# MACAU UNIVERSITY OF SCIENCE AND TECHNOLOGY

# Postgraduate Thesis Writing Guide

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# Macau University of Science and Technology
# Thesis Writing Guide for Postgraduate Degree

## 1. Basis of Thesis Writing

Each Postgraduate student must complete independently a professional related thesis during his/her study period and pass the assessment and oral defense examination monitored by the Oral Defense Committee.

## 2. Thesis Writing Process

2.1 Premise: Students who have completed all the prerequisite courses can commence their thesis preparation.

2.2 Topic selection: Students should first contact and discuss the thesis proposals with their supervisors. They can contact their supervisors any time in regard to the thesis, however, they must officially register the thesis topics within the prescribed period. If students have difficulty in choosing thesis topics, they should discuss directly with their supervisors.

2.3 Application: Once the thesis topic is selected, student must complete and submit a MUST's "Thesis Topic Form". Upon confirmation of thesis topic, Thesis Supervisors will be appointed to each student. (Note: Student may select his/her own Thesis Supervisor. Student must first acquire agreement from the selected Supervisor and then approval and confirmation from the Faculty.) Upon approval, both student and appointed Supervisor will receive a written confirmation notice.

2.4 Proposal: Within three weeks after receiving the confirmation notices, Master Degree students must submit a proposal report to their appointed supervisors. Supervisors will be giving two weeks to review, modify and offer suggestion. Once approved by the Supervisors, students can commence their thesis writing. For Doctoral Degree students, please refer to "The Procedures of Doctoral Degree Thesis" and "The Process of Topics Selection and Proposal".

2.5 Writing: For quality assurance and smooth development of the thesis writing, students should maintain an ongoing communication with their respective supervisors from the first stage of thesis writing.

2.6 Assessment: Upon completion of the thesis, students should submit to their supervisors for assessment. Two months before the Thesis Oral Defense date, Master Degree and Doctor Degree students must submit copies (four sets for Master Degree and six sets for Doctor Degree) of the thesis to the Faculty together with an "Oral Defense Recommendation Form" signed by the corresponding supervisors.

# 3. Basic Requirements of thesis

3.1 Ten important structures for a thesis
    1. Abstract
    2. Table of Content
    3. Introduction
    4. Demonstration and Argumentation
    5. Conclusions and Recommendations
    6. Citing
    7. Bibliography
    8. Appendix (Tables or figures)
    9. Acknowledgement(s)
    10. Biography

## 3.2 Length of the Thesis
In accordance to requirements set forth in the corresponding Study Plans.

## 3.3 Printing Requirements
A4 paper. Doctor Degree thesis and Master Degree thesis can only be printed on one side.

# 4. Writing Methodology

## 4.1 Formats for each of the ten structures

  1. Abstract and key words
    Abstract provides a brief summary of the research and the questions that need to be explored. It should be a short statement with independence, integrity, and a presentation of innovations.

Abstract essential:
  a. Avoid outlining it like a table of content.
  b. Summary must be concise. 500 to 1000 words for Master Degree thesis; and 1000 to 1200 words for Doctor Degree thesis.
  c. Explanatory statement for the purpose of leading and reinforcement should be used as little as possible (for example: review of history study, literature summary, explanation of concepts and terminology, charts and bibliography).
  d. Value of the thesis should be described in the form of statement and should not be exaggerated.
  e. Instead of writing what has been done (such as the exploration of basic theory, and the systematic study of the topic issues etc.), write what is the personal contribution and the final result of the research works.

Keyword serves as search engine and should be general term that used within the main content of the thesis. There are usually three to five keywords in a thesis and arranged in according to the order of appearance.

2. Table of Content
  Only list of chapters, sections and page numbers are needed.

3. Introduction
  Main purpose of the introduction is to introduce research topic to the readers, demonstrate the value of the research, and offer subjective answers to the research questions.

  Contents mainly include:
  (1) Actual background and problems of the subject matter (clearly and professionally define the value and practical issues)
  (2) Literatures review (theoretical value)
  (3) Unresolved research questions (reference point)
  (4) Hypothesis (Innovative proposal)
  Simply includes but not subject to: motive, problems background, reason of choosing the topic in relate to the actual study, importance, objective, hypothesis and unresolved problems, terminologies and definitions, as well as scope and limitation of the research.

Actual background and definition of problems:

A. Topic selections: (1) From reading literatures or (2) From observation. Actual background refers to using actual facts and phenomena to define the existence and importance of the research matters.   Definition of problem refers to using professional terms to describe the research matters.

