



# GUIDLINES THESIS WRITING

**STUDY PROGRAM**  
BACHELOR OF PHYSICS

FACULTY OF MATHEMATIC AND  
NATURAL SCIENCES  
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## **GUIDELINES THESIS WRITING**

(Physics Study Program, FMIPA Universitas Padjadjaran)

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## FOREWORD

We always praise and thank God Subhanahu Wata'ala because thanks to His help, the thesis writing manual for students of the Physics Study Program can be completed properly. Shalawat and greetings may always be poured out to His Majesty the Prophet Muhammad Sallallahu alaihi wasallam.

This thesis writing guidebook is a derivative of the thesis guidelines set by the university. Some adjustments were made such as writing rules, rules for writing citations and making bibliography and format adjustments. Especially for citations and bibliography, in writing this thesis used Harvard system (*Harvard Style*).

The preparation of this thesis manual refers to Unpad Rector's Regulation No. 391/H6.1/KEP/PP/2011 concerning Guidelines for Preparation and Writing of Thesis for Undergraduate Program of Padjadjaran University. This regulation is reaffirmed in Unpad Rector's Regulation No. 16/2016 concerning Final Project Writing at the Undergraduate and Applied Bachelor Education Levels within Padjadjaran University.

The author realizes that the preparation of this thesis writing manual still has many shortcomings. Therefore, constructive input is always expected. Finally, hopefully this book is useful, especially for students of the Physics Study Program who are in the stage of compiling a thesis.

Jatinangor, May 2023

Head of Study Program

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## CHAPTER I INTRODUCTION

### 1.1. Definition of Thesis

Thesis is a scientific paper, in the form of exposure to research results that discuss a problem in a particular field of science using scientific rules that apply in a particular field of science. Research is a planned, directed, systematic and controlled activity in an effort to obtain data and information using scientific methods to answer questions or test hypotheses in certain fields of science.

Data sources for thesis preparation can be obtained through primary data, secondary data, and tertiary data. Primary data is data obtained by researchers in the field, either through interviews or other direct measurement results. Secondary data is data obtained by utilizing the results of other parties' data collection, such as weather profile data, Central Statistics Agency data, and medical records. Tertiary data can be obtained from theses, dissertations, journals, and scientific magazines.

### 1.2. Thesis Position and Credit Weight

Thesis has the same position as other courses, but different forms in the learning process, as well as the way it is assessed. This thesis is a *final assignment* which is a prerequisite for the graduation session of the undergraduate study program. The weight of the thesis is set at 6 credits, which is equivalent to academic activities every week of 24-30 hours or equivalent to academic activities of 600-750 hours in one semester.

### 1.3. Purpose of Thesis Writing

Thesis preparation is carried out with the aim that:

1. Students are able to compile and write a scientific paper, in accordance with the field of science taken.
2. Students are able to conduct research starting from formulating problems, collecting data, processing data, analyzing data, and drawing conclusions.
3. Helping students convey, use, apply the knowledge and knowledge gained into an integrated system for the development of knowledge.

### 1.4. Academic Requirements

The academic requirements that must be met by students who will compile a thesis are as follows:

1. Students have at least 120 credits of credit savings or around 80% of the cumulative study load that must be taken.
2. Students have completed all core physics courses.

## CHAPTER II SYSTEMATICS OF THESIS WRITING

The systematics of thesis writing consists of three main parts, namely:

1. initial part,
2. core part, and
3. the end.

### 2.1. Initial Part

The initial section consists of the following sections:

- a. Outer cover page.
- b. Inside cover page.
- c. Attestation sheet page.
- d. Abstract page (version Indonesian).
- e. Abstract page.
- f. Preface page.
- g. Table of contents page.
- h. Table page (if any).
- i. Image list page (if any).
- j. Chart list page (if any).
- k. Glossary page (if applicable).
- l. Attachment list page (if any).

The following is an explanation of each section included in the beginning of the thesis.

#### a. Outer Cover Page

The outer cover page of the thesis must contain the following sections:

1. The title (and subtitle) of the thesis.
2. The writing of the word "THESIS".
3. Thesis writing information.
4. Name and NPM of the author.
5. Unpad official logo.
6. Author's universities, faculties, and study programs.
7. Year of graduation.

#### b. Inside Cover Page

The inner cover page is written the same as the outer cover page of the thesis and contains sections as well as the outer cover page.

#### c. Attestation Sheet

The attestation sheet page contains the following sections:

1. The words "ENDORSEMENT SHEET" are written.
2. The title (subtitle) of the thesis.
3. Full name of the author.
4. NPM author.
5. Place and time of the hearing.
6. Supervisor and head of study program.

**d. Abstract**

The abstract page contains the following 5 important sections:

1. Research background briefly.
2. Purpose.
3. Research methods.
4. Results and conclusions of the study.
5. Discussion.

Abstract is a text extract that is made concisely and clearly and concisely. Abstracts are written 150 to 300 words and are equipped with a maximum of 5 keywords.

**e. Abstract**

Abstract is the English version of abstract in Indonesian and is written concisely and follows English grammar and English time rules in the form of past tenses, except for the justification part of the problem. These parts of the abstract are the same as the abstract in Indonesian which is written 150 to 300 words and comes with a maximum of 5 keywords.

**f. Foreword**

The preface contains the author's statement in writing the thesis, for example in the form of gratitude to all related parties who have contributed to the author in completing the writing of his thesis. Written using standard Indonesian.

The title of the thesis in the preface is enclosed in quotation marks ("..."), written in regular format, not in bold, and only the first word of the title uses capital letters except proper nouns. The names of supervisors, deans, department heads, heads of study programs must be completed with the correct academic title without the words father or mother. At the end of the preface, the author lists the city and month of writing the thesis and writes the word "Author" at the bottom. The font size used is 12 pt with 2 spaces between lines.

