

Postgraduate Thesis and Dissertation Writing Guideline

Prepared by Postgraduate Studies of Technical College of Engineering and Technical College of Informatics

General Requirements

This Thesis and Dissertation Guideline is designed to provide comprehensive instructions for Master's and Ph.D. students at the Technical College of Engineering and College of Informatics, Sulaimani Polytechnic University. It outlines the essential principles, formatting standards, and procedural requirements for preparing a thesis or dissertation. Adhering to these guidelines ensures that your work meets the university's academic and ethical standards, maintains consistency, and presents your research in a clear, well-organized manner. The following order is required for components of your thesis or dissertation:

Item	e Number	Requirements
Title page	Not numbered	Required
Supervisor Certification page	Not numbered	Required
Linguistic Evaluation Certification	Not numbered	Required
Examining Committee Certification	Not numbered	Required
Declaration	Not numbered	Required
Dedication	Not numbered	If any
Acknowledgment	Numbered by I	Required
Abstract	Numbered by II	Required
List of Publications	Numbered by III	Required
Table of Contents	Numbered by IV	Required
List of Figures	Numbered by V	Required
List of Tables	Numbered by VI	if any
List of Abbreviations	Numbered by VII	if any
List of Symbols	Numbered by IX	if any
Main text (chapters)	Starting from 1	Required
References	Continue numbering from previous section	Required
Appendix	Not numbered	If any
Page title and Abstract in Arabic	Not numbered	Required
Page title and Abstract in Kurdish	Not numbered	Required

THESIS AND DISSERTATION FORMATTING

This section provides detailed guidelines on the required layout and formatting standards to be followed during the thesis or dissertation writing process.

1. Pages Layout

All main body pages must use portrait orientation. Landscape orientation may only be used for oversized tables, figures, or appendices and must be rotated so that the top of the figure is on the left side of the page.

2. Type of Paper

The thesis must be printed on Letter -size (21.6 cm x 27.9 cm) or (8.5-inch x 11 inch) and white color.

3. Pagination

Pages should be numbered consecutively. The page numbers should be positioned at the bottom centered from the bottom edge. Check table 1 to refer to the pagination for preliminary pages of a thesis.

4. Length of Thesis

The typical word count for a Master's thesis ranges from 20,000 to 30,000 words, excluding references. For a PhD dissertation, the expected word count is generally between 40,000 and 60,000 words, also excluding references.

5. Language

The thesis must be written in clear and grammatically correct academic English. Students whose first language is not English are encouraged to have their thesis reviewed by a language editor.

6. Margins

These margin settings ensure compatibility with binding requirements. All content, including tables and figures, must fall within the below margin boundaries.

TOP : 2.5cm (1 inch).
BOTTOM : 2.5cm (1 inch).
LEFT : 3.25cm (1.3 inch).
RIGHT : 3.25cm (1.3 inch).

7. Type and Font Size

Item	Size (point-font)	
Font Style through all the thesis	Times New Roman	
Paragraphs and text	12 points of 1.5 spaced line	
Figure captions	10 points of single space line and centered	
Table content and caption	10 points of single space line and centered	
Chapter heading	Uppercase letters of 16 points in bold and centered	
First sub-headings	Title Case letters of 14 points in bold	
Second sub-heading	Title Case letters of 12 points in bold	
Third sub-heading	Title Case letters of 12 points	
Title Page		
Supervisor certification page		
Linguistic evaluation certification page	Please see the attached sample	
Examining committee certification page		
Table of Contents		
List of tables, figures and abbreviations	12 points of 1.5 spaced line	
Page number	10 points	
References	12 points of single space line	

8. Spacing

- The spacing between a chapter title and the first line of the text should be four (4) line spaces.
- The spacing between a subsection title and the first line of the text should be zero (0) line spaces.
- The spacing between paragraphs should be one (1) line space.
- The number and title of a subsection should be aligned flush with the left margin.
- The first line of every paragraph should be indented by 0.63 cm (0.25 inches) from the left margin.
- The spacing between the last line of the text and a table, figure, or illustration should be one (1) line space before and after.
- The spacing after a comma (,) should be one character space.

9. Paragraph formatting

- All paragraphs must be fully justified (aligned to both left and right margins).
- The spacing between paragraphs in the body text should be single line space.
- A heading that appears as the last line of a page is not acceptable. Headings must always be followed by at least two lines of text.