**Literatures review:**  The process of providing current status and a brief analysis of the research. This process helps to assess the writer's research skill and the amount of literatures being read. It also helps to resolve some of the issues that might have arisen during thesis writing, for example: did the writer find the key elements and capture the importance of the literatures? Are commentaries pertinently expressed and precise? Writers should be discouraged to: present the theory and thoughts of the research topic in a lecture format; criticize the shortcoming and mistakes conducted by previous researchers; presenting vague thesis statement, or adopting opinion and contents from unknown sources. Primarily resources of the literatures should be articles from academic journals or academic conferencing; a small portion of textbooks and other books can be used; however views from newspapers and magazines cannot be used as argumentation reference.

**Unresolved research questions and hypothesis**: By highlighting the inadequacies of the study due to "unresolved questions", writer can propose a hypothesis statement. Hypothesis statement expresses the innovative point of the thesis, offering starting point and objective of the thesis argumentation as the result of observation and reading of previous research works. To begin a hypothesis statement, writer should create a hypothesis tree; gather all the data and evidence to prove the authentication of the hypothesis thesis. Hypothesis statement should express the relationship between variables with operational definitions, thus formulating into a hypothesis thesis.

4. Demonstration and Argumentation
   (1) This is the most important structure of the thesis including research direction, design, data collection, processing, analysis and discussion.
   (2) Objective is to clearly describe the selection of research subject, method, scope, nature, research tools, detail procedures for research implementation, preliminary study to determine the feasibility of

research methods and procedures, as well as providing detail records and data of the research.

(3) Data should be processed, explained and analyzed in the most clear, unambiguous and reasonable manner. Reference literatures should be discussed and analyzed objectively without bias. Clearly list the research findings and the similarities and differences in compare to previous related research works. Distinguish between facts and theory without confusion. Application of statistical tables or figures must be clear and appropriate.

(4) The theoretical and practical value of the research should be demonstrated in this section. (Support by case studies).

(5) Data collection: a description of the data collection should be precise and reproducible in comply with the scientific research requirements. Contents should include research subject, observation method and observation process.

(6) Data processing: To demonstrate the analysis result by using descriptive statistics, frequency analyses, data transformation, X2 analysis, and figures.

(7) Data analysis: In order to verify the authenticity of the argumentation, method of data analysis, calculation result and the statistical significance of the result by applying the stated analysis method, must be clarified. Avoiding spending too much time on principles of analytical methods and procedures, or simply just provides the methods, outcomes and data analysis without giving detail explanation of the procedures.

(8) Essential of demonstration and argumentation: Chapter title should support the argument and the research content. Content should clearly demonstrate the understanding of the research situation, thorough examination of the subject from small and to its deeper element with minimum informative content. Significant contribution to the study may be unrecognizable if textbook thinking was suggested to the readers.

5. Conclusions and Recommendations

Conclusions draw directly from the research results. Conclusions and results may be different from different researchers on the same research topics. Researchers can express their point of view based on the theoretical and practical value of the research results. Conclusion for Master Degree thesis should be around1000 to 2000 words, and 6000 to 10000 words for Doctor Degree thesis.

Specific requirements are as follows:

(1) Detail the various phenomena thinking encountered during the research study, proposal of problem solution and future research direction based on the research result.

(2) Conclusion should summarize the research content, be precise with original idea.

(3) Conclusion should answer the research questions directly with sufficient argument points, clear hierarchy, clear point of view, and reasonable and believable commentaries.  It should also suggest issues involving further studies; explain if the study is feasible, prompt urgent improvement and detail any research restrictions.  Recommendation should have reference value.

6. Citing

Improve the readability and theoretical value of the thesis by quoting perspectives and case studies from reference literatures. All quoted literatures, whether directly or indirectly, must be clearly listed in the reference list. Quoting from others without acknowledgement will be considered as plagiarism. <u>In order to reflect the originality of the thesis, large segment of the reference literatures are not allowed for quoting.</u>

7. Bibliography

List of reference literatures cited in the thesis. Cited data must be relevant to the research topic for easy retrieval by the readers. **<u>All cited data must be listed in the reference list.</u>** Reference literatures can be books, academic journals, academic conferencing thesis, website data, and degree thesis. Website data must be accompanied by website name, website address and date. Master Degree thesis requires at least 20 reference sources. For Doctor Degree thesis, it is at the discretion of the corresponding professional. Reference literatures should be academic journals under specified thematic areas.

8. Appendix (Tables and figures)

This section contains the raw data, data analysis, and questionnaires, etc.

9. Acknowledgment

Writer expresses gratitude to the University for the learning opportunity, to the supervisors and supervisors for their guidance, and to the family and friends for their supports and assistance during the study and thesis writing period.

