Sulaimani Polytechnic University

Thesis Writing Guidelines

Prepared by
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Assist. Prof. Dr. Noor Ghazi M. Jameel
Dr. Ali Muhi Aldeen Omer
MSc and PhD Thesis Writing Guidelines

This manual is a comprehensive guide to write a thesis at Sulaimani Polytechnic University, specifically for Master, PhD and other writing projects.

1. Requirements for a thesis (Typical content)
   Table (1) illustrates the elements required in a typical thesis.

<table>
<thead>
<tr>
<th>Preliminary Pages</th>
<th>Body of Text</th>
<th>Ending Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required elements in a typical thesis</td>
<td>Introduction</td>
<td>References</td>
</tr>
<tr>
<td>Title Page</td>
<td>Literature Review</td>
<td>Required</td>
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<td>Supervisor Certification</td>
<td>Methodology</td>
<td>Appendix</td>
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<tr>
<td>Linguistic Evaluation Certification</td>
<td>Results</td>
<td>If any</td>
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<tr>
<td>Examining Committee Certification</td>
<td>Discussion</td>
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<td>Dedication</td>
<td>Conclusions and Future Works</td>
<td></td>
</tr>
<tr>
<td>Acknowledgements</td>
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<td></td>
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<tr>
<td>Abstract</td>
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<td>Table of contents</td>
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<tr>
<td>List of tables</td>
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</tr>
<tr>
<td>List of figures</td>
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</tr>
<tr>
<td>List of abbreviations</td>
<td></td>
<td>If any (Sorted in alphabetic order)</td>
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<tr>
<td>Arabic Language</td>
<td></td>
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<tr>
<td>Title Page</td>
<td></td>
<td></td>
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<tr>
<td>Abstract</td>
<td></td>
<td></td>
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<tr>
<td>Kurdish Language</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Title page</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


2. Thesis Structure and Details
The main and detailed content of the thesis text should include the followings, that are organized in many chapters according to the college specialization.

2.1 Introduction
The introduction should have a flowing, natural style of writing and should read like a story. It should include the followings:

a) The background and significance of the investigation, briefly citing the reasons governing the need for the investigation. This background should reflect the title of the thesis project.

b) Literature review
It contains an in-depth review of published work relevant to your investigation. The literature review should be a comprehensive review of all researches done in the field of your study. Researchers’ theories, experiments, and proposed studies in this field should be mentioned. Literature References: Different departments require different citation styles. You should determine the accepted citation in your field of study. Refer to your department for information on citation style. The purpose of internal referencing is to guide the reader to the appropriate entry in the list of references/bibliography, where complete information is available. One of the common methods of referencing may be used (according to the college specialization):

1. Assign numbers to the bibliographic entries and insert the corresponding numbers for the authors as they are cited in the text. In-text references to the author's name normally refer to an alphabetical list of sources; numbered references normally refer to a numeric list.
2. Use the author's name and date of publication; Literature references in the text are cited by the last name of the author(s) followed by the year of publication in parentheses. If more than two authors exist for a paper, use the first author's name followed by "et al" (which means "and other"). If there is more than one paper cited within the parentheses, place the references in chronological order and separate them by semicolons. When reference is made to more than one paper by the same author(s) published during the same year, separate the references by adding a letter after the year, e.g. 2015a, 2015b, etc. The list of references in this case is given alphabetically and without any abbreviations and do not number them.

c) Aims or objectives of the thesis project.
d) Organization of thesis chapters (chapters headlines)

2.2 Methodology
Each department may have different guidelines for this section of the thesis so it is important to check with your advisor. The methodology section describes how your research will be performed and the process you go through. This includes the type of research methods as well as a step-by-step description of the research. You can also discuss
the different materials, apparatuses, algorithms you will use in the study. You will also need to discuss the participants if relevant to your study: theoretical background, how you choose them, on what basis etc. Discussing the plan to analyze your data. You may also mention when and where your research will be conducted.

2.3 Results and Discussion
The results section will contain a statement of what has been determined, i.e. both evaluated and observed, as a consequence of performing the test. Thus it will comprise a concise statement of the calculated results together with other important facts which have been derived, measured, tested and observed.
In this section, you will need to state the results of your research without discussing them. There may be graphs, tables, figures, etc., all of which you need to describe.