• There must be a minimum of two lines of a paragraph remaining at the bottom of a page when a heading appears above them.

10. Chapter and Section Structure

- Each new chapter should start on a new page.
- Chapters must be titled (e.g., Chapter One: Introduction)
- All chapters and sections should follow a hierarchical numbering system (e.g., 1.1, 1.2.1)

11. Numbering of Headings

Use a hierarchical decimal system to number heading and subheading (Number of chapter.Number of heading.Number of subheading):

- 1st level of heading: 1.1, 1.2
- 2nd level of Subheading: 1.1.1, 1.1.2
- 3rd level of subheading: 1.1.1.1, 1.1.1.2

12. Line spacing

- The main body text of the thesis must be set to 1.5 line spacing throughout.
- Single-spacing is permitted only in the following cases:
 - O Appendices: including raw data, extended tables, or supplementary material.
 - Headings and subheadings: all heading levels should be single-spaced, with appropriate spacing before and after as defined in the spacing section.
 - Table and figure captions: captions placed above (for tables) or below (for figures) should be single-spaced and centered.
 - References or bibliography: each reference entry should be single-spaced, with a single blank line between each entry for readability.

13. Equations and formula

- Displayed and numbered equations are used for equations where one often has to refer back. They are numbered according to the chapter.
- Equation numbers should be enclosed in parentheses and placed on the right-hand side of a page.
- The equation numbers should incorporate the chapter number, for instance, (1.1), (2.3), (4.6), et cetera, and the equation numbering restarts at the beginning of each chapter. They should be enclosed by parentheses and placed on the right-hand side of a page.

$$y^2 = \frac{x^3}{z} e^n \tag{1.1}$$

- It is advisable to use Equation Editor or LaTeX.
- If an equation spans multiple lines, the lines should be aligned properly, and only one number should be used for the whole equation.

14. Symbols

Symbols or nomenclature should be defined. Standard symbols or acronyms normally accepted in the (Engineering/ Informatics) field can be used.

15. Abbreviations

A Term or name to be abbreviated, on its first appearance, must be spelled completely and followed immediately by its abbreviation in parenthesis in the text. Thereafter, the abbreviation may be used within the text without further explanation. For example, Malaysian Trade Union Congress (MTUC).

16. Figures

- Illustrations such as figures, and charts should in high resolution of 300 dpi.
- Illustrations should be referred to as Figure 1 to Figure N, using Arabic numerals.
- All figures must be original, unless indicated otherwise and accompanied with permission to reproduce from the copyright holder
- A caption should be placed at the bottom of the figure rather than at the top, it should be self-contained and consist of a brief title and a concise description of the illustration.
- All figures must be numbered with respect to the chapter using Arabic numerals. For example, Figure 4.3 is the third figure that appears in Chapter 4.
- A figure should be placed after the paragraph where it is first mentioned. If the figure is large, it can start on the next page after it is mentioned.
- Figures composed of multiple parts, label each segment accordingly with "(a)" and "(b)" for clarity and should each be described in order within the caption.
- If the figure occupies more than one page, the continued figure on the following page should indicate that it is a continuation.

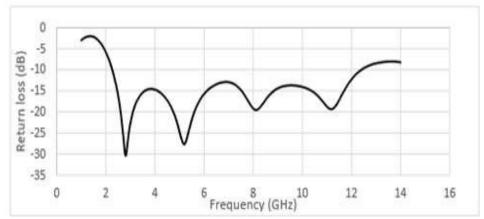


Figure 1.1: Caption 1.

17. Tables

- All tables must be numbered using Arabic numerals aligning with the chapter. For example, Table 2.1 is the first table that appears in Chapter 2.
- All tables in the text as well as in the appendices should be referenced in the text.
- Captions should be positioned at the top of the table (see Figure 3.1). Single-line captions should be centred while multiple-line captions should be left-indented.
- Tables should be placed after the paragraph where they are first mentioned. If a table is very large and continues onto the next page, it can start on the next page after it is first mentioned.

- A table may be placed in landscape orientation with its number and caption in a single space and placed above the table.
- If the table occupies more than one page, the continued table on the following page should indicate that it is a continuation, for example: 'Table 3.7: continued'. The header row should also be repeated.
- Use font size 10-point and single spacing for data in tables.
- Table sources and notes should be placed directly below the table with single spacing and a font size of 10.