**g. Table of Contents**

The table of contents can be used by the reader to provide an overview or clue about the overall content of the thesis. This section is quite important so that the author must really pay attention to the procedure for writing a table of contents according to the instructions. If the author uses Microsoft Word, then writing a table of contents must automatically use the software feature and should not be written manually. Students who use Latex, can use bibliography to create a table of contents page.



**h. Table (if any)**

The table list page is a table of contents that contains the numbers and titles of the tables if the thesis includes tables. The writing of the table is sorted by the order of the table in each chapter. The table title is placed at the top of the table with a font size of 12 pt.

**i. Image List (if applicable)**

The image list page is a table of contents that contains the number and title of the image if the thesis includes images. How it is written will be explained later.

**j. Glossary (if applicable)**

In writing a thesis, sometimes terms that are not general in nature appear. To make it easier for readers to understand these terms/glossaries, the author can create a glossary page.

**k. List of physical Notations/Symbols (if any)**

Similar to the glossary page, in writing a thesis, sometimes notations or physical symbols / symbols that are not common in nature appear. The notations or symbols / symbols can be explained first by creating a list page of physical notations or symbols.

**l. Attachment List**

In this case, to clarify the results obtained, the author can make an appendix containing additional processes or arguments. For example, the author can list a program listing if in the research process using software tools such as Maple, Python, Matlab, raw data for research, and others. The author can also make an appendix to the proof of a theorem, lemma, the effect if the three postulates are not the main results in his research.

## **2.2. Main Parts**

In general, the main part of the thesis contains the following parts:

### **A. CHAPTER I INTRODUCTION**

In this section, the author should describe the following sections:

- 1.1. Background.
- 1.2. Identify the Problem.
- 1.3. Problem Limitations.
- 1.4. Research Objectives.
- 1.5. Research Benefits.

#### **1.1. Background.**

This paragraph contains the motive or motivation for research in the thesis. This can mean the following:

1. Describe what drives researchers to carry out their research,
2. The description should be an encouragement for others to read the later

parts of the thesis. In other words, the descriptions in this paragraph must be able to arouse the reader's reading interest.

In general, the introduction can be based on W7H, namely:

1. why,
2. what,
3. where,
4. when,
5. who,
6. what if.
7. how.

In this paragraph it is also necessary to describe the extent to which the problem has been studied. The problem to be studied must have validity and *reliability*.

The four background components of the problem that need to be considered are:

1. k the consistency of the problem to be studied.
2. relevance and intensity of influence of the problem under study on the physical aspect.
3. compatibility of the methodological approach used.
4. Overview of the usefulness of research results.

On the part of the researcher, the disclosure of this section can be based on the following questions:

1. What is known, both theoretically and factually, about the problem under study?
2. Is there a problem there; Is there any "doubt" in the matter?
3. What is the interesting part of the problem under study?
4. Is it technically possible for the problem to be researched?

### **1.2. Identify the Problem**

Problem identification is an aspect of abstraction and proper selection of the aspect under study. In other words, problem identification is the core of the problem phenomenon under study as a result of the gap between the theory or the results of previous research with the expected reality or target. Identify the problem written in the form of a question sentence.

### **1.3. Problem Limitation**

So that the scope of the problem does not expand, the formulation of the problem in research needs to be limited. The limitations of the problem are listed in this subchapter. Problem limitations may include: physical parameters studied, methods used or specific conditions in the research conducted.

### **1.5. Research Objectives**

The purpose of the study reveals measurable indicators of what will be found / studied in the research. Thus, the sentences that are the goal must be answered in the results of the study. Goals are written in the form of active voice, which begins with the prefix "me".



### **1.6. Research Benefits**

This paragraph explains the usefulness of research from theoretical aspects and practical aspects for society and for the development of science. The usefulness of research is the benefit of the results of achieving research objectives.

## **B. CHAPTER II LITERATURE REVIEW**

This section contains theories needed in the analysis of test results data or theories to support the simulation and resolution of physical cases studied in the final project. The author only lists theories that are relevant to the research conducted. In addition, in this section, the author can list the working principle of the test equipment used.

Literature Review contains concepts / theories / generalizations that can be used as a basis for thinking for researchers so that researchers have a logical foundation in their research not just *trial* and *error*. In general, this section contains concepts that underlie research consisting of definitions, basic concepts, working principles, understandings and properties needed for discussion in subsequent chapters, especially in Chapter IV, namely Results and Discussion. If needed, this section can contain more focused / specific hypotheses. Hypotheses (if any) contain brief statements that are inferred from the theoretical basis or literature review and are a provisional answer (*conjecture*) to the problem at hand, and still have to be proven.

In this chapter, the author can explain theories relevant to the problem under study and can also contain a description of secondary / tertiary data obtained both from previous research results and from scientific journals.

## **C. CHAPTER III RESEARCH METHODS**

In this section, the author presents in detail about the object and method of research and the steps of research it performs. In this section, the procedure of obtaining or collecting data can be clearly described and given illustrations such as drawings, photographs, tables, graphs or flow charts.

If the topic of the Thesis allows it to be described in the form of problem-solving procedures, then the title for Chapter III is "Research Objects and Methods". Otherwise, the title for this chapter may directly mention the problem under study. In this chapter described the problems that will be discussed in detail and / or the model used to solve them.

This chapter is described in more detail and coherent research design, research procedures, techniques / methods of obtaining data, determination of research variables, analytical techniques and other methods

## **D. CHAPTER IV RESULTS AND DISCUSSION**

This section is the most important part in thesis writing. Research results can be presented in the form of test result data or simulation result data. Furthermore,

to clarify the results of the study, the author can add illustrations in the form of images, photos, tables, graphs, flow charts, and others. The presentation in the form of illustrations must contain all information on research results and be representative / *self-explanatory* so that readers can understand the results of the research clearly. What is meant by discussion is the meaning of the data or theory obtained. Extermination should also be linked to the purpose of the study.

