

[Ref number] Author's initials. Author's Surname. (Year, Month Day). Book Title (edition) [Type of medium]. Available: URL

[3] W. Zeng, H. Yu, C. Lin. (2013, Dec 19). Multimedia Security Technologies for Digital Rights Management [Online]. Available: <http://goo.gl/xQ6doi>

Note: If the e-book is a direct equivalent of a print book e.g. in PDF format, you can reference it as a normal print book.

2.9.7. Journal article

[Ref number] Author's initials. Author's Surname, "Title of article," Title of the journal abbreviated in Italics, vol. number, issue number, page numbers, Abbreviated Month Year.

[4] F. Yan, Y. Gu, Y. Wang, C. M. Wang, X. Y. Hu, H. X. Peng, et al., "Study on the interaction mechanism between laser and rock during perforation," *Optics and Laser Technology*, vol. 54, pp. 303-308, Dec 2013.

Note: the above example article is from a journal which does not use issue numbers, so they are not included in the reference

2.9.8. E-Journal Article

V PDF versions of journal articles are direct copies of the print edition, so you can cite them as print journals.

[Ref number] Author's initials. Author's Surname. (Year, Month). "Title of article." Journal Title [type of medium]. Volume number, issue number, page numbers if given. Available: URL

[5] M. Semilof. (1996, July). "Driving commerce to the web-corporate intranets and the internet: lines blur". *Communication Week* [Online]. vol. 6, issue 19. Available: <http://www.techweb.com/se/directlinkcgi?CWK19960715S0005>

2.9.9. Conference Papers

[Ref number] Author's initials. Author's Surname, "Title of paper," in Name of Conference, Location, Year, pp. xxx.

[6] S. Adachi, T. Horio, T. Suzuki. "Intense vacuum-ultraviolet single-order harmonic pulse by a deep-ultraviolet driving laser," in *Conf. Lasers and Electro-Optics*, San Jose, CA, 2012, pp.2118-2120.

2.9.10. Reports

The general form for citing technical reports is to place the name and location of the company or institution after the author and title and to give the report number and date at the end of the reference. If the report has a volume number add it after the year.

[Ref number] Author's initials. Author's Surname, "Title of report," Abbreviated Name of Company., City of Company., State, Report number, year.

[7] P. Diament and W. L. Luptakin, "V-line surface-wave radiation and scanning," Dept. Elect. Eng., Colombia Univ., New York, Sci Rep. 85, 1991.

2.9.11. Patents

[Ref number] Author's initials. Author's Surname, "Title of patent," Country where a patent is registered. Patent number, Abbrev of Month Day Year.

[8] J. P. Wilkinson, "Nonlinear resonant circuit devices," U.S. Patent 3 624 125, July 16 1990.

Note: Use "issued date" if several dates are given.

2.9.12. Online Documents

If you are using documents such as a report, conference paper, standard, patent or thesis online and it also exists as an identical print equivalent i.e. with the same format and pagination, it can be usually be referenced as the print version.

If it is e-only, you can make the standard reference template an electronic version by adding the material type in square brackets e.g. [Online] after the document title. If there is no specific document title you can place this after the document number (e.g. patent number).

At the end of the reference add: Available: URL. See below for an example of an online patent:

[12] M.R. Brooks, "Musical toothbrush with adjustable neck and mirror," U.S Patent 326189 [Online], May 19 1992. Available: <http://goo.gl/VU1WEk>

2.9.13. Dissertations and Thesis

[Ref number] Author's initials. Author's Surname, "Title of thesis," Designation type, Abbrev. Dept., Abbrev. Univ., City of Univ., State, Year.

[10] J. O. Williams, "Narrow-band analyser," Ph.D. dissertation, Dept. Elect. Eng., Harvard Univ., Cambridge, MA, 1993.

2.9.14. Websites

Note: Include as much of the key information as you can find for a given website. If a web page has no personal author, you can use a corporate author. Failing that, you can use either Anon. (for anonymous) or it is permissible to use the title of the site.

[Ref number] Author's initials. Authors Surname. (Year, Month. Day). Title of web page [Online]. Available: URL.

[13] BBC News. (2013, Nov. 11). Microwave signals turned into electrical power [Online]. Available: <http://www.bbc.co.uk/news/technology-24897584>.

[14] M. Holland. (2002). Guide to citing internet sources [Online]. Available: http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html

2.10. Page Numbering

Page numbers for the prefacing materials (Inside title page, dedication, certificate, declaration, acknowledgements, abstract, table of contents, etc.) of the thesis shall be in small Roman numerals and should be centered at the bottom of the pages. The numbering of the prefacing material starts from the Inside Title Page. However, the number is not printed on the Inside Title Page. Each new item of the prefacing materials listed above should start on fresh paper. The page numbers of the prefacing material will be printed in small Roman numerals continuously counting blank pages also. However, the numbers are not printed on the blank pages.

The body of the thesis starting from Chapter 1 should be paginated in Arabic numerals and should be centered at the bottom of the pages. The pagination should start with the first page of Chapter 1 and should continue throughout the rest of the thesis.