Table 1.1: Table Caption

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Sources:

18. 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.
- Page number of appendices must be related to each appendix. For example: A1, A2, etc.

19. References

To ensure academic rigor and consistency, all sources cited in the thesis must adhere to the following referencing standards:

- IEEE style should be used, refer to the sample of the references section at the end of the thesis.
- Proper referencing demonstrates the breadth of literature reviewed and reinforces the academic integrity of the research. Failure to include full and accurate references may be considered plagiarism, a serious form of academic misconduct.
- Primary sources such as peer-reviewed journal articles published in reputable, indexed databases (e.g., Scopus, Web of Science, IEEE Xplore) are the most credible and preferred references.
- Unpublished materials, such as personal communications or observations, should only be cited when the information is essential and unavailable from accessible published sources.
- All borrowed ideas, data, text, or visuals—including figures, tables, and diagrams—must be properly acknowledged, even when permissions are granted or material is considered public domain.

- While review articles are useful for providing a general overview and guiding researchers to relevant literature, students are encouraged to cite original research papers whenever possible to ensure accuracy and credibility.
- Articles that have been accepted for publication but are not yet published should be cited as "In press" following the title of the work.
- Use a reference management tool (e.g., Mendeley, EndNote, Zotero) to manage and format citations and bibliographies efficiently and correctly.
- Each reference in the reference list must include all essential bibliographic details such as authors, title, publication source, volume, issue, page numbers, year, and, where available, a Digital Object Identifier (DOI). Including the DOI ensures easy access and enhances the credibility and traceability of the cited source.
- When a source has six or fewer authors, list all authors. For sources with more than six authors, list only the first author followed by et al. in the reference list, in accordance with IEEE style.

20. In-text Citation

- The IEEE style employs a numerical system for intext citation, numbering in-text citations in the paragraph using brackets [#] according to their appearance order.
- Before any punctuation, enclose each citation number in square brackets on the same line as the text, leaving a space before the bracket [2].
- Once you cite a source, you use the same number for all subsequent citations to the same source.
- Et al. should be written in italic in the in-text citation.
- Here are some examples of IEEE style intext citation:

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"The theory was first put forward in 1987 [1]."
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"For example, Brown [2] suggested that"

"For example, Brown and Fidel [3] suggested that"

"... as shown by Brown et al. [4],"

"Recent studies [3, 4] suggested that..."

"Recent studies [3-5] suggested that..."

"Recent studies [3-5, 10-13] suggested that..."

21. Academic Integrity and AI tools

- Academic integrity is a fundamental principle in thesis writing, and all forms of plagiarism are strictly prohibited. Students must ensure that all submitted work is their own and appropriately cite all sources of ideas, data, and text.
- Misuse of AI tools to produce unoriginal work constitutes a violation of academic standards and may result in disciplinary consequences.

22. The Hard Cover and Binding

- The final submitted thesis or dissertation must be hardbound with a durable cover suitable for long-term storage and archiving.
- The layout of the front cover must exactly replicate the title page, with all text printed in gold foil lettering.

- The spine of the thesis should include the degree title at the top (e.g., MSc, PhD), the candidate's full name at the center, and the year of submission at the bottom. All text must be oriented horizontally and printed in gold foil.
- The color of the hardcover of the MSc thesis is maroon.
- The color of the hardcover of the PhD dissertation is black.
- Color font of the cover should be #D4AF37

The following pages provide a sample thesis, showcasing the complete structure and content, including detailed examples of each chapter and section.

Kurdistan Region-Iraq
Kurdistan Regional Government
Ministry of High Education and Scientific Research
Sulaimani Polytechnic University
Technical College of Engineering (or) Informatics



Thesis Title

A Thesis Submitted to the Council of Technical College of Engineering/ Informatics- Sulaimani Polytechnic University in Partial Fulfillment of the Requirements for the Degree of Master of Science in (field of

the study program)

By

Student Full Name
BSc- Department –University (year)

Supervised by Supervisor's academic title and full name

Month, Year in English

Month, Year in Kurdish

Kurdistan Region-Iraq
Kurdistan Regional Government
Ministry of High Education and Scientific Research
Sulaimani Polytechnic University
Technical College of Engineering (or) Informatics



