



DEPARTMENT OF NATIONAL EDUCATION
THE UNIVERSITY OF MATARAM
FACULTY OF ENGINEERING

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**DECREE
OF THE DEAN OF THE FACULTY OF ENGINEERING
THE UNIVERSITY OF MATARAM
NUMBER:/H.18.6/HK/2022**

Pertaining

**GUIDELINE FOR THE IMPLEMENTATION OF THE FINAL PROJECT
FACULTY OF ENGINEERING, THE UNIVERSITY OF MATARAM**

DEAN OF THE FACULTY OF ENGINEERING, THE UNIVERSITY OF MATARAM

- Considering :
- a. that the writing of the final project for students of the Faculty of Engineering is a part of the national curriculum and shall be taken by the students.
 - b. that to provide clear directions and train students to write their final project on solving problems using science and technology they have acquired while studying, it is deemed necessary to stipulate a guideline for the final project of the Faculty of Engineering, the University of Mataram;
 - c. that the current writing guidelines are deemed necessary to be reviewed.
 - d. that regarding some points mentioned previously, it is necessary to issue a decree regarding guidelines for the implementation of the final project of the Faculty of Engineering, the University of Mataram;
- Observing :
1. Law No. 20 of 2003, concerning the National Education System;
 2. PP. No. 60 of 1999, concerning Higher Education;
 3. Decree of the Minister of National Education of the Republic of Indonesia:
 - a. Number: 088/O/2003 concerning the Statutes of the University of Mataram;
 - b. Number: 0375/O/1993 concerning the Establishment of the Faculty of Engineering, the University of Mataram;
 - c. Number: 0181/O/1995, concerning the Organization and Working Procedures of the University of Mataram;
 4. The Decree of the Rector of the University of Mataram:
 - a. Number: 5105/J18.H/HK.01.12/2002 concerning Delegation of Authority to Deans of Faculties within the University of Mataram to make and sign Decrees;
 - b. Decree of the Rector of the University of Mataram No. 11.437/H18/HK/2007 concerning Academic Rules and Guidelines for Implementing the Semester Credit System at the University of Mataram.
 - c. Number: 5070/H18/KP/2009 concerning the Appointment of the Dean of the Faculty of Engineering, University of Mataram for the 2009-2013 period;
 5. Decree of the Dean of the Faculty of Engineering, the University of Mataram No. 166/J18.1.31/HK/2004 concerning Guidelines for the Implementation of the Final Project of the Faculty of Engineering, the University of Mataram 2004
 6. Guidelines for Education at the Faculty of Engineering, the University of Mataram, 2008/2009.
- Noting : The results of the Senate Meeting of the Faculty of Engineering, the University of Mataram on 28 January 2022.

STIPULATING

- To enact
First : Decree of the Dean of the Faculty of Engineering, the University of Mataram, concerning Guidelines for the Implementation of the Final Project of the Faculty of Engineering, the University of Mataram, 2022.
- Second : This decree takes effect from the Even Semester of the Academic Year 2021/2022, with the provision that if later it turns out that there is a mistake found in this provision, corrections will be made accordingly.

CHAPTER I. GENERAL PROVISIONS

ARTICLE 1

In this regulation what is meant by:

1. University is the University of Mataram.
2. Faculty is the Faculty of Engineering, the University of Mataram.
3. Department/study program is the departments/study programs within the Faculty of Engineering, the University of Mataram.
4. Rector is the Rector of the University of Mataram.
5. Dean is the Dean of the Faculty of Engineering, the University of Mataram.
6. Head of the department/study programs is the head of the department/study programs within the Faculty of Engineering, University of Mataram.
7. Lecturers are teaching staff at the Faculty of Engineering, the University of Mataram.
8. Students are the students of the Faculty of Engineering, the University of Mataram.
9. Final Project is the Thesis at the Faculty of Engineering, the University of Mataram.

CHAPTER II. CONTENT

ARTICLE 2

DEFINITION OF FINAL PROJECT

The final project is a scientific paper written by students independently under the supervision of a supervisor with a topic that is suitable for their field.

ARTICLE 3

OBJECTIVES OF FINAL PROJECT

The objectives of the final project are to train students to apply the knowledge and technology they have acquired in their study and then write it into a scientific paper.

ARTICLE 4

FORM OF FINAL PROJECT

1. Research is a systematic, controlled, empirical, and critical investigation to uncover a particular phenomenon or a correlation between phenomena to increase, modify, and develop verifiable knowledge.
2. A study can be in the form of:
 - a. A literature study—a process of searching for and discussing a theory, method, or model that has been published to obtain a conclusion that can be used as a reference for conducting further research.
 - b. A comparative study—a study conducted by comparing several similar and existing theories, methods, and models to find the best theory, method, and model.

- c. A feasibility study—a research study and discussion or comparison of several theories, methods, and models that are similar and already exist and are the most appropriate for a particular case..
 - d. Applied study – a study conducted to create and/or perfect a system or model that can be applied and useful for society (appropriate technology) based on applicable theory.
3. Designing/Developing (tools, buildings, software) can be in the form of:
- a. Designing – a process of designing or planning systems, sub-systems, models, and prototypes based on theoretical reviews.
 - b. Developing Software – Developing systems, sub-systems, models, tools, software, and prototypes and testing them.

CHAPTER III. PROCEDURE

A. GENERAL

ARTICLE 5

FINAL PROJECT REQUIREMENTS

The final project can be carried out by a student who has met the following requirements:

- a. A student who has completed a minimum of 115 credits from the total number of credits with no E grade and has a minimum GPA of 2.00.
- b. A student who has completed practicum/major assignments validated by a proof of completion.
- c. A student who has completed fieldwork practice validated by a proof of completion.