10. Resume

Writer will introduce his/her personal academic background, working experience, academic affiliation and published academic thesis. This process offers the Professor and the Defense Committee a comprehensive understanding of the writer.

**4.2 Format specification**

1. Thesis order

Title page, abstract, table of contents, introduction, demonstration and argumentation, conclusion and recommendations, bibliography, appendix (tables and figures), biography, published thesis and books (Publication) by writers, and acknowledgement.

(1) Font for the page numbers from the title page to the table of content should be in Uppercase Roman numerals (I, II, III ...). No page number should be displayed on the title page. (See appendix)

(2) Page numbers in the introduction page and all others should be in Arabic numerals (1, 2, 3......)

(3) Page numbers should be centered at the bottom of each page.

2. Page Layout

A4 paper. Margin should be set as: top (2.5cm), bottom (2.5cm), left (3.8cm), and right (2.5cm). Binding location should be on the left hand side. (For reference purpose)

3. Fonts

Times New Roman

4. Header: Each page should have a header; add a solid line on the upper part of the page for the header. Print the title on the upper left corner of each page (title can be omitted from the header if it is too long). Print the respective chapter name on the upper right corner of each page.

5. Content
    (1)  Single line spacing.
    (2)  Thesis Content:       Times New Roman 12.
           Chapter:              Times New Roman 18.
           Subtitle:             Times New Roman 16
           Next level of subtitle:  Times New Roman 14.
           Header:              Times New Roman 10.

Example:

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# Chapter 1 Introduction

## 1.1 The Study Motive and Objectives

### 1.   Study Motive

Discussion on Corporate Management by American Scholars can trace back to 1930's. Berle & Means (1932) pointed out that to achieve the goal of specialization; there is a necessity of most American firms to disperse ownership due to the expansion of companies' sizes.

In 1988, Jensen was the first to launch a systematic discussion on Corporate Management as well as collect articles and data related to Corporate Management. (Weston, Siu & Johnson; 2002).

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6. Formula: Place formula in the center with index number to the right, Such as:

$$V_0 = X_0(1\text{-}T)(1\text{-}b)\ \sum_{t=1}^{n}\frac{(1+g)^t}{(1+k)^t}+\frac{X_0(1-T)(1-g)^{n+1}}{k(1+k)^n} \qquad (5.1)$$

7. Figures: Figures should be placed in the center of the page and titles should be printed right below it. Assign serial numbers to each figure such as Figure 1-1 (Chapter1, Figure 1), then arrange in the order of appearance, Figure 1-2, Figure 1-3…..; Figure 3-1 (Chapter 3, Figure 1) and so on.

8. Tables: Tables should be placed in the center and titles should be printed right above the tables. Number the table such as Table 2-1 (Chapter 2, Table 1) then arrange in the order of appearance such as Table 2-1, Table 2-2; Table 3-1 (Chapter 3, Table 1) and so on.

   Note: Tables and figures used should have direct relationship to the content. If a table or figure is mentioned in the content for the first time, then the mentioned table or figure should also be presented with the content (on the same page or the next page.)   If there are too many sub tables or subfigures corresponding to the parent table or figure, then sequence notation can be used in the order of appearance.

9. Position and format of cited reference data: (Please reference to 4.1, section 6)
   In accordance to the University's guideline, the standard format for cited reference data of Master Degree and Doctor Degree thesis is author's surname and publication year inside a parenthesis (   ).
   If the author is unrecognizable with just using the surname, then full name of the author may be used. Superscript of page number can be used if same author and same literature was being cited multiple times in the same thesis. For example: (Author, Year) $^{page\ no}$. If multiple literatures published by the same author in the same publication year were being used, writer can place a lowercase letter for example a, b, c… after the publication year for distinction. For literatures by European and American authors, only list the first author's name and then add "et al". For literatures by Chinese authors, list the surname of the first author, then add "etc."   There should be a half character space between the name and etc.

10. Format of reference list
    The references can be listed out by one of the following format indicated by the University. Respective Faculties/Institutes can indicate a format according to the requirements of different disciplines:
    1) APA format (Please refer to the attachment for details: *APA style 5$^{th}$ edition*)
    2) China national standards format, please refer to the following guidelines and examples:

**Academic Journals**: Author's name, publication year, title (categories), periodical name, other title information, volume number (stage), page number (reference date)

Example:

LI XIAO DONG, ZHANG QING HONG, and YE JIM LIN, 1999, Studies of theoretical issue [J], Peking University Press: Natural Science, 35 (1): 101-106.