The discussion section involves an assessment of the experimental results and comparison with theoretical predictions where appropriate. Sample calculations may be included and tabled, plotted and pictured to show the correlation between the theoretical and experimental or measured results. In the discussion section, you will need to discuss the previously mentioned results. You should address your research questions and explain how your research relates to previous researches.

2.4 Conclusions and Future Works
The conclusions contain a series of unambiguous statements; each one is carefully considered to be a specific point and usually presented as a numbered or bulleted list. These statements must correspond closely with the aims and objectives set out at the beginning of the report. It must therefore contain the answers to questions which gave rise to the formulation of the aims of the experiment. Careful reference must therefore be made to the section which specifies the aims of the test. Recommendations where appropriate may be put forward together with the conclusions. Highlight exact contributions and discuss limitations. The continuation of the project is to be included in the future works.

3. Thesis Formatting

3.1 Pages
1. Preliminary pages (Roman Numbering).
   a. Title page (not numbered) – please refer to Appendix i.
   b. Supervisor Certification page (not numbered) - please refer to Appendix ii.
   c. Examining Committee Certification page (not numbered) - please refer to Appendix iii.
   d. Acknowledgments (numbered by i) – Optional.
   e. Abstract (300-400 words) (numbered by ii).
   f. List of Contents (numbered by iii) – please refer to Appendix iv.
3. Supplementary Pages (No Pagination).
   - Appendices.
   - Glossary (if any – optional).
   - Index (if any – optional).

3.2 Language
   The thesis must be written in consistent style of English.

3.3 Paper
   Size - A4 (21.6 cm x 27.9 cm) or (8.5 inch x 11 inch)
   Quality - Acid-free paper of at least 80gm weight.
   Color - White.

3.4 Number of Pages
   The maximum length (excluding footnotes, appendices, tables and prefaces) for submission is at least 80 pages for MSc. thesis no longer than 120 pages. At least 120 pages for PhD thesis and no longer than 200 pages.

3.5 Font Size and Type

<table>
<thead>
<tr>
<th>TYPE</th>
<th>SIZE (point-font)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text</td>
<td>12 of 1.5 spaced line</td>
</tr>
<tr>
<td>Tables and Figures</td>
<td>10 of single space line</td>
</tr>
<tr>
<td>Footnotes</td>
<td>10 of single space line</td>
</tr>
<tr>
<td>Title Page Please refer to</td>
<td>Please refer to Appendix i</td>
</tr>
<tr>
<td>Supervisor certification page</td>
<td>Please refer to Appendix ii</td>
</tr>
<tr>
<td>Linguistic evaluation certification page</td>
<td>Please refer to Appendix iii</td>
</tr>
<tr>
<td>Examining committee certification page</td>
<td>Please refer to Appendix iv</td>
</tr>
<tr>
<td>List of Contents</td>
<td>Please refer to Appendix v</td>
</tr>
</tbody>
</table>

3.6 Font Style
   Only one font style (Times New Roman) may be used through the entire thesis, including the title page, approval page, acknowledgement, bibliography and appendices. Exceptions to this can only be made for tables/figures/illustrations.
imported from other sources. The usage of bold variants of the same font style in the text of heading and titles.

3.7 **Headings**
Chapter headings are to be centered, written in bold Title Case letters. The font size for chapter headings is 16 point. The first sub-headings should be in Title Case letters of 14 point in bold, the second sub-headings should be in Title Case letters of 12 point in bold while the third sub-headings should be in Title Case letters of 12 point.

3.8 **Paragraphs**
Spacing between two paragraphs in the basic text should be set at single space. Heading that appears, as a last line on a page will not be accepted. There should be a minimum of two lines of a paragraph at the bottom of the page under the heading.

3.9 **Line spacing**
The thesis should be typed on one side of the page. The text should be 1.5 spaced throughout. Single-spacing should be used for the following circumstances:
- Explanatory footnotes.
- Appendices.
- Long headings or subheadings.
- Long caption to tables, figures or plates.
- Bibliography.
- Tables.
- Quotations.

