Sulaimani Polytechnic University

Thesis Writing Guidelines

Prepared by

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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 (1) Required elements in a typical thesis

Preliminary Pages	Title Page	Required
	Supervisor Certification	Required
	Linguistic Evaluation Certification	Required
	Examining Committee Certification	Required
	Dedication	If any
	Acknowledgements	Required
	Abstract	Required
	Table of contents	Required
	List of tables	If any
	List of figures	Required
	List of abbreviations	If any (Sorted in alphabetic order)
Body of Text	Introduction	Required, Organized according to conventions of scientific disciplines.
	Literature Review	
	Methodology	
	Results	
	Discussion	
	Conclusions and Future Works	
Ending Pages	References	Required
	Appendix	If any
Arabic Language	Title Page	Required
	Abstract	Required
Kurdish Language	Title page	Required
	Abstract	Required

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 appropriable 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.

g. List of Abbreviations, Symbols/ Specialized Nomenclature (if any- optional) (numbered by iv….and so on).

2. Text

(Page 1 begins with Chapter One). All page numbers should be centered at the bottom of the page. When you insert the page numbers, set your position to "bottom of page" and alignment to "center".

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

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

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:

Chapter No. Equation No.

$$y^2 = \frac{x^s}{z}\, e^n \qquad (1.1)$$

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.

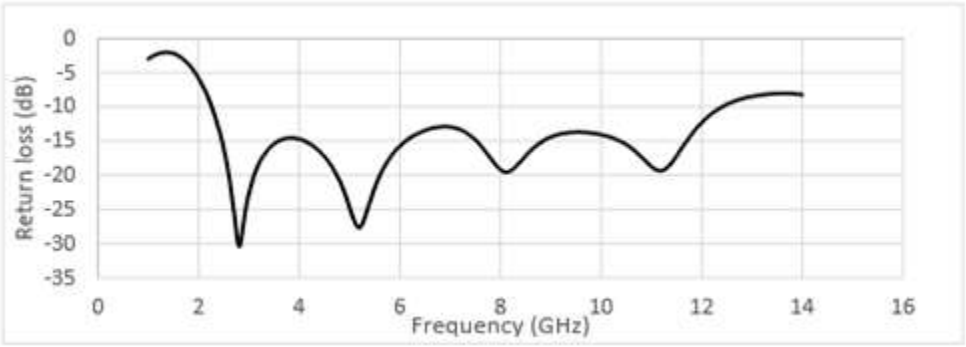


Figure (1.1): Return loss of the proposed design for frequency band 1-16 GHz providing broadband monopole microstrip antenna

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 (1.1): Properties of required materials

Material	Values
Dielectric Constant, εr	1.7
Thickness (mm)	1
Loss Tangent	0.02

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:

Books: [1] Anti, J.M. and Ryan, P.V.S., "Civil Engineering Construction", 3rd Ed., Sydney, Angus and Robertson, London, 1967, ch.5.

Journal: [2] Downs, R.B., "The Military Approach to Soil Stabilization", Journal of the Institute of Highway Engineers, London, Volume XIX, No. 3, March, 1972, pp. 19-23