2.11. Printing

Printing of all material should be single-sided in black ink with exceptions as indicated in sections 2.3 and 2.11.

2.12. Non-Paper Material

A report may contain non-paper material, such as CDs and DVDs, if necessary. They have to be accommodated in a closed pocket on the back cover page of the thesis. The inclusion of non-paper materials must be indicated in the Table of Contents. All non-paper materials must have a label each clearly indicating the name of the candidate, student code number and the date of submission.

2.13. Electronic Copy

An electronic version of the report should be submitted to the Coordinator of the Department and the concerned faculty in charge of the Project. The file name should contain the student code number, name of the candidate and date of submission.

**TITLE OF THE PROJECT REPORT TO BE
SUBMITTED BY THE CANDIDATE**

A report submitted in partial fulfilment for the Degree of

BACHELOR OF TECHNOLOGY

in

Mechanical Engineering

by

S.No	Name of the Candidate	Enrolment No.
1.	ABC	18206145001
2.	ABC	18206145002
3.	ABC	18206145003
4.	ABC	18206145004
5.	ABC	18206145005

Under the guidance of

(Name of Guide)

&

(Name of Co-Guide)



**Department of Mechanical Engineering
Institute of Technology, Zakura Campus
University of Kashmir.**

Srinagar

Month, Year.

BONAFIDE CERTIFICATE

Certified that this thesis report “**TITLE OF THE PROJECT REPORT TO BE SUBMITTED BY THE CANDIDATE**” is the bona fide work of the following Students namely **ABC** under enrollment number **18206145001**, **ABC** under enrollment number **18206145002**, **ABC** under enrollment number **18206145003**, **ABC** under enrollment number **18206145004** and **ABC** under enrollment number **18206145005** who carried out the thesis work under our supervision. Certified further, that to the best of my knowledge, the work reported herein does not form part of any other thesis report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

	Supervisor Name	Signature
1.	Dr. ABC	
2.	Dr. XYZ	

Project Incharge

Dr. MNQ

Seal & Signature
Coordinator,
Department of Mechanical Engineering

DECLARATION

We declare that this project report titled <**Title of the report**> submitted in partial fulfilment of the degree of **B. Tech in Mechanical Engineering** is a record of original work carried out by us under the supervision of <**Name(s) of the Supervisor(s)**>, and has not formed the basis for the award of any other degree or diploma, in this or any other Institution or University. In keeping with the ethical practice of reporting scientific information, due acknowledgements have been made wherever the findings of others have been cited.

S.No.	Name	Enrollment No.	Singature
1.	ABC	18206145001	
2.	ABC	18206145002	
3.	ABC	18206145003	
4.	ABC	1820614504	
5.	ABC	18206145005	

Zakura, Srinagar – 190 024

<Date>

ACKNOWLEDGMENTS

- All acknowledgements are to be included here. Please restrict it to **two pages**.
- The name of the candidates shall appear at the end, without signature.

I take this opportunity to thank Dr. ABC, Coordinator, Department of Mechanical Engineering, Dr. XYZ, Project In-Charge and other faculty members of the department
.....

I extend my sincere thanks to the Lab staff,

<Name of the candidate-1>

<Name of the candidate-2>

<Name of the candidate-3>

<Name of the candidate-4>

<Name of the candidate-5>

ABSTRACT

Abstract of the report to be given here. Please restrict to a maximum of 300 words.

NOTE: The abstract should not have any citations or abbreviations, nor should it be divided into sections. It can be divided into an adequate number of paragraphs as the author wishes. It is advisable to avoid any equations in the Abstract. Figures and tables are to be avoided.

Note that all paragraphs in the Abstract start with an indent of 15 mm, and there is no extra spacing between two successive paragraphs. The text should be in Times New Roman font size 12, single-spaced.

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ABBREVIATIONS/NOTATIONS/NOMENCLATURE

Utmost care should be taken by the project student while using technical abbreviations, notations and nomenclature.

The abbreviations should be listed in alphabetical order as shown below.

AFM	Atomic Force Microscopy
BBB	Blood Brain Barrier
CNT	Carbon Nanotube

The meaning of special symbols and notations used in the report should be explained.

$|x|$ - absolute value

of \bar{x} - mean

$\log_n(x)$ - logarithm (x) to the base n

Chemical nomenclature

NH_4^+ - ammonium

CH_4 - methane

OH^- - hydroxide

SO_4^{2-} - sulphate

Biological nomenclature

Soneratia apetalla - saline tolerant species

Oryza sativa - common rice

CHAPTER 1

INTRODUCTION

1.1. Green house gases

The green houses gases are receiving so much of attention these days from the scientific community. The careful management of these gases is a serious research problem. Recently, Attanas and Monica (2012) reported the hazards associated with the mismanagement of these gases. Table 1.1 lists the percentage distribution of the gases.