3.10 **Margins and justification**
Set the justification to “full” and the margins to the following measurements:
- TOP: 25mm (1 inch).
- BOTTOM: 25mm (1 inch).
- LEFT: 40mm (1.5 inch).
- RIGHT: 25mm (1 inch).

3.11 **Abstract**
An abstract, or summary, in English (300-400 words), should be bound as an integral part of the project, and should precede the main text. The style of writing for this section is technical and concise, with economical use of words.

3.12 **Symbols**
Symbols or nomenclature should be defined. Standard symbols or acronyms normally accepted in engineering field can be used. International System Unit (S.I) shall be used. If other units are used, SI equivalent unit should be in bracket.
3.13 Equations and formula
Equations and formula should be typed clearly. Avoid using more than the necessary lines by giving alternatives, for example:

\[ y^2 = \frac{e^a}{z} \]

Chapter No. Equation No. (1.1)

All parameters should be clearly identified.

3.14 Abbreviations
At first appearance, write the words in full. Thereafter you can use the abbreviations. For example, Malaysian Trade Union Congress (MTUC). An abbreviation that can be pronounced (like NAFTA, ASEAN, UNESCO) does not generally require the definite article: use of the before the abbreviation. Abbreviations that can be pronounced and are composed of bits of words rather than just initials should be spelled out in upper and lower case; Unisel, Shell, Petronas.

3.15 Diagram and Table
Diagram can include graphs, figures, charts and technical drawings. Diagrams should be easy to understand and should have relevant titles. Every diagram should be numbered at the bottom according to the related chapter. Every diagram should be referred and elaborated in the text. All figures, chart and graphs must be centered. Source(s) of data must be placed at the bottom left of the tables and figures, printed in font size 10-point (bold). Both the number and the title must be placed below the figure. A page is limited to a maximum of two pictures of size 3R which has to be properly centered. All pictures must be verified by the supervisor. Please refer to the example given in figure (1.1) below.

![Figure (1.1): Return loss of the proposed design for frequency band 1-16 GHz providing broadband monopole microstrip antenna](image)

All tables should have titles and table numbers. Both the number and the title should be centered above the table. Use font size 10-point and single spacing for data in tables.
All tables should be referred and elaborated in the text. Additional notes should be prepared if necessary. Please refer to the example given in Table (1.1) below.

<table>
<thead>
<tr>
<th>Material</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric Constant, $\varepsilon_r$</td>
<td>1.7</td>
</tr>
<tr>
<td>Thickness (mm)</td>
<td>1</td>
</tr>
<tr>
<td>Loss Tangent</td>
<td>0.02</td>
</tr>
</tbody>
</table>

### 3.16 Appendices

This section contains lengthy material considered unsuitable to be placed in the main text; for example, raw data, extra drawings, specification documents and computer programs. The attachments should be numbered as ‘Appendix A, Appendix B and so forth. All attachments should be referred to the text. Attachments with different paper sizes should be properly folded.

### 3.17 REFERENCES

**Sources Reference:** Includes title, city of publication, publisher (for book). Italicize titles of books, titles of periodicals, and periodical volume numbers. The reference should be numbered [into two brackets] and cited through the main text. Examples of sources:


Appendix i - Title Page

Thesis Title
(Times New Roman, 18, Bold, Centered)
A Thesis
Submitted to Council of Technical College of Engineering
Sulaimani Polytechnic University in Partial Fulfillment of the
Requirements for the Degree of (Master / Doctor of Philosophy)
of Science in Communication Engineering
(Times New Roman, 14, Centered)

By
(Times New Roman, 14, Centered)

Student Full Name
(Times New Roman, 16, Bold, Centered)
B.Sc. College- University (2013)
(Times New Roman, 14, Centered)

Supervised by
(Times New Roman, 14, Centered)
Dr. Supervisor Full Name
(Times New Roman, 16, Bold, Centered)
Academic Title
(Times New Roman, 14, Centered)

Month, Year in English Month, Year in Kurdish
(Times New Roman, 14, Bold)
Appendix ii

Supervisor Certification

I certify that this thesis entitled “Full Thesis Title” was prepared by Student Name, under my supervision at Sulaimani Polytechnic University/ Technical College of Engineering, in partial fulfillment of the requirements for the degree of (Master / Doctor of Philosophy) of Science in Communication Engineering.