Dissertation Title

A dissertation
Submitted to the Council of Technical College of Engineering/
Informatics- Sulaimani Polytechnic University in Partial Fulfillment of
the Requirements for the Degree of Doctor of Philosophy in (field of the
study program)

By

Student Full Name
MSc- Department –University (year)

Supervised by Supervisor's academic title and full name

Month, Year in English

Month, Year in Kurdish

Kurdistan Region-Iraq
 Kurdistan Regional Government
 Ministry of High Education and Scientific Research
 Sulaimani Polytechnic University
 Technical College of Engineering(or) Informatics



Thesis or Dissertation Title

(Times New Roman, 18, Bold, Centered)

A Thesis or Dissertation
Submitted to the Council of Technical College of Engineering/
Informatics- Sulaimani Polytechnic University in Partial Fulfillment of the Requirements for the Degree of Master of Science or Doctor of Philosophy in (field of the study program)

(Times New Roman, 14, Centered)

By

(Times New Roman, 14, Centered)

Student Full Name

(Times New Roman, 16, Bold, Centered)

BSc- Department –University (year) (for MSc Thesis) MSc- Department –University (year) (for PhD. Dissertation)

(Times New Roman, 14, Centered)

Supervised by

(Times New Roman, 14, Centered)

Academic title Dr. Supervisor Full Name

(Times New Roman, 14, Bold, Centered)

Month, Year in English

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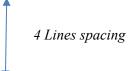
ear in Kurdish

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3.25 cm (1.3 inch)

3.25 cm (1.3 inch)

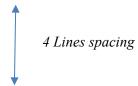
SUPERVISOR CERTIFICATION



I (We) certify that this thesis entitled "Full Thesis/ Dissertation Title" was prepared by Student Name, under my (our) supervision at Sulaimani Polytechnic University (Technical College of Engineering/ Informatics, in partial fulfillment of the requirements for the degree of (Master of Science or Doctor of Philosophy) in (field of the study program).

ino study program).	
Signature:	Signature:
Name of Supervisor I	Name of Supervisor II
Date: :DAY MONTH YEAR	Date: :DAY MONTH YEAR
In view of the available recommendation,	I forward this thesis for debate by th
examining committee.	
Signature:	
Name of head department	
Date: :DAY MONTH YEAR	
I certify that this thesis was prepared by Stu	ident Name in the department Department
Name.	
Signature:	
Name of Head of the Post Graduation Studie	s and Scientific Affairs
Head of the Post Graduation Studies and Science	entific Affairs
Date: :DAY MONTH YEAR	

LINGUISTIC EVALUATION CERTIFICATION



I hereby certify that this thesis entitled "Thesis/ Dissertation 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.

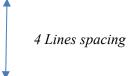
Signature:----

Name:

Position:

Date: :DAY MONTH YEAR

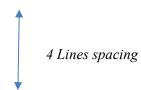
EXAMINING COMMITTEE CERTIFICATION



We certify, as an examining committee, that we have read this thesis entitled "Thesis/ Dissertation Title", examined the Student Full Name in its contents and found it meets

the standard of a thesis for the de	egree of (Master of Science / Doctor of Philosophy
(PhD)) in (field of the study prog	ram).
 Signature:	Signature:
Name: NAME	Name: NAME
UNIVERSITY NAME	UNIVERSITY NAME
Member	Member
Date: :	Date: :
Signature:	Signature:
Name: NAME	Name: NAME
UNIVERSITY NAME	UNIVERSITY NAME
Chairman	Supervisor
Date: :	Date: :
Note: The number of committee members page.	s depends on the degree (MSc or PhD) and should be added to this
pproved by the Dean of the Techn	ical College of Engineering (or) Informatics
 	Signature:
	Name: NAME
 	Dean of College
I	Date: :

DECLARATION



Name of Candidate: FULL NAME

Name of Degree: Doctor of Philosophy (PhD) (or Master (MSc))

Title of the Thesis/ Dissertation:

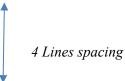
Field of study:

I do solemnly and sincerely declare that:

- I am the sole author/writer of this work;
- This work is original;
- Any use of any work in which copyright exists was done by way of fair dealing
 and for permitted purposes and any excerpt or extract form, or reference to or
 reproduction of any copyright work has been disclosed expressly and sufficiently
 and the title of the work and its authorship have been acknowledged in this work,
- I do not have any actual knowledge nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyright work;
- I am fully aware that if in the course of making this work, I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by the university.