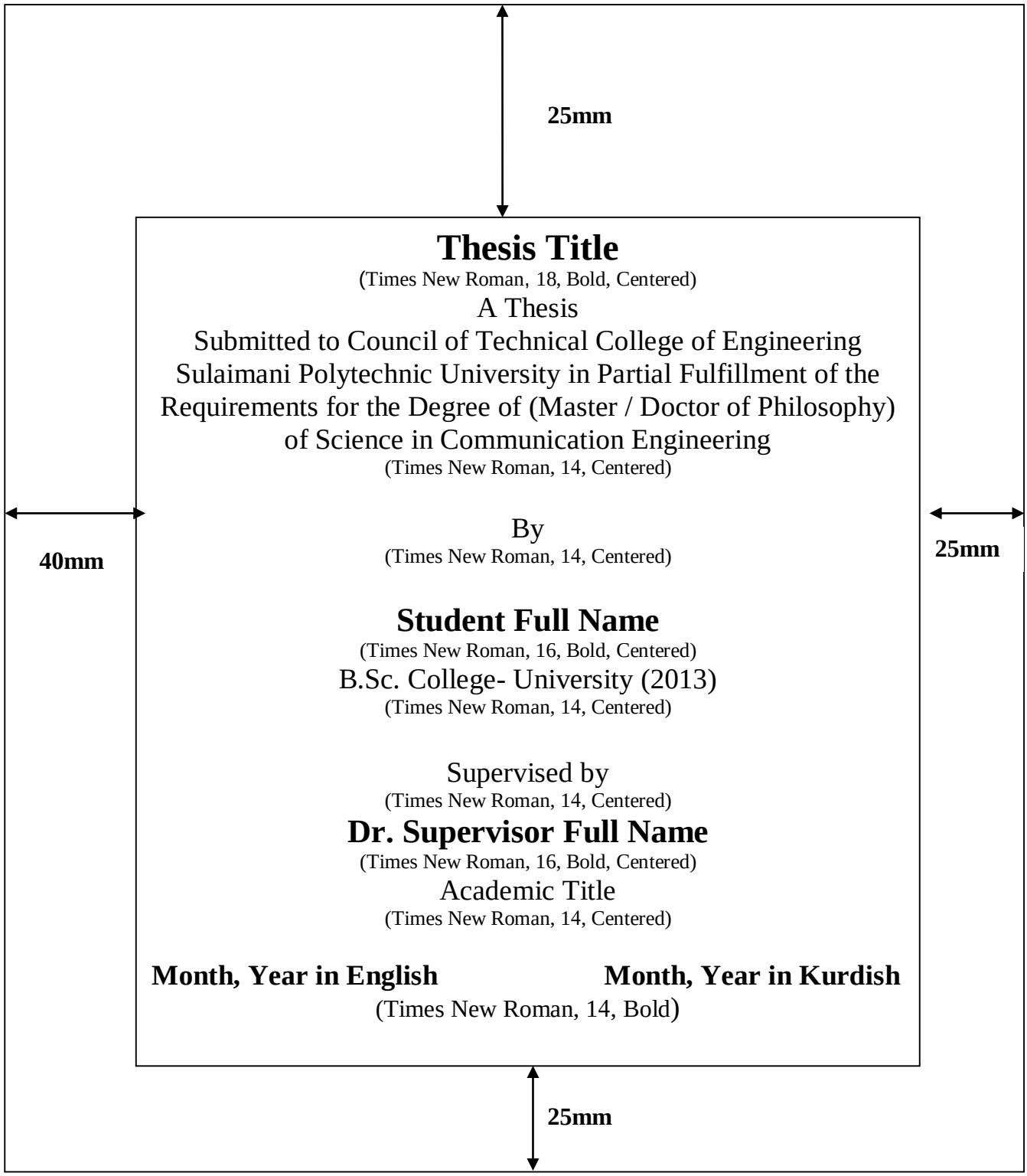
Monograph: [3] Body, D.M., "Flood Estimation". Water Res. Board of Australia., No.4, 1959, p.41.

Thesis [4] Marques, J.L.G.,"A Study of Anchorage Capacities of Confined Bentbar Reinforcement". Ph.D. Thesis, Rice University, Houston Texas May, 1988.

Conference: [5] Lea, F.M., "Cement Research: Retrospect and Prospect" in Proc. 4th International Symposium on the Chemistry of Cement , Washington DC, 1960, pp. 5-6

WebPage: [6] Smith, A. B., "Description of the Intel P6 Processor", Intel Corp., http://www.intel.com/pentium/p6/description.htm

Appendix i - Title Page



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

Appendix iii

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

Appendix iv – List of Contents Page

List of Contents

(Times New Roman, 12 with single space line)

Sample

Kurdistan Region-Iraq
Kurdistan Regional Government
Ministry of High Education and Scientific Research
Sulaimani Polytechnic University

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. ……
(Chairman)
Date: / / 2016

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

Signature:
Name: Assist. 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

List of Figures

List of Tables

List of Abbreviations

Abbreviation	Description
AA	Amplitude Acid
AC	Alternating Current
DNA	Deoxyribonucleic Acid
MDNA	Mitochondrial DNA
RNA	Ribonucleic Acid
SCUBA	Self-Contained Underwater Breathing Apparatus
XG	……
ZB	……

List of Symbols

Symbol	Description
€	Euro
¥	Yen
$	Dollar
Ω	Omega
Γ	Gamma
Δ	Delta
Θ	Theta

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.