The studies related to the management of these systems need to follow a unified approach as suggested by earlier workers (Ram et al., 2005a; Ram et al., 2005b). However reports from Gurudeep and Mahin (2009) indicate the permissible level of green house gases¹.

Table 1.1 Title of the table (Times New Roman 11)<<Citation>>

A^a	B^b	C	D

^a A is admonishment coefficient of total population (Times New Roman 10)

^b B is Bombardment coefficient of the mean population (Times New Roman 10)

1.1.1 Motivation of the study

Alarming rate of climate change, sea level rise and other natural disasters are to be managed efficiently. Assessment and management of green house gases thus become very much essential..

¹ Adapted from Monika and Ram, 2008 (Times New Roman 10)

The satellite image as given in Figure 1.1 shows the area from where samples are collected.

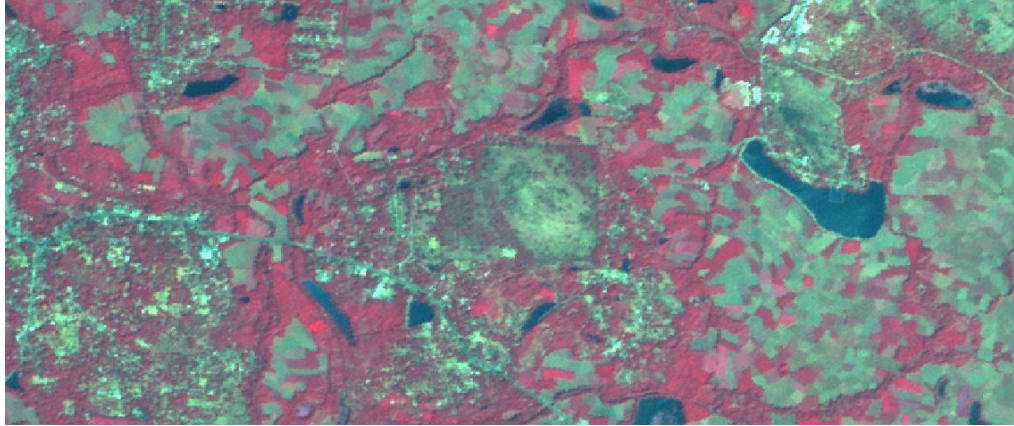


Figure 1.1 Title of the figure (Times New Roman 11)<<Citation>>

References

- [1] “WASTE HEAT RECOVERY,” Bureau of Energy Efficiency. Accessed: Aug. 15, 2022. [Online].
- [2] “Thermodynamic Properties of HCFC-123 (SI Units),” Dupont. 2004. Accessed: Aug. 15, 2022. [Online].
- [3] A. J. Cengel, Yunus A. , Ghajar, Heat and mass Transfer Fundamental and Application, vol. 283. 2016.
- [4] Y. A. ; M. A. B. Cengel, Thermodynamics An Engineering Approach Eight Edition. 2014.
- [5] T. L. BERGMAN, ADRIENNE S. LAVINE, F. P. INCROPERA, and D. P. DEWITT, Fundamentals of Heat and Mass Transfer seventh edition, vol. 49, no. 1. 2019.
- [6] A. Thekdi and S. U. Nimbalkar, Industrial Waste Heat Recovery : Potential Applications, Available Technologies and Crosscutting R&D Opportunities. 2015.
- [7] C. C. S. Reddy, S. v. Naidu, and G. P. Rangaiah, “Waste heat recovery methods and technologies,” Chemical Engineering (United States), vol. 120, no. 1, 2013.
- [8] U.S. Department of Energy, “Waste Heat Recovery: Technology Opportunities in the US Industry,” 2008. [Online].
- [9] U.S. Department of Energy, “Waste Heat Recovery: Technology Opportunities in the US Industry,” 2008.
- [10] M. A. Ali, T. S. Khan, E. al Hajri, and Z. H. Ayub, “A computer program for working fluid selection of low temperature organic rankine cycle,” in American Society of Mechanical Engineers, Power Division (Publication) POWER, 2015, vol. 2015-January. doi: 10.1115/POWER201549691.
- [11] S. Sakinah, M. Hamid, P. Chopra, A. A. Baba, A. H. Sahir, and D. J. Sweeney, “Kashmiri Hamam: An Exploration of Technical Design Within Traditional Architecture and Culture,” 2021. doi: 10.1109/GHTC53159.2021.9612496.
- [12] Z. Y. Xu, R. Z. Wang, and C. Yang, “Perspectives for low-temperature waste heat recovery,” Energy, vol. 176, 2019, doi: 10.1016/j.energy.2019.04.001.
- [13] Z. Varga and B. Palotai, “Comparison of low temperature waste heat recovery methods,” Energy, vol. 137, 2017, doi: 10.1016/j.energy.2017.07.003.

APPENDIX 1

LIST OF RESPONDENTS TO THE SURVEY

1. IIST
1. NIT
2. JNU
3. MKU
4. KU
5. JNTU
6. Vizag University
7. IIT, Delhi
8. IIT, Mumby
9. IIT Chennai