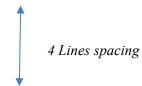
Candidate's Signature:
Candidate's name:
Date:

DEDICATION



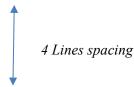
This is a sample on how to write dedication: I dedicate this thesis to my beloved parents, whose endless love, prayers, and sacrifices have shaped who I am today. Their unwavering belief in me has been my constant motivation. I also extend my heartfelt gratitude to my professors and mentors for their guidance and support throughout this academic journey. To my friends and colleagues, thank you for your encouragement and companionship. Lastly, this work is dedicated to all those who strive for knowledge and never give up in the face of challenges. May this thesis serve as a small step forward in the pursuit of greater understanding.

ACKNOWLEDGEMENT



I would like to express my deepest appreciation to my supervisor, "Dr. Prof. Name", for their expert guidance, insightful feedback, and continuous support throughout the course of this research. I am also grateful to the academic and technical staff of "Department/Institution Name" for their assistance and for providing the necessary resources and infrastructure. This work has benefited greatly from discussions with colleagues and peers whose constructive suggestions enhanced the quality of this thesis. I am also thankful to "Funding Body/Project Name, if applicable" for their financial support. This research would not have been possible without the contribution of all these individuals.

ABSTRACT



The abstract should not exceed two pages and should be structured as follows: begin with a clear statement of the research purpose, identifying the central problem or research question that the thesis addresses. This should be followed by a brief explanation of the research significance and context. Next, summarize the methodology used, including the research design, data collection methods, and analysis techniques, highlighting any specific tools or models applied. Afterward, present the main findings or results of the study, emphasizing any patterns, relationships, or outcomes that emerged. Conclude the abstract by outlining the key conclusions drawn from the research and discussing the broader implications or contributions to the field. The abstract should be written as a single, coherent paragraph, free of citations or unexplained abbreviations, and should provide a self-contained overview that enables the reader to understand the essence of the thesis without referring to the full document.

LIST OF PUBLICATION

4 Lines spacing

Journal title:

Type of indexing: (Web of science, Scopus, Local) journal.

R. M. Abdalrahman, S. Rostam, and H. D. Lafta, "Bettered strength and fracture behavior of plain weave carbon fiber reinforced epoxy laminate with open hole under the influence of hole shape/size and strain rate," *Results in Engineering*, vol. 25, p. 103906, 2025/03/01/2025, doi: https://doi.org/10.1016/j.rineng.2024.103906.

Journal title:

Type of indexing: (Web of science, Scopus, Local) journal.

R. K. Muhammed, Z. N. Rashid, and S. J. Saydah, "A Hybrid Approach to Cloud Data Security Using ChaCha20 and ECDH for Secure Encryption and Key Exchange", *KJAR* vol. 10, no. 1, pp. 66–82, Mar. 2025, doi: 10.24017/science.2025.1.5.

TABLE OF CONTENTS 4 Lines spacing LIST OF FIGURES X LIST OF TABLES XI LIST OF ABBREVIATIONS XII LIST OF SYMBOLS XIII CHAPTER ONE: INTRODUCTION 1.1 Introduction 1.2 Problem Statement 1.3 Scope of the Research (*Optional*) 1.4 Research Aims and Objectives 1.5 Significance of the Research (MSc) (or) Contribution (PhD) 1.6 Thesis Outline CHAPTER TWO: THEORETICAL BACKGROUND AND LITERATURE REVIEW 2.1 Item1 2.2 Item 2 3 2.3 Item 3 CHAPTER THREE: METHODOLOGY (OR) PROPOSED SYSTEM 3.1 Item 1 3.2 Item 2 3.3 Item 3 CHAPTER FOUR: RESULTS AND DISCUSSION 4.1 Study Line 1 4.1.1 Item 1 4.1.2 Item 2 4.2 Study Line 2 (if present) 4.2.1 Item 1 5 4.2.2 Item 2 4.3 Study Line 3 (if present) CHAPTER FIVE: CONCLUSIONS AND FUTURE WORK 5.1 Conclusions 5.2 Recommendations (or) Future Work References Appendix A

LIST OF FIGURES

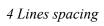


FIGURE NO.	CAPTION	PAGI
Figure 1.1	List of figures should be generated automatically using word to maintain any update will happen	3
Figure 1.2	All figures must be of high quality and legibility.	5
Figure 4.3	All figures must be numbered with respect to the chapter using Arabic numerals. For example, Figure 4.3 is the third figure that appears in Chapter 4.	24

LIST OF TABLES

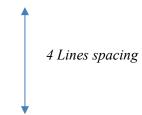
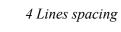


TABLE NO. CAPTION PAGE

Table 1.1 List of tables should be generated automatically using word to maintain any update will happen 3

LIST OF ABBREVIATIONS 4 Lines spacing **ABBREVIATION DESCRIPTION** Artificial Neural Network ANN Genetic Algorithm GA Note: The abbreviations must be arranged in alphabetical order.

