

General Guidelines about Preparing Petroleum Engineering Project Reports/Theses

Prepared by Dr. Mofazzal Hossain, Department of Petroleum Engineering Curtin University

The objective of the project is to ensure that the student has mastered the subject matter of the course and is able to apply the knowledge gained to a real life situation. This project work is the part of the formal degree requirements, which you have to complete successfully through submission of a report/thesis. The completed project, which is documented in a report/thesis, must be submitted to the undergraduate coordinator for examination by the specified due date. The project grades will be based a formal presentation and report marks. The timing of the presentation will be organized by the department during 2nd semester break period. The exact date of report submission and oral presentation will be advised in due course.

The project report has to be written clearly targeted at an audience from the wider professional bodies who will understand the content without having an understanding of the specific technical details. It is imperative that the findings of the work are reported clearly. This note offers some guidelines on these matters.

The report has to cover following generic items:

- **Background:** This should be a brief paragraph that sets the scene.
- **Purpose:** The purpose states why the work has to be done. It should be specified clearly and precisely, and be relevant to the broader subject matter. It should not comment on how the work was done.
- **Objectives:** Objectives are what the work attempts to achieve. Typically this would be a list of the major achievements in support of the purpose of the work. The objectives should be **SMART**. (Specific; Measurable; Agreed; Realistic; Time Based)
- **Scope:** The scope describes the contents of the work and as such defines the boundary between what was and what was not done. This should not just be a list of additional tasks that could have been performed in support of the study but should also give some insight into the quality and depth of tasks that were carried out.
- **Assumptions:** Any relevant assumptions, or “givens”, should be recorded with some form of justification.
- **Constraints:** Any relevant limitations in resources and methods applied should be listed.
- **Deliverables:** The deliverables are directly related to the objectives and should be listed concisely. It is upon these that the success of the study will ultimately be measured.
- **Resources:** The resources used to perform the work should be recorded in a consistent manner.

Report Format

The report should be logically structured and suitably compiled to meet the expectations of the targeted audience. In this regard it is important to know who your targeted audience is and to make sure that what is presented is appropriate. As mentioned earlier your targeted audience may not have the understanding of specific technical details of the subject matter of the project, so it is your job to make them understand by writing clearly via your report.

The report should begin with an **Executive Summary**. This section should outline the background, purpose and major objectives of the project in brief, together with the major findings and conclusions of the work undertaken. It should be written such a way that by referring only to the **Executive Summary** it should be immediately clear to the readers whether what is being presented in the rest of the report is relevant to them. The precise structure of the main body of text will depend on the project but the emphasis must always be on “logical flow” and “readability”. Sensible use of appendices to include, for example, repetitive data or supporting information, can enhance the “readability” considerably.

One of the last sections of the report will contain the conclusions. No new information (or references to other work) or “surprises” should be presented here; the conclusions must be a logical consequence of the work carried out. The final section usually contains suggestions/recommendations for future work. This might be appropriate if some stated objectives were not fully met or if it has become clear through the study that there are opportunities to improve the understanding of the subject matter (especially when the current results are based on some specific assumptions, which restrict the broader perspective of the results).

As a general comment, reports should NOT be “*streams of conscious thought*”. *Nothing is guaranteed to confuse and annoy the reader more!*

The report should be typed 1.5-spaced with a 12 point font (preferably Calibri or Arial) and should be no more than **60 pages** excluding appendices and references. Please note that what matters is the quality of the report and that it fully explains the story in a clear way, the number of pages does not reflect the quality of the report. The layout should be followed by:

(a) Title

The Title Page is page which contains the title of the projects with some details about the students, department/university, and date. The title of the project must be carefully chosen to be concise, yet it should include key words relating to the subject and the message of the report. You might start by writing down the key words by which your reports may be classified, then composing a title around those.

Your report will eventually be put in the University Library. Computerized searches on titles will rely on the title having the appropriate key words included in it. Make sure that your report title is one that can be found.

This page also includes the name of University and the Department, followed by the title of the project, Students name, Supervisor’s name and the month of completion Contents

(b) Executive Summary (ES) – as explained earlier ES should outline the background, purpose and major objectives of the project in brief, together with the major findings and conclusions of the work undertaken. Try to complete your ES within 1 page. However, it should not be more than 2 pages and is preferred as a single page.

(c) Dedication-This is an **optional one page**; it should be brief and focused on addressing loved ones, friends and relatives without the support of whom it may not be completed. *Note that*

the Dedication is private and you do not need to explain anything to the rest of the world if you don't want to.

(d) Acknowledgments

All projects in this department are supported internally or by externally driven source(s), and must be acknowledged. Perhaps your friends helped you with your work. You may have been given time off work by your employer to complete your studies. Whether you realise it or not, your supervisors usually put much more time into devising projects, supervising and editing than is apparent. They may have given you one of their pet ideas to research, instead of waiting until they had time to do it themselves for their own credit. Take care not to leave out of this section reference to anyone or anything of significance deserving of acknowledgment. To ignore them is very poor form.

The acknowledgement section has to be placed in a separate page before the table of content.

(e) Table of Contents

The Table of Contents may commence with Chapter 1. Make absolutely sure that the Chapter headings are exactly the same as in the text. If they seem too long in the Table of Contents, then shorten them in the text. Where you have used numbered sub-sections, then these need to be listed in the **Table of Contents**, and indented. Your word processing package may have facilities for automating this. Keep the page-numbering continuous, right through to the end, including References and Appendices.