This chapter also outlines what, how, and research results obtained. The discussion here must be able to answer the problems raised in Chapter I, especially the research objectives. The description of the results of this study is followed by discussion, and at the end of the chapter a summary of the results of the discussion can be given. The predetermined objectives must be answered in this Chapter IV.

#### **E. CHAPTER V CONCLUSIONS AND SUGGESTIONS**

Conclusion is the crystallization of the results of interpretation and analysis of a study while suggestions are a continuation of conclusions or things that can be revealed in future research based on the results of the research obtained. The conclusion is made in the form of a clear statement and does not include mathematical equations, so it does not give rise to other interpretations.

The information presented in the conclusion can be in the form of new opinions or corrections to old opinions. Conclusions are written in the form of pointers / numbers that are in accordance with the identification of the problem and the purpose of the research

Suggestions are a continuation of conclusions, in the form of policy or conceptual. Suggestions should be concrete, realistic, practical, and purposeful (called follow-up suggestions). Suggestions can also be made for follow-up research.



### **2.3. End of Part**

The End of part consists of:

- 1 Bibliography.  
The bibliography is written in *Harvard-style* format and written with the help of Mendeley or similar. Bibliography writing in *Harvard style* should be sorted alphabetically.
- 2 Appendices.  
This section contains tables of measurement data, program listings, statistical calculations, sample questionnaires, or written instruments used, and so on.

## CHAPTER III

### PROCEDURES FOR WRITING A THESIS

In this chapter will be explained about the layout process of a thesis such as typeface, size, spacing, citation method in Harvard style, making bibliography, tables, figures, and others.

#### 3.1. Materials used

1. The paper used to type or print a thesis is 80 grams of white A4 size HVS paper.
2. For the outer cover (outer shell) set hard cover. The material used is buffalo cardboard or linen with a rather dark yellow base color (UNPAD yellow).
3. For the attestation sheet using orange paper of white color 90 grams.
4. Each chapter is bordered with light yellow doorslag paper containing the Unpad logo.

#### 3.2. Typing

Typing is done by computer using MS Word or LATEX software following the format described in the guide.

##### **3.2.1. Paper Lay-Out/Layout**

Paper lay-outs are as follows:

- Top edge: 4 cm from the edge of the paper.
- Left edge/side: 4 cm from the edge of the paper.
- Edge/bottom side: 3 cm from the edge of the paper.
- Right edge/side: 3 cm from the edge of the paper.

##### **3.2.2. How to Type**

1. Typing is only done on one face of paper, not back and forth.
2. The font used is Times New Roman.
3. The font size used is 12 pt, except for chapter headers and chapter pointer numbers (from chapter 1 to chapter 5) size 14. For other headers measuring 12 pt.
4. The font size in the abstract page is 11 with single spaces and no indents.
5. Every writing formulas or physical or mathematical notations / symbols must use the equation editor application if in MS Word.
6. For printing, the ink used for text is black, while for images or graphics it can be color.

### **3.2.3. Space**

1. In Chapter I to Chapter V, the distance between one line and the next line is two spaces.
2. The distance between chapter pointers; e.g. **Chapter I** with its chapter header; For example, **the introduction** is two spaces.
3. The distance between the chapter header (chapter title) and the first text written, or between chapter headers (child chapters) is **four** spaces.
4. The distance between the subchapter header and the first line of text is two spaces.
5. The distance between the final line of text and the next subchapter header is four spaces.
6. The distance between the final line of text and the subchapter header of the next subchapter is two spaces.
7. The distance between text and the titles of tables, figures and graphs is **three** spaces.
8. A newly typed paragraph protrudes within 1 Tabs (0.5 inches) from the left margin of the text. The distance between one paragraph and another paragraph is two spaces.
9. Chapter pointers and headings always start with a new page.
10. Subchapter headings are capitalized at the beginning of each word except conjunctions and prepositions. Subchapter headings that are more than one line are spaced out.

### **3.3. Citations**

1. Direct quotations (can be in the original language or translations), consisting of no more than three lines, are inserted in the text with a fixed space of two spaces, followed by the author's name, year, and page.
2. Direct quotations (can be in the original language or translations), consisting of four or more lines, typed separately from the text, spaced one space apart and indented five tabs from the left margin of the text, followed by the author's name, year, and page.
3. The distance between the line of text and the direct quotation mentioned in point (2) above, and the distance between the line of direct quotation and the first line of the next text is two spaces.
4. The use of ideas or thoughts of a person who writes books, articles, etc., even though they are compiled using their own words, must be cited by following the rules of citation writing.
5. Quotes can be written in the form of paraphrases.

### **3.4. Headlines**

In this subchapter, procedures for writing headers such as font size and spacing are discussed. Here is the explanation.

1. Each header is typed on a new page in capital letters, in bold, with a



- center position, and not underlined.
2. The headings in question are as follows:
    - a. ATTESTATION SHEET
    - b. ABSTRACT
    - c. ABSTRACT
    - d. FOREWORD
    - e. TABLE OF CONTENTS
    - f. TABLE
    - g. LIST OF IMAGES
    - h. GLOSSARY
    - i. LIST OF NOTATIONS
    - j. ATTACHMENT LIST
    - k. CHAPTER I INTRODUCTION
    - l. CHAPTER II LITERATURE REVIEW
    - m. CHAPTER III RESEARCH METHODS
    - n. CHAPTER IV RESULTS AND DISCUSSION
    - o. CHAPTER V CONCLUSIONS AND SUGGESTIONS
    - p. BIBLIOGRAPHY
    - q. ATTACHMENT

### **3.5. Abstract**

Abstract is a sari of writing whose position is very important. In the thesis, abstract writing is written in Indonesian and English.