LIST OF SYMBOLS



Symbol	Description
Ω	Omega
Γ	Gamma
Δ	Delta
Θ	Theta

Note: The symbols must be arranged in alphabetical order.

CHAPTER ONE INTRODUCTION

4 Lines spacing

1.1 Introduction

The introduction should be written in a coherent and engaging style, guiding the reader through the context of the research like a well-structured narrative. It sets the stage for the entire thesis by clearly presenting the topic, motivation, and direction of the study.

1 Line spacing

1.2 Problem statement

This is a clear and concise description of the issue or challenge the research aims to address. It highlights the gap in knowledge or practical concern that the study will tackle, helping to align the reader's understanding with the core focus of the investigation.

1.3 Scope of the Research (Optional)

This section defines the boundaries of the study. It specifies what is included and excluded in the research, outlining the parameters and limitations that frame the investigation.

1.4 Research Aim and Objectives

The **aim** articulates the overall purpose and direction of the study, providing a broad research goal. The **objectives** break down this aim into specific, actionable steps that guide the research process and define what the researcher intends to achieve.

1.5 Significance of the Research (MSc) / Contribution of the Study (PhD)

This section explains the importance of the research. For MSc theses, it highlights the practical or academic relevance of the study. For PhD dissertations, it emphasizes the original contribution the research makes to the existing body of knowledge in the field.

1.6 Thesis Outline	
This part outlines the organization of the thesis, briefly describing the content of ea	ach
chapter. It serves as a roadmap for the reader, providing a clear overview of how	the
research is structured and developed throughout the document.	1
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CHAPTER TWO

THEORETICAL BACKGROUND AND LITTERATURE REVIEW

This chapter provides a comprehensive foundation for the research by reviewing existing studies, theories, and methodologies relevant to the topic under investigation. The chapter includes the following key components:

- A detailed overview of the methods, techniques, models, or algorithms (if applicable) that form the foundation of the proposed research.
- A critical and comprehensive review of previous studies conducted in the area of interest, analyzing major findings, trends, and scholarly contributions.
- An in-depth examination of relevant published work, including theoretical perspectives, experimental approaches, and key proposals made by other researchers.
- A synthesis of existing theories and models related to the research topic, providing a context for how the current study builds upon or diverges from previous work.
- Identification of research gaps based on the review, clearly justifying the need for the present study and demonstrating how it contributes new knowledge to the field.
- All references must be cited using a consistent referencing style appropriate to the discipline and as prescribed by the academic institution.

Note: Number of the sections and their titles are free to the researcher.

CHAPTER THREE METHODOLOGY (or) PROPOSED SYSTEM

This chapter outlines the overall approach and procedures used to conduct the research. It provides a clear and detailed explanation of how the study is designed implemented, and analyzed. The content of this chapter typically includes:

- A description of the research design and methodology, specifying whether the study is qualitative, quantitative, or mixed-methods.
- A step-by-step account of the research process, detailing the sequence of activities undertaken to achieve the research objectives.
- An explanation of the tools, materials, equipment, datasets, software, or algorithms employed in the study.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter presents and analyzes the outcomes of the research, whether they are derived from experimental work, modeling, or simulation studies. It provides a clear interpretation of the findings in the context of the research objectives and relevant literature. The chapter typically includes the following components:

- Modelling and Simulation Experiments Results, or / and results from experiments works.
- 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.
- Also, the researcher will need to state the results of the research. There may be graphs, tables, figures, etc., all of which you need to describe.
- An assessment of the experimental results or / and Modelling and Simulation 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.
- The researcher will need to discuss the previously mentioned results.
- The researcher should address his/her research questions and explain how his/her research relates to previous researches.

