

Guidelines for Students Writing MSc Dissertations



INTRODUCTION

This guidebook contains important information about rules and procedures for MSc students who are undertaking the Coursework and Dissertation option. Students who opt in to complete a project dissertation is required to successfully complete and submit their Master Thesis Dissertation to qualify for degree conferral. Please follow the information on how to submit your dissertation and requirements for dissertation formatting.

APPROVAL OF DISSERTATION SUBJECT

To ensure legitimacy and suitability of the project, the title of the dissertation must be approved in advance by the student's supervisor. Thereafter, students will register the project through the **GSLink Graduate Registration System - MAE MSc Dissertation System**.

If you have any questions regarding proposing a topic for your project, please approach your Programme Director for advice.

Program/Program Director		Contact Details
Master of Science (Smart Manufacturing) Associate Professor Murukeshan Vadakke Matham	Tel: Email: Office:	6790-4200 MMurukeshan@ntu.edu.sg N3.2-02-75
Master of Science (Supply Chain Logistics) Associate Professor Rajesh Piplani	Tel: Email: Office:	6790-5601 MRPiplani@ntu.edu.sg N3-02c-84
Master of Science (Mechanical Engineering) Associate Professor Xiao Zhongmin	Tel: Email: Office:	6790-4726 MZxiao@ntu.edu.sg N3.2-02-06
Master of Science (Project Management) Associate Professor Sivakumar Appa Iyer, Siva	Tel: Email: Office:	6790-5050 MSiva@ntu.edu.sg N3-02c-77

SUBMISSION OF SOFT-BOUND OF DISSERTATION TO MAE GRADUATE STUDIES OFFICE

Important Note on Plagiarism

The University and School take a very strong view on plagiarism. All students are hereby informed that plagiarism in all forms from open printed literature and public access domains (such as internet) is a serious offence in research. All references to published literature either in printed form or public access domains must carry the appropriate citations to the source of the information and to copy verbatim from such sources is strictly prohibited. In addition, all students are hereby informed that the School takes a serious view on infringement of copyright of published. Students are required to submit their dissertations for originality check using the **Turnitin or iThenticate software**.

Students whose report contains **a similarity index of more than 20%** (excluding references) will be notified through their Supervisors. Students must revise and re-submit the final report **within a week** and if the students did not revise their reports and/or the revised report still contains plagiarism, they will be awarded a 'Fail' grade.

Timeline

The dissertation must be submitted to MAE Graduate Studies Office in conformity with the deadline date established in the **MSc dissertation registration form**. All students must complete and submit a dissertation within the prescribed period.

For students who intend to attend the Convocation Ceremony in July of the current year, they should **submit at least 4 months before** to the Graduate Studies Office of MAE. This is to allow ample time for examining, undertaking any (major or minor) amendments and for the examination reports to be circulated. As such, students are highly encouraged to complete and submit their Dissertation as early in the semester as possible.

Submission Checklist for Examination

Student is required to submit the followings items to Graduate Studies Office, MAE to follow-up on examination process:

- ☐ **A complete copy** (in PDF) of the Dissertation report, ready for examination.
- ☐ Completed Form A – Dissertation Submission Form (endorsed by both supervisor and student) should be submitted for examination through your supervisor.
- ☐ Turnitin Originality Report (in HTML format). Students are required to submit their drafted and final version of the dissertation to Turnitin via iNTUlearn to obtain an originality report.

- ☐ Completion of **online Epigeum Research Integrity (RI) course certificate**.
- ☐ Dissertations must be submitted in their final format, as described in the section - **Formatting Guidelines**.
- ☐ (If applicable) Students are responsible for notifying the administrator at NTU Graduate Studies Office of any **Non-Disclosure Agreement (NOA)** that has been placed on their work. Please download **Form B-an NDA request form** and attach any supporting official documents.