#### **a. Abstract Typing**

1. The word "ABSTRACT" is written with a font size of 12 pt, bold, and center.
2. The distance between the word "ABSTRACT" and the first text of the abstract is **four** spaces.
3. The content of the abstract is written with a font size of 11 pt and the space between lines in the abstract is **one** space.
4. There is no paragraph indent in abstract writing. Paragraphs are aligned left-right/justify.
5. Abstracts are made in one page consisting of one to three paragraphs. If it cannot be avoided, in the abstract it is allowed to contain physical symbols / symbols or chemical formulas but must not find mathematical equations.
6. After the abstract is made, the author lists keywords a maximum of 5 words. The distance between the last sentence and the keyword is 1 space. The word "Keyword" is bolded and the font size is 11 pt while the words in the keyword are not bold and between words separated by semicolons (;).

#### **b. Abstract typing**

Basically, the abstract page is made the same as the abstrak page as in point

(a) above, but the title of the ABSTRACT and all text are typed in italics or italic and use English especially in past tense and follow the rules of good and correct writing.

### **c. Length and content of abstract and abstract**

The abstract is kept short and clear by a maximum of one page both the Indonesian version and the English version. Abstracts and abstracts of research must contain the following sections:

1. Research background briefly.
2. Purpose.
3. Research methods.
4. Results and conclusions of the study.
5. Discussion.

### **3.6. Numbering of Chapters, Subchapters, Subchapters and Equations**

1. Chapter numbering in chapter pointers (CHAPTER I, Chapter II, etc.) uses capital Roman numerals, typing is placed in the center or arranged to be symmetrical, and is bolded and does not end with a period.
2. Subchapter numbering uses Arabic numerals, typed in the left margin and bolded with no dots. All words are capitalized except prepositions and conjunctions. If the title of the subchapter is more than one line, it is written one space.
3. Subchapter/chapter child numbering is adjusted to the chapter number. Subchapter headings are typed in bold with only the first word beginning with a capital letter.
6. The numbering of equations is sequential according to the chapter number and is followed by the sequence of the mathematical equations. The equation number is typed in parentheses and placed near the border of the right edge. Suppose there is a 5th equation in chapter II then the equation number is written (2.5).

### **3.7. Page numbering**

The numbering procedure in question is numbering for the page of the beginning, core, and end. Here is the explanation.

#### **a. Initial Page**

1. Page numbering uses small Roman numerals ranging from the inner cover page to the page before chapter 1.
2. The inner cover pages and endorsement pages are not numbered sequentially, but count as pages i and ii (they are not typed page numbers).
3. The abstract pages up to the appendix list pages are numbered with small roman numerals, which are a continuation of the inner cover page and the endorsement page.
4. On each page headed, from abstract to the list of appendices, the page

number is placed in the middle lane at the bottom symmetrically.

### **b. Core Section Page**

The numbering of the core part of the thesis is determined as below.

1. Numbering the core part of the thesis, starting from Chapter I INTRODUCTION to Chapter V CONCLUSIONS AND SUGGESTIONS, using Arabic numerals.
2. For pages containing chapter titles and pointing numbers, page numbers are written at the bottom in a centered/symmetrical position, while numbers for subsequent pages are written at the top right.

### **c. End Page**

Numbering at the end of the thesis is done as follows:

1. Numbering the final part of the thesis, starting from the BIBLIOGRAPHY to the CURRICULUM VITAE uses Arabic numerals.
2. On each page titled, from BIBLIOGRAPHY to CURRICULUM VITAE, page numbers are placed in the middle column at the bottom with a center / symmetrical position.

## **3.8. Settings of Thesis cover page inside and out**

The sections that must be on the outer cover page refer to Chapter I Subchapter 1.1-part A of this manual, while the paper material for the outer cover page is in accordance with the provisions of Chapter II subsection 2.1. Writing and placement of thesis title, subtitles (if any), thesis writing, student name and NPM, UNPAD symbol, university name, faculty, study program, city and year of thesis preparation, on the outer cover and inner cover, follow the following provisions:

### **a. Title and Subtitles**

The writing of titles and subtitles (if any) is regulated as follows:

1. The title and subtitles (if any) are written in good and correct Indonesian and can describe the complete contents of the thesis. The title must be informative, short, and clear and not multi-interpretive and not exceed 16 words.
2. The title of the thesis is written on the top line, with all capital letters, with a distance from the top edge of the paper of at least 6 cm and made center / symmetrical with the left and right edges of typing.
3. The typeface used is Times New Roman with a font size of 12 pt.
4. Long titles are written into two or more lines, with logical cutting of the title, in accordance with the rules and procedures of Indonesian. The distance between the two lines in the title is 1 space.
5. The subtitles (if any) are written below the title, with all capital letters

with a size of 11 pt and spaced from the title about one and a half spaces.

6. Long subtitles are written into two or more lines, with logical cutting of the title, in accordance with Indonesian rules. The distance between the two lines is 1 space.
7. Neither titles nor child headings end with a period (.).

### **b. Writing the Word "THESIS" and Thesis Information**

1. The writing of the word "THESIS" is written in all capital letters and bold, placed in the middle, with the type and size of the letters is 12 pt.
2. The location of the words "THESIS" is about two and a half cm below the title or subtitles (if any). If there is no subtitle, the location of the THESIS writing is about 5 cm from the lowest title border.
3. Under the writing "THESIS", with a distance of about 1 cm, a sentence of explanation / thesis information with a distance between lines of space 1 is listed as follows:

Example: Information in the thesis

Submitted to take the Undergraduate Examination  
at the Faculty of Mathematics and Natural Sciences Universitas  
Padjadjaran

The first letter of each word 'Proposed', 'Undergraduate Examination', 'Faculty' and faculty name, and 'Padjadjaran University' is typed in capital letters, others are written in lowercase, the font size used is 11 pt and does not end with a period.

### **c. Student Name and NPM**

For writing names and NPM, it is done through the following steps.

