

**Indian Institute of Technology, Bombay
Department of Aerospace Engineering**

Structure/Style/Format instructions/guidelines for Reports

I. Preamble:

These instructions **apply to all seminar reports, BTP first stage and final reports, MTP/DDP first and second stage reports only**. They **do not apply** to MTP/DDP dissertations (final reports) and Ph.D. thesis reports for which the Senate approved norms apply (available with the Aero. Office/Academic Office).

Some of these instructions are mandatory (obvious from the context.). Others are in the nature of guidelines. Overall these are written with reference to the novice who is writing her/his first technical report and has all sorts of questions regarding what such a report looks like or how it is to be styled/formatted. The instructions are therefore detailed and almost all elements are included. **Students are encouraged to stick to these as far as is possible**. Badly formatted and/or nonstandard styled reports are irritants to reading and distract attention from the main contents of the report (that is, the work done). Besides leaving an unsatisfactory impression on the reader's mind, they also lead to using up a significant part of the examination (viva -voce) time in pointing out such omissions individually, affecting your grade. These instructions are written largely with the MSWord style software in mind since it is targeted at students from all sorts of background who may not have had experience with or access to Latex. However, those with such experience should be able to implement them in Latex also.

II. General:

1. *Number of copies to be submitted*: **Unless specified otherwise** by the coordinator (faculty advisor) for your batch, **only 2 copies** of the report need to be submitted (one for the report examiner, one for the guide). If you have more than one guide, submit an **additional copy for the co-guide**. Examiner's copy will be returned to the student after the presentations. The student need not make a separate copy for his/her own keeping. In case of **Ph.D. seminar reports please consult your guide** regarding the number of copies to be submitted.
2. *Maximum page limit*: **Unless specified otherwise** by the coordinator (faculty advisor) for your batch, the **maximum limit is 25 pages for the body of the report**, that is, from page 1 of chapter 1 to last page of last chapter (that is, excluding cover page, certificate page, abstract, contents and all other lists, acknowledgment and annexure). **Reverse printing (that is, on both sides of the paper)** is encouraged to save paper. However, in that case **use thicker paper**, minimum 85 GSM, to avoid the reverse side contents interfering with reading. Please note that thicker reports do not necessarily mean better grades. Although no **minimum limit** is specified, a body length lower than 20 pages is not expected normally. These **limits do not apply to Ph.D. Seminar reports**, where it is left to the guide to decide.
3. *Page size*: A4.
4. *Binding*: **Staple binding or stitching** the sheets sandwiched between two plastic sheets (to provide protective cover) is recommended. Use a heavy-duty stapler appropriate to the number of sheets. Top plastic sheet must be transparent so that cover page is clearly seen.

Use a **plastic spine** to cover the staples to avoid the possibility of the pins hurting the reader. **Do not use spine binding alone** without stapling or stitching.

5. *Typesetting*: Use of word processing software such as MSWord, Star-Office or Latex is a must.
6. *Summary*: Along with the report, **submit a 2-page extended abstract** of the report. This will be distributed to all members of the examination panel. One designated examiner will evaluate the full report.

III. Report Structure:

The report should normally have the following component structure in the given order. Each component should start on a new page.