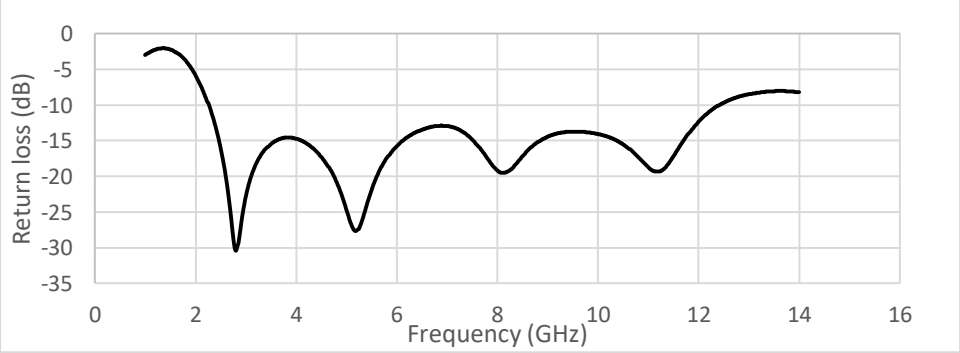


Figure (1.1): Return loss of the proposed design for frequency band 2-16 GHz providing broadband monopole microstrip antenna.

Additional notes should be prepared if necessary. Please refer to the example given in Table (1.1).

Table (1.1): Properties of required materials.

Material	Values
Dielectric Constant, **εr**	1.7
Thickness (mm)	1
Loss Tangent	0.02

REFERENCES

[1] Anti, J.M. and Ryan, P.V.S., "Civil Engineering Construction", 3rd Ed., Sydney, Angus and Robertson, London, 1967, ch.5.

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[6] Smith, A. B., "Description of the Intel P6 Processor", Intel Corp., http://www.intel.com/pentium/p6/description.htm

APPENDIX A

A-2

APPENDIX B

B-2

الخلاصة

اسم الاطروحة

رسالة

مقدمة الى مجلس كلية الهندسة التقنية في جامعة السليمانية التقنية

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

من قبل

اسم الطالب

بكلوريوس هندسة الاتصالات - جامعة السليمانية ٢٠١٣

اشراف

اسم المشرف

اللقب العلمي

الشهر والسنه الميلادية

(تاريخ المناقشه)

الشهر والسنة الهجريه

(تاريخ المناقشه)

پوخته

ناونیشانی توێژینەوە

نامەیەکە

پێشکەش کراوە بە ئەنجوومەنی کۆلێجی تەکنیکی ئاندازیاری لە زانکۆی بۆلیتەکنیکی سلێمانی وەک بەشێک لە پێداویستیەکان بەدەستهێنانی بروانامەی(ماستەری/ دکتۆرای فەلسەفەی) لە ئاندازیاری گەیاندن

لە لایەن

ناوی خۆیندکار

بەکەلۆریۆس ئاندازیاری گەیاندن – زانکۆی سلێمانی ٢٠١٣

بەسەرپەرشتی

ناوی سەرپەرشتیار

پرۆفیسۆر

مانگ وسالّی زایینی
(بەرۆاری کفتوگۆ)

مانگ وسالّی کوردی
(بەرۆاری کفتوگۆ)

Front Cover

Year

Kurdistan Region-Iraq
Kurdistan Regional Government
Ministry of High Education and Scientific Research
Sulaimani Polytechnic University

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**

Student Full Name

MSc.