1. Student names and NPM are written in all capital letters and bold, placed in the middle, with a font size of 12 pt. NPM is written just below the name.
2. The location of the student's name writing is about 2.5 cm below the writing of Padjadjaran University in point 2.7.b(3) regarding the thesis information above.
3. The space between the name and NPM is set to 1 space.
4. The writing of the name should not be abbreviated and should correspond to the name to be written in the diploma.

### **d. UNPAD symbol**

The UNPAD symbol has a diameter of about 3.5 cm. The midpoint is located approximately halfway between the Student NPM and the University name line (Universitas Padjadjaran). Unpad official logo can be downloaded through the

following page:

<https://www.unpad.ac.id/universitas/identitas/logo-unpad/>

#### **e. Name of University, Faculty, Study Program, City, and Year of Preparation**

1. The writing of Padjadjaran University, Faculty of Mathematics and Natural Sciences, Physics Study Program, city, and year of thesis preparation is written in all capital letters, in bold, with the font size is 12 pt.
2. The distance between the rows is 1 space.
3. The year of preparation of the thesis written at the bottom, placed about three and a half cm from the bottom edge of the paper.
4. The hierarchy of writing is universities, faculties, study programs, and cities.

Example: Hierarchy of writing institutions, cities, and years.

UNIVERSITAS PADJADJARAN  
FACULTY OF MATHEMATICS AND NATURAL SCIENCES  
BACHELOR PHYSICS STUDY PROGRAM  
JATINANGOR 2023

The placement of writing on the outer cover page must pay attention to symmetry with the balance of the distance of the top, bottom, left, and right margins. In certain circumstances that cannot refer to the above arrangement, the lay-out of the outer cover page refers to the title line (item 2.7.a) taking into account its balance.

#### **f. Inner Cover Page Settings**

The inner cover page writing arrangement refers to the outer cover page writing as described above.

### **3.9. Approval Sheet Page**

The approval sheet page refers to the following:

1. The words "ENDORSEMENT SHEET" are written centered, bolded, and symmetrical with the left and right margins.
2. The title of the thesis is typed at a distance of four cm from the edge of the top paper, all title sentences are typed in capital letters, with the distance between the lines is 1 space.
3. The subtitle line (if any) is typed below the title, at a distance of about one cm from the last line of the title, all typed in capital letters.
4. The student's name is typed below the subheading, at a distance of about one cm from the last line of the subheading. All are typed in capital letters.



5. NPM is typed under the student's name.
6. The font size used is 12 pt.
7. The time of approval is only written in the month and year, typed behind 'Jatinangor'.
8. The lay-outs of "Approve", "Lead Advisor", and "Co-Advisor" are set with respect to balance/symmetry on the page. The name of the supervisor is four cm away from the edge of the bottom paper.
9. The lay-out "Knowing" the Head of the S-1 Physics Study Program, Faculty of Mathematics and Natural Sciences, Padjadjaran University is made after the lay-out approval of the supervisor.
10. The distance between the name of the supervisor and his NIP and the distance between the name of the head of the study program and his NIP is 1 space.

### **3.10. Library Citations**

In general, how to refer to writing scientific papers or scientific articles can be divided into three, namely referencing using footnotes, referencing using endnotes, and referencing using parentheses. In the S-1 Physics Study Program FMIPA UNPAD, library citation references are used in the HARVARD style with Mendeley software or similar. Referencing with a Harvard style is a reference made using the last name and year listed between the regular parentheses.

1. Scientific papers written by a single author.
  - Adiperdana (2021) stated.....
  - According to Adiperdana (2021) that.....
  - Temperature is directly proportional to the increase in resistivity R if..... (Adiperdana, 2021).
2. Scientific papers written by more than 3 people use the last name (family name) of the first author only followed by et al. or et al. Students must choose one (not both) et al. or et al. consistently.
  - Adiperdana et al. (2021) stated that.....
  - Adiperdana et al. (2021) stated that.....
3. If the article is written by two authors, citation is done by mentioning the last name / family name of the two authors.
  - Adiperdana and Faizal (2021) stated that.....
  - Temperature is directly proportional to the increase in resistivity R if... (Adiperdana and Faizal, 2021).
4. If the author's name is not mentioned, the citation is the name of the publishing institution, the name of the published document, the name of the website/website or the name of the newspaper.  
For translation works, citations are carried out by mentioning the name of the original author. Citations from two or more sources written by different authors are listed in one regular parenthesis with a semicolon as the separator.

5. Citations are not from the original source.

- Adiperdana and Faizal (2021), Aprilia stated that, if there is.....

6. If the citation mentions more than 2 libraries, then the writing is made in parentheses () and separated by semicolons (;).

- Several further studies have investigated these phenomena over the past few decades (Singh, 2011; Davidson, 2015; Harding, 2018).

7. If the citation comes from a literary work whose author and time are the same, then the citation method can be given the letters 'a' and 'b' as a differentiator.

- The results of the first study (Adiperdana, 2018a) are inconclusive, but subsequent studies (Adiperdana, 2018b) are very clear.

8. Especially for book citations, the page number must be listed. For single pages 'p' is used and for more than one page 'pp' is used.

- The minimal builder in a vector space is equivalent to the base of the vector space (Adiperdana, 2019, p. 5).
- The concept of minimal or linearly free builder is maximally equivalent to the base of a vector space (Adiperdana, 2019, pp. 5 – 10).

### **3.11. Bibliography Writing**

A citation list (bibliography) is a list containing books, papers, articles or other materials cited either directly or indirectly. The number of library sources used is at least 20 libraries. The number of articles from reputable international journals or SINTA accredited journals is at least 60% within the last 5 years from the time of the research being carried out and the remaining 40% can use other sources such as books. Materials that are read but not cited are not included in the bibliography, while all materials cited directly or indirectly in the text must be included in the reference list. Basically, elements written in the reference list successively include:

1. The author's name is written in order: last name/family name, abbreviation of first name, and middle name, without academic degree,
2. year of issue,
3. title, including subheadings,
4. place/city of publication, and
5. publisher name.