CHAPTER FIVE CONCLUSIONS AND FUTURE WORK

This chapter presents a synthesis of the major findings, interpretations, and insights gained through the research. It moves beyond simply restating results, focusing instead on drawing meaningful conclusions and identifying the broader implications of the study. The aim is to convey the significance of the research outcomes and outline possible directions for future investigation.

5.1 Conclusions

This section should present clear and concise conclusions based on the research findings. Each conclusion must be directly linked to the research objectives and questions butlined at the beginning of the study. These should be stated as precise, unambiguous points—preferably as a numbered or bulleted list for clarity. The conclusions must reflect a deep understanding of the data and should avoid vague or unsupported claims. Each statement should answer a specific research question or objective and demonstrate how the study contributes to existing knowledge in the field.

5.2 Recommendations / Future Work

This section should emerge logically from the study's findings and the researcher's experience during the investigation. Recommendations may include practical applications, theoretical extensions, or areas that require further exploration due to limitations or unanswered questions in the current study. Future work should suggest how the research can be expanded or refined, highlighting unresolved issues or newly identified research gaps. Recommendations should also consider how the study's results could be applied in real-world contexts. Both conclusions and recommendations should be presented in order of importance, starting with the most significant points.

REFERENCES

Journal article

[Ref number] Author's initials. Author's Surname, "Title of article," *Title of journal*, voll number, issue number, page numbers, Abbreviated Month Year, DOI (if available, if not URL should be provided).

References with up to six authors

[1] O. C. Abikoye, A. D. Haruna, A. Abubakar, N. O. Akande, and E. O. Asani, "Modified advanced encryption standard algorithm for information security," *Symmetry*, vol. 11, no. 12, p. 1484, Dec. 2019, doi: 10.3390/sym11121484.

References with more than six authors

[2] S. Tomczyk *et al.*, "The first WHO global survey on infection prevention and control in health-care facilities," *Symmetry*, vol. 22, no. 6, pp. 845–856, Feb. 2022, <u>doi</u> 10.1016/S1473-3099(21)00809-4.

Book

[Ref number] Author's initials. Author's Surname, Book Title, edition (if not first). Place of publication: Publisher, Year, page numbers (if available), ISBN: xxxx-xxxx-xxxx (if available)

[3] I. A. Glover and P. M. Grant, Digital Communications, 3rd ed. Harlow: Prentice Hall 2009, pp. 13-17.

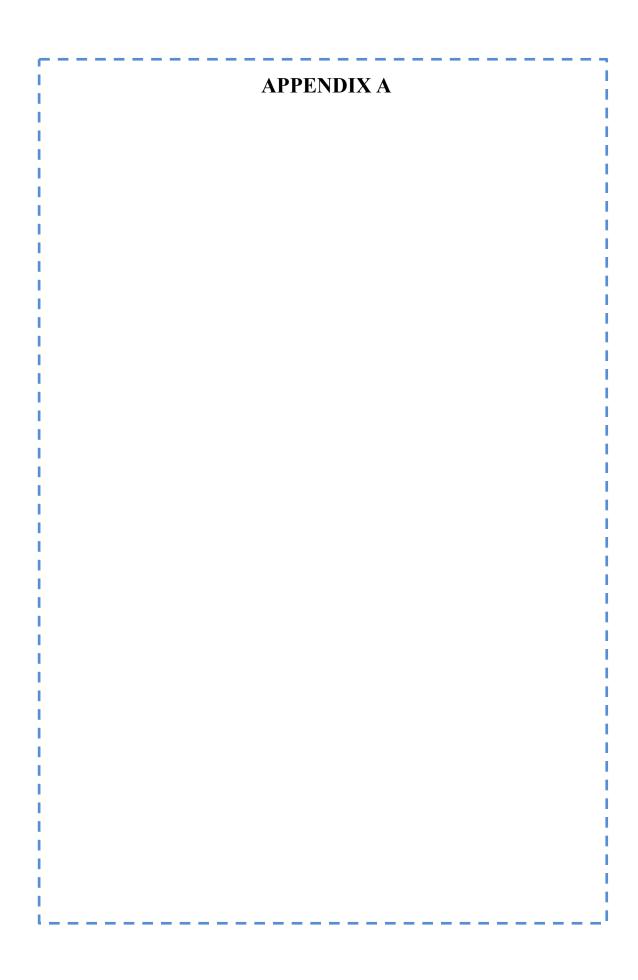
Electronic Book

[Ref number] Author(s) Initial(s). Surname(s), *Title of the E-book*. xth ed. City, Country Publisher, Year of Publication. Accessed: Abbreviated Month Day, Year. Page numbers [Online]. Available: URL or DOI [4] D. Ashby, *Electrical Engineering 101: Everything You Should Have Learned In School – But Probably Didn't*. Boston, MA: Newnes, 2012. Accessed: Oct., 25, 2013, pp 13–17. [Online]. DOI: https://doi.org/125364/125-22