Complete all the details and submit the forms together with the Dissertation to:

MAE Graduate Studies Office

N3-02a-29

50 Nanyang Avenue Singapore 639798

Email address: mae.msc@ntu.edu.sg

Attn: Ms. Amy Cheung

Subject: Submitting Dissertation for Examination (MSc **xxxx** Programme)

FORMATTING GUIDELINES

The Dissertation must meet international standard in terms of quality. The Dissertation should be printed in English, in the third person. Students are advised to refer to the following format for the Dissertation write-up:

Length

There is no prescribed length to the Dissertation; however, a good guide would be around 60 to 100 pages in length around **10,000 words to 15,000 words**, excluding charts, diagrams, appendices, tables, references etc. You must use your own words and are not allowed to copy directly from books, technical reports, etc. The Standard International Units (SI) should be used.

Physical Requirements

Style of font (or typeface) and Font Size

- Times New Roman, font size 12
- The same type setting should be used in the main text of the report to ensure that the letters do not vary in size, type and shade.

Spacing

- One and a half or double line spacing should be used throughout body of text.

Margins

- The margin on the **left-hand side** must be about **3.7 cm**.
- On the top, bottom and right-hand side, a margin of **3 cm** is recommended for **comb-bound** Dissertation.

Paper weight

- White A-4 size bond paper of at least 80g wt. should be used.

STANDARD OF WRITING

The Dissertation should be logically laid out. The writing should be in grammatically correct, clear and concise English. There are many books in the NTU library (in the section with top level call number T11) providing guidance on writing technical reports; a few of them are given in the **Reference** [1-4].

Any attempt to provide guidance or feature common errors here will run into many pages. So, we will refrain from doing that except to say one thing: if a word (or phrase or sentence) can be deleted without changing the meaning of what you want to say, then delete it.

All figures and tables should be numbered sequentially, chapter by chapter, and be given a caption. Each must be referred to in the main text, and wherever possible appear near to where it is referred to.

CONTENTS

First and foremost, the contents of your work must be relevant to the MSc Programme you are pursuing. Rather than the actual contents, which will vary from Dissertation to Dissertation and from Programme to Programme, this section describes the general areas which a Dissertation should address. While these areas are not necessarily universal, i.e., common to all Dissertations, they are more the norm than the exception. The sample Contents page in Appendix B gives a good summary on these areas.

1. The **Abstract** should be a short and concise passage on the important work and contributions of the project: the motivation and the problem pursued, the method you employed, and the results obtained, highlighting the significant achievements. It should not contain peripheral things like the summary of literature review, and if it is not good enough to say that a certain issue has been studied without stating the results of the study. Generally, one page is about the right length for the Abstract.
2. The first chapter of the Dissertation is almost invariably the **Introduction**. Generally, its purpose is to lead the readers into the problem you intend to attack in the project, to set the scene. The main points here consist of the *background* to the problem and your *motivation* in solving it. This then leads into the *objectives* and the *scope* of the project. It is good to conclude with your Introduction a section on the *layout* of the Dissertation. It prepares the readers for what is to come.
3. Then comes the main part of your work. To lay the ground, there should first be a chapter on what has been done before on the problem - a **Literature Review**. This is an important section because it shows that you do not narrowly focus only on what you do, but are aware of the related work elsewhere, some of which might be instructive to your solving of the problem. It can also explain why you are taking this direction.

4. The next few chapters should describe the work you have done in tackling the problem. There might be a chapter on the fundamental theories relevant to the solution you are pursuing, or the supporting technologies you need in implementing the solution. Then, there should be a chapter on the solution itself, followed by a chapter on the results and analysis of the results.
5. The last chapter is always the **Conclusion**. This generally should have three parts. The first is a concise *summary* of the work you have done. In a way, this is similar to the abstract. Then there is the conclusion, in which you highlight the significance of the results, and perhaps the consequences of the results, critically where necessary. The last thing is usually *recommendations* and/or *future work*, in which you identify the inadequacies of what you have done and suggest how the gaps may be plugged.
6. Generally, there should be no more than six or seven chapters in your Dissertation. If you have more than that, you should take a close look at its organisation and see if certain chapters can be merged.