Signature:  
Name: Assist. Prof. Dr. .............  
(Supervisor)  
Date: / /2016

In view of the available recommendation, I forward this thesis for debate by the examining committee.

Signature:  
Name:  
(Head of Department)  
Date: / /2016
Linguistic Evaluation Certification

I hereby certify that this thesis entitled "Thesis Full Title" prepared by Student Full Name, has been read and checked and after marking and correcting all the grammatical and spelling mistakes, the thesis was handed again to the researcher to make the corrections in this last copy. Therefore, I certify that this thesis is free from mistakes.

Signature:
Name:
Position:
Date:   /   / 2016
Appendix iv

Examining Committee Certification

We certify, as an examining committee, that we have read this thesis entitled “Thesis Title”, examined the student Student Full Name in its contents and found it meets the standard of a thesis for the degree of Master of Science in Communication Engineering.

Signature: Name: Prof. Dr. ………… (Chairman) Date: / / 2016
Signature: Name: Prof. Dr. ………… (Member) Date: / / 2016
Signature: Name: Assist. Prof. Dr. ………… (Member) Date: / / 2016
Signature: Name: Assist. Prof. Dr. ………… (Supervisor - Member) Date: / / 2016

Approved by the Dean of the Technical College of Engineering

Signature: Name: Prof. Dr. ………… (Dean) Date: / / 2016
# List of Contents

(Times New Roman, 12 with single space line)

<table>
<thead>
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<th>i</th>
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<td>ii</td>
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<td>List of Contents</td>
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<tr>
<td>List of Figures</td>
<td>iv</td>
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<tr>
<td>List of Tables</td>
<td>v</td>
</tr>
<tr>
<td>List of Abbreviations</td>
<td>...</td>
</tr>
<tr>
<td>List of Symbols</td>
<td>...</td>
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</tbody>
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## 1. Introduction

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1.2 Problem Statement and Significance of the Project 3
1.3 Literature Review
1.4 Thesis Objectives
1.5 Thesis Organization 6

## 2. Antenna Designs

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## 4. Conclusions

4.1 42

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Sample
Analysis and Design of Array Antenna

A Thesis
Submitted to Council of Technical College of Engineering
Sulaimani Polytechnic University in Partial Fulfillment of the Requirements for the Degree of Master of Science in Communication Engineering

By

Azad Muhammad Ali
B. Sc. Communication Engineering – Sulaimani University (2013)

Supervised by

Dr. Asaad Al-Hindawi
Professor

May 2016

Jozardan 2716
Supervisor Certification

I certify that this thesis entitled “Analysis and Design of Array Antenna” was prepared by Azad Muhammad Ali, under my supervision at Polytechnic University/ Technical College of Engineering, in partial fulfillment of the requirements for the degree of Master of Science in Communication Engineering.

Signature:
Name: Prof. Dr. ..............  (Supervisor)
Date: / / 2016

In view of the available recommendation, I forward this thesis for debate by the examining committee.

Signature:
Name: Assist Prof. Dr. ..............  (Head of Department)
Date: / /2016
Examining Committee Certification

We certify, as an examining committee, that we have read this thesis entitled “Analysis and Design of Array Antenna”, examined the student “Azad Muhammad Ali” in its contents and found it meets the standard of a thesis for the degree of Master of Science Communication Engineering.

Signature: ____________________________
Name: Prof. Dr. ……………
(Member)
Date: / / 2016

Signature: ____________________________
Name: Prof. Dr. ……………
(Chairman)
Date: / / 2016

Signature: ____________________________
Name: Prof. Dr. ……………
(Member)
Date: / / 2016

Signature: ____________________________
Name: Prof. Dr. Asaad Mubdir Jassim
(Supervisor - Member)
Date: / / 2016

Approved by the Dean of the Technical College of Engineering

Signature: ____________________________
Name: Prof. Dr. ……………
(Dean)
Date: / / 2016
Acknowledgements
Abstract
## List of Contents

Acknowledgements ........................................... i  
Abstract ................................................... ii  
List of Contents ........................................... iii  
List of Figures ............................................. iv  
List of Tables ............................................. v  
List of Abbreviations ...................................... ....  
List of Symbols ............................................. ....  