These elements may vary depending on the type of library source. If there is more than one author, the way it is written is the same as the first author. The author's two-part name is written in order: last name followed by comma, first name, and middle (abbreviated), ending with a period. If the referenced source was written by a team, all authors' names should be listed in the reference list. The year of publication is written in parentheses ending with a period.

1. The author's name consists of two or more syllables. The writing is the last name first / family name followed by a comma and followed by abbreviations of other names.

Example:

- Ahmad Firdus written: Firdaus, A.
- Ahmad B. Faizal written: Faizal, A.B.

2. A name that contains an abbreviation. The writing is that the last name was first followed by an abbreviation and written as a unified name.

Example:

- Ahmad Y.I. written: Ahmad, Y.I.
- Ahmad Y. Paradise is written: Firdaus, A.Y.

### **3.11.1 Library in book form**

In this sub-subchapter, we will describe how to make a bibliography of books, both chapter books, translated books, and edited books.

#### A. Books

The order in which they are written is author, year, book title, volume (if applicable), edition (if applicable), publisher city, and publisher name. The year of publication is written in parentheses after the author's name, not ending with a period. The title of the book is written in italics, with uppercase letters at the beginning of the first word only, after that only proper nouns are capitalized first letters. The place of publication and the name of the publisher are separated by a colon (:). The writing template is as follows:

Example:

1. Dekker, N. (1992) *Pancasila as the nation's ideology: from the only choice to the only principle*. Malang: FPIPS IKIP Malang.
2. Lee, P.Y. and Vyborny, R. (2000) *The Integral: An easy approach after Kurzweil and Henstock*. Cambridge: Cambridge University Press.
3. Mitchell, J.A. and Thomson, M. (2017) *A guide to citation*. London: London Publishings.
4. Strunk Jr., W. and White, E.B. (1979) *The elements of style*. New York: Macmillan.

#### B. Translated Book / Edited or Translated Book

Citation of a book that contains a collection of articles that have an editor. In this case there are translated books and edited books. Writing a bibliography of a translated book can be done by following the following template:

Example:

Nádas, P. (1998) A book of memories. Translated from the Hungarian by I. Sanders and I. Goldstein. London: Vintage.

#### C. Chapter Book / Chapter Book

The name of the author of the article is written in front followed by the year of publication. The title of the article/chapter is written upright (not italicized) and given quotation marks. The editor's name is written starting with the last name/family name then initials and annotated (ed.) if only one editor, and (eds.) if more than one editor. The title of the collection book is written in italics, and the page numbers are given in parentheses. The writing template is as follows:

Example:

Greenblatt, S. (2010) 'The traces of Shakespeare's life', in De Grazia, M. and Wells, S. (eds.) *The new Cambridge companion to Shakespeare*. Cambridge: Cambridge University Press, pp. 1–14.

#### D. Book Edition/Volume/Edition or Volume of a Book

If the cited book is in the form of a second or third edition book and so on, then in making a bibliography must include the edition of the book used. The template used is as follows:

Author surname, initial. (Year) Book title. Edition edn. City: Publisher.

Example:

Pears, R. and Shields, G. (2019) *Cite them right: The essential referencing guide*. 11th edn. London: MacMillan.

#### E. Electronic Book / E-book

How to create a bibliography from an e-book can be done by adding the pages accessed and the date of accessing it.

Example:

Mitchell, J.A., Thomson, M. and Coyne, R.P. (2017) *A guide to citation*. E-book library [online]. Available at: <https://www.mendeley.com/reference-management/reference-manager> (Accessed :10 September 2016)

#### F. Dictionaries and Encyclopedias

Dictionaries and encyclopedias are indispensable library resources. Dictionaries or encyclopedias that have authors, then the writing follows the way of writing books as above, while if the dictionaries and encyclopedias do not contain authors, then the way of writing can follow the following template:

Example:

Collins English dictionary (2019) 8th edn. Glasgow: Collins.

### **3.11.2 Bibliography in the form of articles/papers**

The author's name is written at the front followed by the year and title of the article. The writing of the article title must be upright print should not be italicized and the first letter must be uppercase only for the first word, except for proper nouns at the beginning of each word the letter must be uppercase. The title of the article is single-quoted. Journal names are written in italics, and the initial letters of each word are capitalized except conjunctions and prepositions. The end of each section is written the year of the journal, the volume and number issued (in parentheses), and the page number of the article.

#### A. Articles from Print Journals

The writing template can be explained as follows:

Example:

1. Gray, L. (2018) 'Recent advances and challenges in biomass-derived porous carbon nanomaterials for supercapacitors', *Chemical Engineering Journal*, 34(2), pp. 175 – 194.
2. Maceachen, D. B. (1950) '12 years roadmap of the sulfur cathode for lithium sulfur batteries', *Energy Storage Materials*, 5(2), pp. 121–139.

#### B. Articles from Online Journals with DOIs

The writing template can be explained as follows:

Example:

Adamson, P. (2019) 'Roadmap of the sulfur cathode for lithium sulfur batteries', *Storage Materials*, 31(2), pp. 32–59.  
doi:10.2979/storage.31.2.02.

#### C. Articles from Online Journals Without DOI

The writing template can be explained as follows:

Example:

Theroux, A. (1990) 'Henry James's Boston', *The Iowa Review*, 20(2), pp. 158–165. Available at: <https://www.jstor.org/stable/20153016> (Accessed: February 13, 2020).

#### D. Articles from Preprint Journals

The writing template can be explained as follows:

Example:

Jeon, I., Lee, K. and Park, J.-H. (2018) 'Ramond-Ramond cohomology and O(D, D) T-duality'. For publication in the *Journal of High Energy Physics* [Preprint]. Available at: <http://arxiv.org/abs/1206.3478>

(Accessed: May 14, 2020).