REFERENCES

- [1] A Guide to Report Writing, School of Mechanical and Production Engineering, Nanyang Technological University, 1994. (Library call number T11.G946.)
 - [2] Blake G. and Bly R.W., The Elements of Technical Writing, MacMillan, 1993. (Library call number: T11B661.)
 - [3] Blicq R. S., Technically-Write, Prentice-Hall, 1992. (Library call number: T11B648.)
 - [4] Turk C. and Kirkman J., Effective Writing, E & FN Spon, 1989. (Library call number: T11T939.)
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AFTER DISSERTATION HAS BEEN EXAMINED AND APPROVED BY SUPERVISORS

Starting from November 2018, submission of the final dissertation in electronic format is compulsory for all masters' students before the degree can be conferred. Students will not be required to submit any hard-bound copy of the dissertation to MAE's Graduate Studies Office or NTU library. The electronic copy of the dissertation must be in Adobe Acrobat PDF format.

Without NDA: Students are required to check that the uploaded final dissertation (Master by Coursework) is the final, complete and correct version. Thereafter, upload at <https://dr.ntu.edu.sg/>

With NDA: Students are required to write-in to NTU Library at acquisition@ntu.edu.sg indicating your (1) full name, (2) matric number, (3) title of dissertation, (4) program of study and (5) year of submission with the following email subject: **"Request to Opt-out from Electronic Dissertation Submission"**.

In your email, please state the valid reason(s). You may wish to use the following reasons:

- Dissertation contains confidential/proprietary information which the supervisor(s)/student wants to use in the patent application and has not done before.
- Dissertation contains confidential intellectual property and third party proprietary information.
- Other reasons (to specify).

*******With effect from January 2019, Office of Academic Services (OAS) will require all MSc students to include the following three declaration statements in all dissertations and ensure they are signed and dated:**

- 1. Statement of Originality**
 - 2. Supervisor Declaration Statement**
 - 3. Authorship Attribution Statement**
- For more information, please visit this [webpage](#).

Please copy your Dissertation Supervisor and the School's administrator (Email: mae.msc@ntu.edu.sg) the **DR-NTU Submission Approved and Archived** email from the NTU Library.

Samples of the following items can be found in the following appendices:

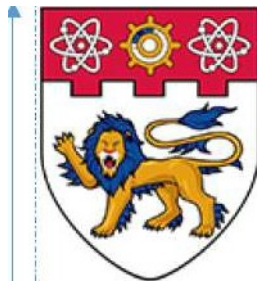
- *Dissertation Cover Template (Appendix A),*
- *Table of Contents (Appendix B) and*
- *Extract on the method of listing references (Appendix C)*

3.0cm

3.7cm

4.0cm

5.0cm



**NANYANG
TECHNOLOGICAL
UNIVERSITY**
SINGAPORE

110cm

DESIGN AND ANALYSIS OF VERTICAL AXIS WIND TURBINE USING CFO

JENNIFER HO XIUWEN

SCHOOL OF MECHANICAL AND AEROSPACE ENGINEERING

A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN **XXXXXX**

202**X**

4.5cm

3.1 cm

(Appendix A) Sample of First Page in Dissertation Template with NTU Singapore Logo

The size of the title page

Length: 297mm (A4 size); Width: 210mm (A4 size)

To note: Template is not drawn to scale

- **Body Text: Arial**

Sample - (Appendix B)

Table of Contents

Abstract <i>(no more than one A4 page)</i>	i
Acknowledgment <i>(optional - to give recognition of any advisory or financial assistance received during the work on which the report is based (no more than one A4 page))</i>	ii
LIST OF ABBREVIATIONS <i>(optional)</i>	iii
LIST OF SYMBOLS <i>(optional)</i>	iv
LIST OF FIGURES <i>(optional)</i>	v
LIST OF TABLES <i>(optional)</i>	vi
Chapter 1 Introduction	1
1.1 Background and Motivation	2
1.2 Objectives and	
1.3 Specifications Scope	
1.4 Organisation of the Dissertation	
Chapter 2 Literature Review	10
2.1 XXX	
2.2 XXX	
Chapter 3 (Actual work done and contributions, including literature survey)	
3.1 XXX	
3.2 XXX	
Chapter 6 Conclusion and Recommendations	
6.1 Conclusion	
6.2 Recommendations for further research	
References	
Appendix A <i>(optional)</i>	
Appendix B <i>(optional)</i>	

APPENDIX C: EXTRACT FROM A DISSERTATION

SUPPLEMENTARY ELEMENTS

The supplement element consist of the List of Reference and the Appendices.