### 1. Introduction

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1.5 Thesis Organization ..................................... 6  

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### 3. Results and Discussions

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List of Abbreviations

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<td>Amplitude Acid</td>
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<td>DNA</td>
<td>Deoxyribonucleic Acid</td>
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<td>MDNA</td>
<td>Mitochondrial DNA</td>
</tr>
<tr>
<td>RNA</td>
<td>Ribonucleic Acid</td>
</tr>
<tr>
<td>SCUBA</td>
<td>Self-Contained Underwater Breathing Apparatus</td>
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<tr>
<td>XG</td>
<td>......</td>
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<td>ZB</td>
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## List of Symbols

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<td>Gamma</td>
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<td>Delta</td>
</tr>
<tr>
<td>Θ</td>
<td>Theta</td>
</tr>
</tbody>
</table>
Chapter One

1. Introduction

1.1 Diagram, Table and Figures

Diagram can include graphs, figures, charts and technical drawings. Diagrams should be easy to understand and should have relevant titles. Every diagram should be numbered at the bottom according to the related chapter and any parts.

1.1.1 Diagram, Tables and Figures

Every diagram should be referred and elaborated in the text. All figures, chart and graphs must be centered. Source(s) of data must be placed at the bottom left of the tables and figures, printed in font size 10-point (bold). Both the number and the title must be placed below the figure. A page is limited to a maximum of two pictures of size 3R which has to be properly centered.

1.1.1.1 Diagram, tables and figures

All pictures must be verified by the supervisor. Please refer to the example given in figure (1.1). All tables should have titles and table numbers. Both the number and the title should be centered above the table. Use font size 10-point (bold) and single spacing for data in tables. All tables should be referred and elaborated in the text.

Figure (1.1): Return loss of the proposed design for frequency band 2-16 GHz providing broadband monopole microstrip antenna.
Additional notes should be prepared if necessary. Please refer to the example given in Table (1.1).

Table (1.1): Properties of required materials.

<table>
<thead>
<tr>
<th>Material</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dielectric Constant, $\varepsilon_r$</td>
<td>1.7</td>
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<td>Thickness (mm)</td>
<td>1</td>
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<tr>
<td>Loss Tangent</td>
<td>0.02</td>
</tr>
</tbody>
</table>
REFERENCES


APPENDIX A
الخلاصة
اسم الاطروحة

رسالة

مقدمة إلى مجلس كلية الهندسة التقنية في جامعة السليمانية التقنية

كجزء من متطلبات نيل شهادة (الماجستير/دكتوراه فلسفه) في علوم هندسة الاتصالات

من قبل

اسم الطالب

بكليوس هندسة الاتصالات - جامعة السليمانية 2013

اللقب العلمي

إشراف

اسم المشرف

اللقب العلمي

شهر والسنة الميلادية (تاريخ المناقشة)

شهر والسنة الهجرية (تاريخ المناقشة)
پوخته
ناونیشانی توعیزی‌نوه‌ه

نامه‌ی که

پیشنهاد گزارش به تهیه‌و‌ورشکنی کولیجی تکنیکی ثانیه‌ای له زانکۆی بولیتیکی سلیمانی و هک برشک له تهیه‌و‌ورشکنی کان به رهبری‌هی، (ماستریه/ دکترای فلسفی) له ناندازیزیاری گه‌یاندن

له لایهن

نامه خوئیندکار

به‌کله‌ی‌های‌زیز ثانیه‌ای گه‌یاندن – زانکۆی سلیمانی ۱۳۹۲

به‌سره‌ی‌رشتی

نامه سره‌ی‌رشتیار

پژوهی‌سوز

مانگ وسائی راینی (بارزارتی کانتوگو)

مانگ وسائی کورده (بارزارتی کانتوگو)
Thesis Title

A Thesis
Submitted to Council of Technical College of Engineering
Sulaimani Polytechnic University in Partial Fulfillment of the
Requirements for the Degree of Master of Science in
Communication Engineering

By

Student Full Name
B.Sc. Communication Engineering – Sulaimani University (2013)

Supervised by

Dr. Supervisor Full Name
Professor

Month, Year in English  Month, Year in Kurdish