### **3.11.3 Library from the Website/Page**

Citations to the source of the page are divided into 3 parts, namely: general pages, blogs, and social media. Likewise with making a bibliography.

#### A. Website/General Website

To create a bibliography from sources taken from general pages, the following templates can be used:

Last name/family name, initials. (Year) Page Title. Available at: URL (Accessed: Day Month Year).

Example:

Google (2020) Google terms of service. Available at: <https://policies.google.com/terms?hl=en-US> (Accessed: May 11, 2023).

#### B. Blog or Online Magazines/Newspapers/Magazines

For libraries sourced from blogs, writing a bibliography can follow the following template:

Author surname, initial. (Year) 'Article title', Blog Name, Day Month. Available at: URL (Accessed: Day Month Year).

Example:

Rakich, N. (2020) 'sulfur cathode for lithium sulfur batteries', Energy Storage, April 28. Available in: [https://fivethirtyeight.com/features/sulfur\\_cathode\\_for\\_lithium\\_sulfur\\_batteries/](https://fivethirtyeight.com/features/sulfur_cathode_for_lithium_sulfur_batteries/) (Accessed: April 29, 2020).

### **3.11.4 References in the form of theses, theses, or dissertations**

The name of the author is written at the front, followed by the year listed on the cover, the title of the thesis, thesis or dissertation is written with an underscore followed by a statement of thesis, thesis, or unpublished dissertation, Name of the city where the college is, and the name of the faculty and name of the college.

Example:

Nurhilal, O (2021) Hyacinth activated carbon synthesis and its application in lithium sulfur batteries. The dissertation is not published. Jatinangor: UNPAD Jatinangor Postgraduate Program.

### **3.11.5 References in the form of papers presented in seminars, upgrades, or workshops**

The author's name is written first, followed by the year. The title of the paper is written in italics, followed by the statement "The paper is presented in ...", the name of the meeting, the organizing institution, the place of the event, and the date and month.

Example:

Huda, N. (1991) Writing Research Reports for Journals. The paper was presented at the Basic Research Workshop for PTN and PTS Lecturers in Malang Batch XIV, IKIP MALANG Research Center, Malang, July 12.

### **3.12. Writing Tables and Figures**

Loading tables and figures and typing their titles are done as follows:

#### **3.12.1 Table**

1. The table loads in the middle of the page.
2. The Number and Title are typed above the table, following the width of the table taking into account page/symmetric balance.
3. The table is numbered sequentially with Arabic numerals. The table number consists of two parts, namely:
  - the first section indicates the chapter number in which the table is loaded;
  - The second section shows the sequence numbers of the table in that chapter.
  - For example, Table 2.4, shows that it is in Chapter II and is the fourth order table in that Chapter.
4. The first sentence of the table title is written after the table number, two taps apart. If the table title is more than 1 row, it should be written 1 space.
5. The beginning of the second-row table title is below the beginning of the first row table heading (not below the table number).
6. Table titles are capitalized only on the first word, subsequent words are written in lowercase except proper nouns. Table headings do not end with periods.
7. The distance between the title and the table is 1.5 spaces.
8. The writing of the word "Table", the pointing number and the title are not in bold.
9. Table writing should not be cut off in principle. If hyphenation is forced to be done, then on the next page must be restated the table number and the follow-up word without the table title.
10. Tables of 2 or more pages must be stored in the appendix.

#### **3.12.2 Images**

The definition of images here is other than tables (can be graphs, flow charts, maps, photos, work diagrams).

1. The image loads in the middle of the page.



2. The title is typed below the image, following the width of the image, taking into account the page's balance/symmetry.
3. Images are numbered sequentially with Arabic numerals. The drawing number consists of two parts, namely:
  - The first part indicates the chapter number in which the picture is loaded
  - The second part shows the sequence number of the figure in that chapter.
4. The first sentence of the image title is written after the picture number, two tabs apart. If the title of the image is more than 1 line then it should be written 1 space.
5. The beginning of the second line of the image title is below the beginning of the image title of the first line (not below the image number).
6. The words "Picture", the pointing number and the title are not in bold.
7. Images consisting of several parts must use sequence captions (a), (b), and so on with captions already contained in the title.
8. The image that is quoted from the reference must then include the source and written at the end of the image.
9. The level of resolution and sharpness of the image must be considered.

## **BIBLIOGRAPHY**

1. Unpad Rector Regulation Number 391/H6.1/Kep/PP/2011 concerning thesis writing guidelines. Bandung: Padjadjaran University.
2. Unpad Rector Regulation No. 16/2016 concerning Final Project Writing at the Undergraduate and Applied Bachelor Education Levels at Padjadjaran University

**APPENDIX 1. Cover**

CHARACTERISTICS OF ACTIVATED CARBON ASI AND STUDY OF ITS  
POTENTIAL APPLICATION FOR SUPERCAPACITOR ELECTRODE MATERIALS

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THESIS

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Submitted to take the first exam at the Bachelor of Physics Study Program  
, Faculty of Mathematics and Natural Sciences  
Padjadjaran University

YOUR NAME HERE  
140310.....



PADJADJARAN UNIVERSITY  
FACULTY OF MATHEMATICS AND NATURAL SCIENCES  
UNDERGRADUATE PHYSICS STUDY PROGRAM  
JATINANGOR  
2023

## APPENDIX 2. Approval Sheet

### APPROVAL SHEET

HEADING : CHARACTERISTICS OF ACTIVATED CARBON AND STUDY OF  
ITS POTENTIAL APPLICATION FOR SUPERCAPACITOR  
ELECTRODE MATERIALS

CONSTITUENT : YOUR NAME HERE

NPM : 140310.....

Jatinangor, ..... 2023

Know and Consent,

Lead Advisor

Co-Advisor

Name of Main Supervisor

NIP. .... ..

Supervisor's Name.