1. *Cover page*: Giving the **title of the report, the name and roll number of the student, the name of the guide**. The exact format is given in **Annexure I** as a sample page. The title should be representative of the matter contained in the report. Avoid titles that are too generalized or cryptic like “Composites,” “Computational Fluid Dynamics,” “Buckling of Plates.” Also avoid very long titles.
2. *Certificate*: A certificate as per format **shown in Annexure II** signed by the guide.
3. *Abstract*: A single paragraph describing **in concise terms, the technical contents** of the report. This should not be a layout of the report in terms of chapter titles. Rather it should be able to clearly convey to the reader what matter is covered by the report as its scope. Indicate subject dealt with, objectives of the investigation, arguments discussed/newly observed facts/conclusions of the study in summary form. A good guideline is to **restrict the abstract to about half a page**. In any case it should not exceed one page. The abstract should be followed by a set of 5-6 **keywords** related to the report.
4. *Table of Contents*: **Chapter, section titles and references with their corresponding page number**
5. *List of Figures*: **Giving figure number, figure title, page number**
6. *List of Tables*: **Giving table number, table title, page number**. If there are very few figures and tables, then the list of figures and list of tables may be put on the same page. Otherwise they may be put on different pages.
7. *Nomenclature*: All **acronyms and symbols** used in the report must be **defined here**. Order is acronyms first (in alphabetical order) followed by symbols (English alphabets in alphabetical order, followed by Greek and other mathematical symbols) followed by subscripts/superscripts.
8. *Body of the report*: In the form of **Chapters 1 to N**. Chapter 1 is usually an introductory chapter introducing the report topic through its importance, background, history, motivation, overall statement of status/maturity of the field, scope of the study, etc. About 2-3 pages. Followed by the specific matter pertaining to the topic, organized as several chapters. Each chapter must be at least 2-3 pages long. Avoid very small chapters. Similarly all the matter should not form a huge chapter of say 15-18 pages. Split the contents. A good guideline would be about 34 chapters excluding the introductory and the concluding chapters. The body of the report must end with a small chapter (1-2 pages max.) with comments or conclusions reached say on the present state-of-art/progress achieved, future of the field, technology summary, highlights, contributions, etc. Consult your guides. Contents of all chapters must be written in your own way. Verbatim copying

of contents from other sources is not permissible, even if references are adequately cited against such contents (even in seminar reports). Exceptions are figures/tables, which may be reproduced with correct citation. Short quotations with citation are permissible, where necessary, for emphasis. Verbatim reproduction will attract severe grade penalty.

9. *References*: List all papers, books, monographs, URLs of Internet archives or of permanent information sources, strictly as per specific format given later.
10. *Acknowledgments*: Acknowledge guidance/advice/help received from people you have interacted with during the course of the seminar, restricting it to technical discussions associated with the contents of the report.
11. *Appendices*: Any details required for the sake of completion but not essential in the overall flow of information and readability of the main text can be put in Appendices at the end of the report. Normally seminar reports are not expected to have appendices.

IV. Style & Format:

1. Use **A4 page size** (8.27 x 11.69 in./21 x 29.7 cm) with **1" margin** on all sides for all pages. All text-including footnotes and illustrations must appear within this area.
2. Use **one and half spacing** for all text. Format paragraphs with 6pt spacing after paragraph end. New paragraphs to start on next line (that is, there is no need of an extra line between paragraphs if paragraphs are formatted as suggested). No paragraph indent necessary.
3. Use **Times Roman** font for all text. In paragraphs use boldface or italic for emphasis only. The proper fonts recommended (all Times Roman) for various elements are:

Chapter title	16 pt bold title case
Section Heading	12 pt bold title case
Subsection heading	12 pt italic title case
Body text	12 pt normal, justified to both margins
Figure/Table captions	12 pt normal
Footnote text	9 pt normal

Other fonts that could be used are Arial, Courier New. However, choose an appropriate point size to roughly match the letter sizes indicated above.

4. Each **chapter** must start on a new page. **Chapter title** centered in Title Case. Chapter number centered on separate line above chapter title. Leave one line below chapter title before starting chapter body. **Section/Sub-section number with title** must be on a separate line by itself, flush left, in Title Case and should not be centered/indented. Format these title lines as paragraphs with 6pt space after paragraph end (that is, section/subsection title lines should have a little extra space above and below the title). Keep titles brief and descriptive. Avoid starting with articles or prepositions, e.g., "The study of ..."; "On the ...". Spell out acronyms in titles unless they are widely known. **Number sections** sequentially in

each chapter (that is, 3.1, 3.2, 3.3, and so on in chapter 3 followed by 4.1, 4.2 ... in chapter 4). **Number subsections** according to the following example: Sec. 3.1.1 is the first subsection of Sec. 3.1; Sec. 3.2.2 is the second subsection of Sec. 3.2.