1, References

Documents that are prepared with the help of other sources should have a list of sources cited. A list of references contains only sources the write quotes directly takes original ideas from, and refers to in the Dissertation. In reports where the subject is primarily scientific, the list of references is the most widely accepted way to cite specific sources.

1.1 Listing of references

Details of reference which are cited in the text are listed at the end of the text. Details given under both APA and Numbered References Methods are identical but the order in which references are listed is different.

1.1.1 APA author/year system

In the APA author/year system, the entries are arranged alphabetically by the surname of the author.

1.1.2 Numbered references method

The Numbered References Method uses an Arabic numeral as internal citation. The numeral refers to the entry in the list of references. The entries in the list of references are arranged by order of their appearance in the text. Many technical journals have adopted this method for ease in printing. (It is more economical to print one number rather than many names and dates). This method is also commonly used in short technical reports that have only 2 to 3 references. The difficulty with this system is that if a new source is inserted in the list, all the entries in the list and references in the text need to be renumbered.

1.1.3 Entries in the List of References

The format for the entries in a list of references is as follows:

i) With the APA Methods, arrange all entries in alphabetical order. Determine the alphabetical order by the author's surname or, if no author is listed, by title, disregarding the, a, or an.

ii) With the Numbered References Method, number each entry according to its order of appearance in the report. The format of entry listed below, is the same for both the APA Method and the Numbered References Method.

1. In a single-author entry, list the author's name in the following order: surname, first, middle name or initial. In multiple-authors entry list, the subsequent authors' names in reverse order, eg. Wang, Henry.

2. The year of publication should follow the author's name and precedes the title.

3. Insert periods between the basic components of author title, and facts of publication.

4. For articles and books, capitalize only the first letter of the title and subtitle and proper nouns. Use standard title capitalization for periodicals, i.e. capitalize the first letter of every word except conjunctions and articles. Title of books or periodicals should either be underlined or printed in italics.

5. Omit page numbers from book entries. In periodical entries, however, give inclusive page numbers for each article.

NB Do not number entries if the APA method is used. In case of the Numbered References Method, number the entries according to their order of appearance in the text.

Examples:

Entries with one author:

Martin, Jacob. 1988. Slender body oscillation under simulated atmospheric boundary layer condition. *Engineer Digest* 52 (19): 112 - 116.

Morehead, David 1989. *Fundamentals of heat transfer*. 3rd Ed. New York: States Publishing House.

Entries with two authors:

King, R.W., and Magid, J. 1982. *Industrial hazard and safety handbook*. London: Butterworth Scientific.

Percy, K. E., and Grant, S. A. 1987. A multivariate analysis of element concentrations in sphagnum magellanicum bryd in the Maritime Provinces, Canada. *Water, Air, and Soil Pollution* 25 (July): 33-38.

Entries with three authors:

Teo, R., Rye, W., and Abbas, A. 1985. *Heat transfer mechanism*. Washington: Engineering Society.

Rudnic, E.M., Chan, J. L., and Rhodes, C.T. 1987. Effect of molecular variation on the disintegrant action of sodium starch glycolate. *Journal of Pharmaceutical Sciences* 72(6): 345-57.

More examples:

Corporate Author:

Alphabetize corporate authors by the first significant word. When the author and publisher are the same, use the Author for the name of the publisher.

National Broadcasting Company. 1989. *Heat transfer mechanism* - New York: Author.

Book without an author or editor:

Alphabetize a book with no author by the first significant word in the title; in this case uniform.

A uniform system of citation. 1988. Cambridge, MA: Harvard Law Review Association.