Book chapter

[Ref number] Author's initials. Author's Surname, "Title of chapter in book," in *Book Title*, Series Title, edition (if not first), Editor's initials. Editor's Surname, Ed. Place of publication: Publisher, Year, page numbers, DOI [5] C. W. Li and G. J. Wang, "MEMS manufacturing techniques for tissue scaffolding devices," in *Mems for Biomedical Applications*, S. Bhansali and A. Vasudev, Eds. Cambridge: Woodhead, 2012, pp. 192-217, https://doi.org/10.1007/978-3-031-46002-9 9

Handbooks
[Ref number] Name of Manual/Handbook, x ed., Name of Co., City of Co., State, Country
year, pp. xxx-xxx
[6] Transmission Systems for Communications, 3rd ed., Western Electric Co., Winston
Salem, NC, USA, 1985, pp. 44–60.
Conference papers
[Ref number] Author's initials. Author's Surname, "Title of paper," Conference Title
City, Country, Year, pp. xxx, DOI
[7] S. Adachi, T. Horio, T. Suzuki. "Intense vacuum-ultraviolet single-order harmonid
pulse by a deep-ultraviolet driving laser," in Conference Lasers and Electro-Optics, Sar
Jose, CA, 2012, pp.2118-2120, https://doi.org/10.1007/978-3-031-46002-9_9 .
Theses/Dissertations
[Ref number] Author's initials. Author's Surname, "Title of thesis," Designation type
Dept., Univ., City of Univ., State, Year
[8] J. O. Williams, "Narrow-band analyser," Ph.D. dissertation, Dept. Elect. Eng., Harvard
Univ., Cambridge, MA, 1993.



الخلاصة



اقليم كردستان- العراق حكومة أقليم كردستان وزارة التعليم العالى والبحث العلمي جامعة السليمانية التقنية الكلية التقنية الهندسية/ الكلية التقنية المعلوماتية

اسم الاطروحة

الرسالة

مقدمة الى مجلس الكلية التقنية الهندسية / الكلية التقنية المعلوماتية في جامعة السليمانية التقنية كجزء من متطلبات

نيل شهادة (الماجستير /دكتوراه فلسفة) في علوم (اختصاص برنامج الدراسه)

من قبل

(اسم الطالب)

بكلوريوس جامعة (سنه) (لطالب الماجستير)

ماجستير..... جامعة (سنه) (لطالب الدكتورا)

اشراف

(اللقب العلمي)

(اسم المشرف)

الشهر والسنة الميلادية الشهر والسنة الهجرية (تاريخ المناقشة) (تاريخ المناقشة)



ههریمی کوردستان- عیراق حکومه تی ههریمی کوردستان وهزاره تی خویندنی بالاو تویژینه وهی زانستی زانکوی پولیته کنیکی سلیمانی کولیجی ته کنیکی نینفورماتیک

ناونيشانى تويزينهوه

نامهيهكه

یشکهش کراوه به ئهنجوومهنی کولیجی تهکنیکی ئهندازیاری / کولیجی تهکنیکی ئینفورماتیک له زانکوی پولیتهکنیکی سلیمانی وهک بهشیک له پیداویستیهکان بهدهستهینانی بروانامهی ماستهر / دکتورای فهلسهفه له (پسپوری پروگرامی خویندن)

له لايهن

(ناوی خۆیندکار)

به کالۆريۆس – زانكۆى (ساڵ) (بۆ خويندكارى ماستهر) ماستهر – زانكۆى (ساڵ) (بۆ خويندكارى دكتۆرا)

بهسهرپهرشتی (نازناوی زانستی) (ناوی سهرپهرشتیار)

مانگ وساڵی زایینی مانگ وساڵی کوردی (بهرواری گفتوگۆ) (بهرواری گفتوگۆ)