5. If it is necessary to use a **bulleted list** in the report, restrict it to one level only. Use – as bullet type. Indent the bullet list by 0.25”.
6. Typeset all **equations** as displayed equations (that is, on separate line/lines). Avoid inline equations in sentences. Type display equation numbers in Arabic numerals in parentheses flush with the right margin. Number display equations consecutively in each chapter (that is, as 3.1, 3.2 ... in chapter 3; 4.1, 4.2 ... in chapter 4 etc.). If using MSWord, use the equation editor, instead of trying to compose them through text mode. Because of page limitations give equations only where they are essential to the understanding of the point under discussion.
7. All **symbols/notation** used in text/equations in the chapters must be defined properly, wherever they occur for the first time in the report (inspite of this also being done in nomenclature). Similarly all **acronyms** must be elaborated at first occurrence in the chapters. Symbols/notation other than Greek and mathematical symbols, referred to inline in the text must be emphasized (use italics). For example use *R* in text to refer to this as a symbol for radius rather than “R”. Never refer to this as simply R in text.
8. One type of **matrix/vector notation** often used is **BOLD CAPS** for matrices and **bold small** case for vectors. In this case all scalars must be in normal font. Alternatively matrix symbols may be enclosed in [] and vectors in { }.
9. As far as possible **figures** (particularly block diagrams, simple line drawings, simple graphs) and all **tables** must be computer generated. Also as far as possible **Figures and tables** must be placed within the text close to where they are first referred to. Figures and tables should be **clear and legible** but sized to make economical use of space, and must fit entirely within the text area (that is, not spill over into the margin space). A good idea would be to place the figure or table at either the bottom or top of the page without breaking page and allow the text to flow around it. Similar or related figures should be of uniform size with uniform lettering. All figures/tables included must be called out (referred) in the text as well as properly **labeled and captioned**. Label figure/table numbers chapter-wise similar to equation numbers or section numbers. In case of figures their labels and captions should be placed below the figure, whereas in case of tables they should be at the head of the table. **Figures/Tables which are not computer generated** (Line art) should be **scanned** from original artwork (pen-and-ink) and the image, scaled to size, must be clearly readable. Type in your own captions below the scanned images.
10. Only if it is not possible to computer generate or scan figures specially those from literature, as in the case of seminar reports, then a **good quality, clear legible photocopy of the figure**, of the correct size, can be pasted at the positioned location in the final printout, after taking care of requirements as stated in 9 above. Provide and block the right amount of space using a frame or box to allow the pasting to be done later. Take adequate care of correct orientation while pasting. Do not photocopy the original caption. Type in your own captions below the pasted figure. Only good quality photocopies of such pages should be part of the

submitted copies of the report. Do not submit report copies having pages with the pasted figures.

11. Avoid bunching of figures/tables on separate pages at the end of the chapters. Although this is not disallowed, it is discouraged.
12. Adjust/edit figures/tables and text so that most **pages are optimally used**. The last page of a chapter should not end up as a page with only two-three lines. Avoid formatting pages that will leave large areas of wasted white space, except where it is necessary to avoid starting new sections at the bottom of the page.
13. While typesetting, take care that **extra hard spaces** are not inserted between words or before/after commas and full stops. This is a common problem seen with first time users of word-processing software. **Hyphenate large words** where necessary to avoid large white spaces in the justified text. Most software have this facility along with hyphen help.
14. **Avoid paragraphs** that are **too short** (less than 3-4 lines). So also avoid paragraphs that are **too large**, such as those filling up almost the whole page.
15. **Referencing**. Reference numbers should be cited within the text as well as figure/table captions either as **superscripts or enclosed in square brackets**. All references should be numbered (Arabic numerals) in the order in which they are first cited in the report. Strictly **avoid citing references in chapter/section/subsection titles**. In seminar reports, which are almost entirely based on existing literature, references must be adequately cited. However, do not overdo this. References are cited to convey to the reader that the idea, concept, formulation, data, inference or information being discussed is attributable to the cited literature. Citing references is not to be taken as acknowledgement of verbatim statement or paragraph as belonging to a particular source. **In fact the report must not have such verbatim copy of matter from literature**. All **figures/tables**, which are taken from literature, must be acknowledged by **citing the reference number at the end of the caption**.
16. **Reference sources**: The main reference sources include books/monographs/handbooks, archived journal papers, conference papers in published proceedings, institutional technical reports, theses, dissertations and other archived reports and standards. References to less formal sources including pamphlets, magazines, manuals, personal communication, etc., are generally to be used only for citing data, specifications, hardware/software, work in progress, restricted information. Consult your guide about correct use of such sources. Internet websites are also increasingly becoming an important source. However, it should be noted that Internet references should not form the entire list of references. Allowing URLs as references must not be misunderstood to mean that all Internet material is acceptable. Internet material may be transitory, may not be technically reviewed and may have questionable authenticity, that is, it may not be proper archival material. It may be used as secondary information source to supplement the main sources.
17. **Calling of figures/tables/equations/sections/subsections** in the text is to be done as Fig. 3.2; Table 4.1; Eqn. 2.5; Sec. 4.2.; Sec. 4.2.2 respectively.
18. **Reference List**: List references at the end of the paper in numerical order. Include the following information (as applicable). See Annexure III for sample.