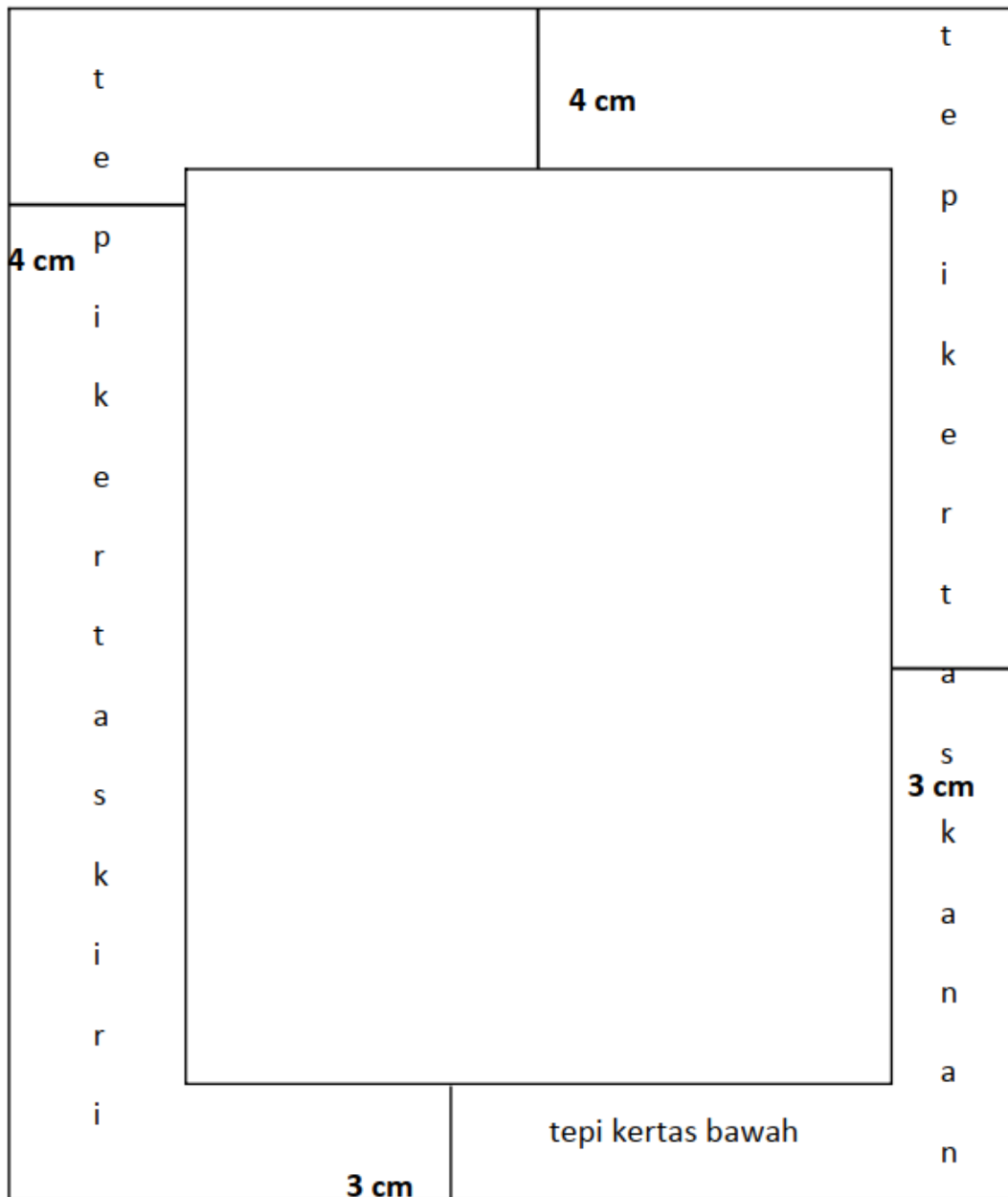
NIP. .... ..

Head of the Undergraduate Study Program in Physics  
Faculty of Mathematics and Natural Sciences  
Universitas Padjadjaran

Dr. Sahrul Hidayat, M.Si.  
NIP. 19730730 199803 1 002

**APPENDIX 3. Layout paper**

tepi kertas atas





**APPENDIX 4. Thesis Seminar Assessment Format**

Student Name :  
 NPM (Student ID) :  
 Title :  
 Period : Odd/Even Semester Academic Years: .....  
 Supervisor :  
 :

No.	Content	Criteria	Score	
A	Thesis Draft	Clarity of the disclosure of the background of the problem, identification, formulation of the problem, objectives, and research uses	15%	
		Relevance of theory to the topic and problem, validity and accuracy of sources, and appropriateness of references	15%	
		Clarity of Research Methods, Synthesis, and Analysis Instruments	15%	
		Completeness and clarity of the data description of the research results	10%	
		The writing style is systematically organized and structured with a clear and correct language and a correct and consistent writing format	10%	
B	Presentation and Discussion	Presentation skills	10%	
		Quality of answers during discussion, ability to deliver scientific arguments in answering questions	15%	
		Readiness and quality of presentation content	10%	
<b>Final Score</b>				

Note(s):

.....  
 .....  
 .....

Jatinangor, .....

Supervisor/Examiner

(.....)



**APPENDIX 5. Assessment of Thesis Defense**

**ASSESSMENT OF THESIS DEFENSE**

No.	Points of assessment	Score Supervisor/Examiner		
		I	II	III
1.	Thesis content understanding			
2.	Fundamental physics understanding related to thesis			
3.	Ability to answer questions			
4.	Mastery of factual knowledge (comprehensive related to thesis).			
5	Ability to respond to and solve problems (independence, creativity, originality, perspective, objectivity of working methods, and scientific ethics)			
Total score of the supervisor/examiner				
Final score				

Note(s):

.....  
.....  
.....

Jatinangor, .....  
Supervisor/Examiner

(.....)