**Conferencing thesis**: Author's name, publication year, title (categories), conference's name, location, publisher, Page number.

Example:

ZHANG ZHONG ZHI, 1997, Requirements of the role of editor-in-chief for science-technologies periodicals [C], China Editology of Science Periodicals 10$^{th}$ Anniversary Symposium Proceedings, Beijing: China Editology of Science Periodicals Academic Committee, pp.33-34.

**Books**: Author's name, publication year, title, other title information (categories), contributor, version, publisher, quoted page number (reference date).

Example:

YU MIN, 2001, Research on publishing groups [m], Beijing: China Book Press, pp.179-193, National Standardization Technical Committee of the Seventh Committee, 1986, China Standard Book Number [S], Beijing: China Standard Press

**Degree thesis**: Author's name, publication year, title of thesis, doctoral / master's thesis, school name, name of faculty (beginning and ending page).

**Non-published thesis**: Name of the Journal, then add "to be published".

Note:

(1) Order of the references: References can be divided into two sections for English and Chinese authors. For Chinese authors, the reference list should be arranged in according to character stroke order of the authors' surname. For foreign authors, the reference list should be arranged in alphabetical order of the first letter of authors' surname name. (If multiple authors' surname names begin with the same letter, then the second letter shall be used for the arrangement).

(2) Author's name: Uppercase for all the letters of the full name or abbreviation, such as CHAU YUN HSU or C.Y.HSU

(3) Publication year: Western standard (Gregorian calendar).

(4) Title: Only capitalize the first letter of the entire title. For proper nouns, names and abbreviations, capitalize the first letter as well.

(5) Conferencing thesis: If there is no special name, then begin with "Proceedings of."

**Please refer to the National Standards on Rules for Content, Form and Structure of Bibliographic Reference GB/T 7714-2005, page 11**

# 5. Others

## 5.1 Topics selection

Topic selection for Degree thesis is a very important step. It is very difficult to make changes once a topic has been selected. Generally, thesis topic should be subject matter that is interesting to the writer and is established based on his/her work experience or research project. Topic for Doctor Degree thesis should be new, promoting cutting-edge research, with strong theoretical value, and striving for innovative models and methods.

As for Master Degree for professional program such as MBA, writers are encouraged to be creative and challenged. They are recommended to combine information on current situation of their respective faculty and current affair for topic selection.

## 5.2 Content layout

Content layout represents the logical thinking of the thesis. Thus the order arrangement and quantity is very important. Typically, by just reading the content, readers might not be able to capture the inter-relationship; the problem can be solved by presenting a conceptual diagram. A conceptual diagram will be a good tool for the reader to see the thesis idea, concept and even logic at a glance. General description can be built around the diagram.

## 5.3 Tone

Writer must set a proper tone for the thesis. Common problem of a thesis that resulting in unpleasant readers is the writer's incapability of separating fact, other's theory and writer's own demonstration. As a result, the thesis was presenting in a lecture manner with unconvincing analysis. In the

content, avoid using the subjective terms such as: our country, we, or I think.

## 5.4 Data processing

Demonstration and argumentation must have a very good foundation starting with data processing. However, it is so often that data processing was not taking seriously resulting in lack of data authenticity. For example: date of a journal, page number from a literature, and quoted section, etc. Some researchers may even fail to specify the survey date and survey methods. This is not an unreasonable requirement, because the readers (include Supervisors and Thesis Assessment Committee) may not always understand the specific nature of a demonstration. Sloppy data often gives the readers an impression of lack of sincerity and rigorous, thus lead to the question of under developed argumentation. In fact, readers are unable to distinguish the different between actual fact, other researcher's theories and writer's own demonstration due to improper data processing. For example lack of tables and figures, date and origin of data, and missing examples, etc.

## 5.5 Depth and breadth of content

One of the key elements of assessing a thesis is whether the content demonstrates the depth and breadth of understanding the research subject and if there is a close relationship to section one to four mentioned above. In addition, it is easy to show that the thesis is lack of depth and breadth if the researcher does not have a basic foundation (for example, lack of interaction with the subject matter or lack of related working experience), or the researcher did not make an effort in the research work (for example did not perform a comparison analysis using an enterprise or government entity that he/she is familiar with). A postgraduate thesis is not the same as a lengthy report conducted by a journalist. Writer should demonstrate the breadth of the thesis by elaborating the important points of the research subject.  As for depth, writer should be able to put forward a unique set of systematical views by integrating theoretical and practical value.  (Mainly do not copy others' opinion and/or just bringing up an opinion from a single point of view).

*(END)*