Symposium Paper Published in Conference Proceedings

Mulik, P. R. 1981. High-temperature removal of alkali and particulates in pressurized gasification systems. Paper presented at the American Society of Mechanical Engineers Conference, March 9-12, 1981, Houston, Tex. ASME Paper No. 810GT-67.

Public Document

U.S. Environmental Protection Agency. Office of Research and Development. 1979. *Energy alternatives and the environment*. EPA-600/9-80-009.

(The acronym and set of numbers are an access code for the document, should you want to order and read it.)

Dissertation

Mann, E.A. 1988. An economic application of engineering principles, Ph.D. diss., University of California, Berkeley.

Personal Communication, Interview or Lecture

Fisher, S. Professor of Physics, Quantum University. Letter to author, 16 February 1987/ (1987, February 18).

Fisher, S. Interview with author, 16 February 1987 / (1987, February 16).

Stittles, N. Physics 233 Lecture, 22 March 1986 / (1986, March 22).

Unpublished Lab Report, Log, Etc.

Markham, N.E. 4 April 1987. Robotics: Imitating the human thumb. Submitted to Dr. R. Roper, Computer Engineering 255, West Virginia University.

Questionnaire

Follow-up study on lay-offs at EFFE, Inc. July 1985. Data derived from questionnaires administered to 65 laid-off Technicians, in Shanghai, China.

Information Derived from a Database Service

Benum, P., et al. 1977. Manufacturing information system for the production of centrifugal pumps. Engineering Plus 48(2):150-57. DIALOG, INDEX MANUFACTURE, item 129357577198585.

Article in an Anthology

- Capitalize only the first word of the essay title
- Use zip code abbreviations for states

Roberts, G. and Kates, M. 1988. Digital processing in audio signals. In B.C. White (ed.), Applications in digital sound processing. Englewood Cliffs, NJ: Prentice-Hall, 29-100.

2. Appendix

The appendix contains related data not necessary to the immediate understanding of the discussion in the report. This may contain materials such as: tables, graphs, illustrations, description of equipment, samples of forms, data sheet, questionnaires, equations, and any material that must be included for record purposes.

Each entry (sample forms, detailed data for references, tables, pictures, questionnaires, charts, maps, graphic representations) in the appendix requires an identifying title. Every entry in the appendix must be referred to in the body of the report. Each appendix must be lettered, beginning with Appendix A. The list of appendices should be appearing in the table of contents following the list of references entry.

Form A – Dissertation Submission Form

NANYANG TECHNOLOGICAL UNIVERSITY
MASTER PROGRAMMES BY COURSEWORK & DISSERTATION
SUBMISSION OF DISSERTATION

R/768/95

Notes to Candidate:

1. A candidate is no longer liable for the payment of tuition fees when he/she satisfies both the following conditions: -
 - (a) He/she must have completed the entire coursework component of the programme of study, and
 - (b) He/she has submitted his dissertation in the form ready and approved (by the Programme Director concerned) for examination not later than the end of the second week of any semester.
2. Two comb-bound copies of the dissertation must be attached to this form. Section I of which must be completed and signed by the candidate. Unsigned forms may delay processing of the submitted dissertation for examination. After completing Section I, please submit this form to your supervisor by hand.
3. Submission of Final Dissertation in Electronic Format

The Examiners will review the Dissertation and return it to the MAE Graduate Office with a confidential report. If further amendment is required, MAE Graduate Office will inform you through the Supervisor. You will then be required to submit the final dissertation, after examination and amendments (if any) to the satisfaction of your supervisors. You should check with your supervisor on the preferred way to review the amendments.

If there are no amendments, check that the final dissertation follows the same format as the dissertation for examination/ re-examination, which is as follows:

(a) The dissertation must be preceded by the following in the order given: title page, abstract, acknowledgment, table of contents, list of figures (if any), list of tables (if any), list of symbols (if any), introductory chapter of the dissertation, text chapters of the dissertation, conclusion, references, appendix/ appendices (if any), all of which must be bound with the dissertation;

(b) The title and author's name must be given in block letters on the cover of the dissertation;

(c) Pages must be numbered in one continuous sequence in Arabic numerals.