- For a book: author(s), book title (italicized), page or chapter numbers, publisher, city, year.
- For a journal paper: author(s), "paper title" (in quotes), journal name (italics), volume number, issue number, year, page numbers (inclusive).
- For a proceedings paper or chapter in an edited book: author(s), "paper or chapter title" (in quotes), volume title (italicized), editor(s), volume number (if applicable), page numbers (inclusive), publisher, city, year.
- For an internet source: author(s), "webpage title" (in quotes), Institution/Organisation name, URL in italics.

19. **Units:** Use only SI units in the report.

ANNEXURE I (This line not to appear)
Format of the cover page (This line not to appear)

TITLE OF THE SEMINAR/PROJECT REPORT

**AE 694 – M.Tech Seminar or AE 397 B.Tech. Seminar or
AE 496/AE497 B.Tech. Project or
AE496/AE595 M.Tech. Project (DD) Stage I/II or
AEP601/AEP602 M.Tech. Project Stage I/II**

By

**Name of the student
Roll No.**

Under the guidance of

Guide's Name



**Department of Aerospace Engineering,
Indian Institute of Technology, Bombay
Month, Year**

ANNEXURE II (This line not to appear)

Certificate

Certified that this M.Tech./B.Tech. Seminar/Project Report titled “Title of the report” by “Name of the student” is approved by me for submission. Certified further that, to the best of my knowledge, the report represents work carried out by the student.

Date:

Signature and Name of Guide

ANNEXURE III (This line not to appear)

Sample Reference List (This line not to appear)

Sample book reference:

1. Megson T.H.G., *Aircraft Structures for Engineering Students*, 2nd ed., Chap. 8, pp 220-225, Edward Arnold, London, 1990.

Sample journal paper reference:

2. Salunkhe A.S. and Mujumdar P.M., "Identification approach to estimation of buckling load of damaged composite plates," *AIAA Journal*, **Vol. 36**, No. 8, 1998, pp. xx-yy.

Sample Conference Paper reference

3. Lakkad S.C. and Mujumdar P.M., "Experimental investigation of the effect of dropped plies on the strength of graphite/epoxy laminates", in *Advances in Testing, Design and Development of Aerospace Structures, Proc. of the 5th National Seminar on Aerospace Structures (NASAS)*, Eds. Mujumdar P.M. and Joshi A., pp. xx-yy, Allied Publishers Ltd., New Delhi, Jan. 1996
4. Sankar M.R., Issacs A., Mujumdar P.M. and Sudhakar K., "MDO Framework development – a case study with an elementary model of Airborne Early Warning System optimization", AIAA Paper 2000-5510, *Proc. Of 9th AIAA/ISSMO Symposium on Multidisciplinary Analysis and Optimization*, Atlanta, Georgia, September 4-6, pp. xx-yy, AIAA, 2002

Sample internet source reference:

5. "Current Research", Centre for Dynamics and Control of Smart Structures, <http://www.isr.umd.edu/CDCSS/cra.html>

Note: References to be listed not as shown above but in sequence 1, 2, 3... as shown below

[1]

[2]

[3]