(f) List of Figures and Tables

The Figure Captions/Title should follow a consistent format. Following form is suggested:

Figure x.y Followed by the Figure title.

This is then followed by one or more explanatory sentences to enable it to be understood in 'stand-alone' form. Where **x** is the chapter number and **y** is the number of the figure within that chapter. Note that the figure title/caption is not a sentence. Figures are numbered within each chapter only, and not within the sections of chapters.

As with Figures, each Table will have a title following the same style. Tables are numbered within each chapter in a similar way to figures.

Body of the report:

The Body of the Report consists of the Chapters, starting with Chapter 1 (probably called Introduction), through to the last chapter (probably called Conclusions). These are numbered with regular numbers, which may be centered at the bottom of the page. A running chapter heading is very useful, and may be included as an option.

Many report or theses are usually written with following generic chapter headings in chronological order:

1. Introduction
 - Literature Review (if any)
 - Background Theory/Methodology
2. Investigation carried out
3. Analysis and discussion of Results
4. Conclusions and Recommendations
5. References
6. Appendices

Above names are generic, and feel free to modify the heading according to the nature of your work. You may add additional chapter/section as you required. Please discuss this with your supervisor. Each of the main heading may have multiple subheadings.

(g) Introduction:

The introduction should be insightful. It should start with background and general overview of your works, and definitions or scope of the problem, information gaps, and objectives, key findings followed by brief statements of what is/are presented in the report (i.e. a brief outline of every chapters/sections of the report). Note that while writing the introduction, you should keep in mind that your introduction should provide an insight to reader(s) about the report.

(h) Literature Review (if applicable)

One of the main objectives of literature survey is to understand what has been done so far in line with your work, and what the gaps are; and/or what has been missing; and what needs to be done etc.. You need to synthesize those ideas and relate your works. In case if you are not agreed with any of the works, you provide justification of any argument you made. You may need to establish why you need to do something different in case you are proposing something different. You may also provide what additional features you are going add.

(i) Background Theory/ Methodology

This work naturally falls into sub-components then each sub-component should be logically arranged. The followings may be considered as suggestion:

- Introduction
- Methodology, theory/model and assumptions (if any)
- Results, Investigation/Analysis and Discussion

(j) Analysis and discussion of overall results

(k) Conclusions

(l) Recommendations for Further Work

(m) References (listed as they appear in text. Do not provide references which do not appear in the text)

All references have to be cited following a consistent referencing style (e.g. Chicago referencing style) in body of text. The same style has to be followed throughout the report. Information about Chicago referencing style can be found at

<http://library.curtin.edu.au/local/docs/referencing/Chicago-referencing-guide-sem1-2010.pdf>.

(n) Appendices (if any)

These are labelled Appendix A, Appendix B etc. Page numbering continues on from the previous section. Each appendix should be self-contained. There should be a title page stating the title, and what is in it. If an appendix is long, there needs to be a Table of Contents for it.

Figures and equations are needed to be numbered within each Appendix.

Each of the appendices has to be referred appropriately in the main body of the text.

General notes on Figure/Table/Reference:

- Each figure should be placed after the first quote or paragraph in a space. Do not include figures in line with the text. Figures are to be numbered followed by appropriate title/captions within each chapter (as explained earlier). The caption for a figure is placed at the base of the Figure, while the caption for a table can be placed before or after a Table.
- All figures/tables number has to be referred within the body of the text. When a figure is referred to specifically in the text use a capital 'F' since it is the name of a specific figure, otherwise use a lower case 'f'. For example: *"Selected ray paths are shown in Figure 4.3 where it can be seen that zone AB is not strongly illuminated. Elsewhere in the figure, densely spaced rays indicate strong illumination."*
- Make sure that everything in each figure can be read and understood. There is no use presenting the reader with information which cannot be read or understood. Any legends used in any charts/maps/Figures are to be clearly visualized.
- In case of any chart/graph, all axes are to be labelled clearly with appropriate units (if any) so that there are enough labels to enable the reader to work out what it is all about, without having to try to find the point in the text where reference is made to the figure.

Note that submissions that fail to meet the above basic requirements will **not be marked** and will automatically be recorded as a **rejection**.

As a general comment, reports should NOT be "streams of conscious thought". Nothing is guaranteed to confuse and annoy the reader more!

2. Copies

Candidates should agree with their supervisor on the format of draft submissions. Once the project submission has been approved the candidate should submit 2 bound copies, plus an electronic copy (floppy/CD), to the departmental secretary. A bound copy will be placed in the archives; the second copy will be placed in the Departmental library.

3. Abstract / Executive Summary

A separate copy of the abstract/executive summary only must be lodged with the Project Coordinator via the departmental secretary.

4. Timing

Candidates should aim to make their final submission by the last day of examinations in that semester. Late submission may cause delay in graduation or a fail mark.

5. Compliance

Failure to meet the above requirements may result in returning the report to its author unmarked.

Note 1. The earlier a project is commenced the sooner it is completed. Do not even consider leaving the project until the last week before presentation- this could prove a disaster.

Note 2. Project reports must be handed to your Project Supervisor for examination no later than close of business on the last day of semester examinations. This provides the supervisor time to mark. Projects handed in after this date will result in a reduced mark, potentially failing the student.