The electronic copy of your dissertation must be in Adobe Acrobat PDF format. Check that the dissertation is the complete and correct version before uploading at <https://dr.ntu.edu.sg/>

You will be conferred with the Masters of Science degree once the dissertation is assessed to be satisfactory, provided you have completed the coursework requirement and passed the examination for all the courses.

Section I: To be completed by the Candidate

To Graduate Studies Office of MAE
Through Supervisor

Degree Registered for _____

Title of Dissertation _____

☐ I have submitted my Dissertation report in partial fulfilment of the above degree for examination

I have read and understood the **Notes to Candidate** above.

Name of Candidate	Matriculation No.	Signature	Date (DD/MM/YYYY)

Section II: To be Completed by the Supervisor(s)

1. The candidate named on Page 1 has completed the writing up of his/her dissertation to my satisfaction. In my opinion the dissertation is ready for examination.
2. Remarks (*attach separate sheet if necessary*):

_____ Name of Supervisor 1	_____ Signature & Date
_____ Name of Co-Supervisor (if applicable)	_____ Signature & Date

Section III: To be Completed by Programme Director

Approved/Not approved* (*Delete accordingly) for examination.
Comments (if any).

_____ Signature of Professor _____ (<i>insert full name</i>) MSc Programme Director	_____ Date
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Section IV: To be Completed by Graduate Studies Office of MAE

Date of Receipt from Student/ Supervisor		Date of Receipt from Programme Director (Approved for Examination)
Received by		Received by

UNDERTAKING TO SAFEGUARD CONFIDENTIAL INFORMATION

To: Associate Chair (Academic) of the School of Mechanical and
Aerospace Engineering (MAE)

Nanyang Technological University (NTU) 50 Nanyang Avenue
Singapore 639798

1. I hereby acknowledge that the School of Mechanical and Aerospace Engineering (MAE), NTU Singapore has nominated me to act as an Examiner on _____ (insert DD-MM-YYYY) for MSc Dissertation examination for _____ (insert full name of student, matric number) for a period of two months and I accept this nomination and agree to this Undertaking. During my participation as an examiner of the Student's examination that the Student may present or disclose to me certain confidential information, including but not limited to, patents, patent applications, patent drafts, copyright material, know-how, technical information, operational procedures, methods, techniques, procedures, experiments, results, plans of future research, examination papers, answers, any dissertation and any other information relating to the activities and research carried on by NTU and/ or the Student, all of which are strictly confidential or proprietary to NTU and/or the Student ("Confidential Information").
2. I understand at all times to maintain strictly secret and confidential and not directly or indirectly use or disclose or divulge the Confidential Information or any part thereof, to a person, firm or company, whatsoever without your prior written consent. I further understand that I shall be liable for any loss and/or damage due to my breach of this Undertaking and that I may also be subject to disciplinary action.
3. The preceding obligations of confidentiality shall not apply with respect to any information that: -
 - 3.1 is or was already known to me at the time of disclosure to it as evidenced by written records; or
 - 3.2 is at the time of disclosure or thereafter becomes public knowledge through no fault or omission of myself; or
 - 3.3 is lawfully obtained by myself from a third party who is not under any confidentiality obligation; or
 - 3.4 Is independently developed by myself as evidence by written record

4. I will not make or retain any copies of the Confidential Information or otherwise disseminate the same without the NTU's and/or your prior written consent. Upon request from NTU, I shall promptly return to NTU all documents containing Confidential Information and all copies and reproductions thereof.
5. This Undertaking shall survive in perpetuity and I shall continue to maintain my obligations should I leave NTU's employment.
6. This Undertaking shall be governed and construed in accordance with Singapore laws and I submit to the non-exclusive jurisdiction of the Singapore courts.

SIGNED by:

SIGNED by:

Name:
NRIC/ Passport No:
Designation: Appointed Examiner

Name:
NRIC/ Passport No:
**Designation: Program Director of
MSc _____ Program**

In the presence of

Designation: Assistant Chair (Graduate Studies)