ARTICLE 6

FINAL PROJECT TOPICS

- 1. The topic of the final project is submitted by the student to the coordinator of the area of expertise and/or the head of the department/study program.
- 2. Changes to the topic of the final project must be approved by the head of the department/study program and the supervisors.

ARTICLE 7

FINAL PROJECT SERIES

The series of the final project is a proposal seminar, a result seminar (optional; if there is a result seminar, the conditions follow Article 11), and the final project defense.

ARTICLE 8

WEIGHT OF THE CREDITS AND TIME LIMIT

- 1. The number of credits of the final project is in accordance with the study program curriculum.
- 2. The time limit for the final project is six months, starting from the date of issuance of the assignment letter. Extension of time is only permitted once with the approval of the head of the department or study program and at the discretion of the supervisors.
- 3. If the student has not completed writing the final project after the extension, the supervisors can recommend the student to the faculty through the department or study program to continue or change his or her final project title and supervisors.

ARTICLE 9

FINAL PROJECT SUPERVISOR

- 1. In completing the final project, a student is advised by a minimum of two supervisors who are experts in the field chosen by the student based on the advice of the coordinator of the expertise and approved by the Head of the Department/Study Program.

2. A final project supervisor is a lecturer or expert assigned by the dean to guide students in completing their final project.
3. Criteria for being a supervisor:
 - a. Earned a minimum master's degree.
 - b. Had once been a co-supervisor.
4. A lecturer can be a supervisor for a maximum of 8 students and a co-supervisor for a maximum of 8 other students in one semester.
5. If the supervisor is permanently absent, the department or study program appoints a substitute supervisor.
6. If deemed necessary, the co-supervisor can be chosen from other departments/study programs, and/or other agencies, following the regulations applied by the respective departments/study programs.

ARTICLE 10

FINAL PROJECT PROPOSAL SEMINAR

The final project proposal seminar is held to evaluate the proposed final project topic so that it can be conducted as expected.

1. A student can give a final project proposal seminar if:
 - a. His/her final project proposal has been approved by the supervisors to be presented in a seminar.
 - b. The seminar had been scheduled by the secretary of the department/study program (or a representative official).
 - c. The seminar can be attended by students.
2. The final project proposal seminar is held for a maximum of 90 minutes and can be conducted offline, online, or mixed.
3. The final project proposal seminar board of examiners:
 - a. The board of examiners is assigned by the dean on the recommendation of the head of the department/study program.
 - b. The composition of the board of examiners is as follows:
 - 1) The chairman, who is also a member as well as a moderator, is the head of the board of examiners appointed by the department/study program.
 - 2) The members are 2 (two) or 3 (three) examiners who are experts in the suitable field of science.
 - 3) If the board of the examiners (committee) is unable to attend the seminar, the department/study program may appoint a substitute board of examiners.
4. The assessment of the final project proposal seminar is decided by the board of examiners. The assessment procedure is regulated in Article 13.
5. The final project proposal seminar is attended by at least one supervisor and two examiners.

ARTICLE 11

FINAL PROJECT RESULT SEMINAR (OPTIONAL)

1. The final project result seminar is held to evaluate the results of the final project. It is carried out to explain the final project that has been conducted.
2. A student can give the final project results seminar if:
 - a. The student has completed his/her final project, which has been approved by the supervisors to be presented in the seminar.
 - b. The student had written a seminar paper approved by the supervisors.
 - c. The head of the department/study program had approved the seminar to be held.
 - d. The seminar can be attended by students.
3. The final project result seminar is held for a maximum of 90 minutes and can be conducted offline, online, or mixed.
4. The final project result seminar board of examiners:
 - a. The board of examiners is assigned by the dean on the recommendation of the head of the department/study program.
 - b. The composition of the board of examiners is as follows:
 - 1) The chairman, who is also a member as well as a moderator, is the head of the board of examiners appointed by the department/study program.

- 2) The members are 2 (two) or 3 (three) examiners who are experts in the suitable field of science.
- 3) If the board of examiners (committee) is unable to attend the seminar, the department/study program may appoint a substitute board of examiners.
5. The assessment of the final project result seminar is decided by the board of examiners. The assessment procedure is regulated in Article 13.
6. The final project proposal seminar is attended by at least one supervisor and two examiners.

ARTICLE 12

FINAL PROJECT DEFENSE

1. The final project defense is an evaluation to determine a student's ability regarding the final project he/she had been conducted.
2. The final project defense can be carried out by a student if:
 - a. The maximum similarity of the final project is 30%, as evidenced by the results of Turnitin checking (without excluding other people's work in checking).
 - b. The student has met the administrative requirements determined by the department/study program.
 - c. The student has passed the final project result seminar (optional)
 - d. The final project has been approved by the supervisors.
 - e. The student had submitted the logbook of the implementation of the final project (the format is shown in Appendix L).
 - f. The student had taken the TOEFL test and received a certificate with a minimum score of 400.
3. The final project defense is held for a maximum of 120 minutes and can be conducted offline, online or mixed.
4. The final project defense board of examiners:
 - a. The board of examiners is assigned by the dean on the recommendation of the head of the department/study program.
 - b. The composition of the board of examiners is as follows:
 - 1) The chairman, who is also a member as well as a moderator, is the head of the board of examiners appointed by the department/sudy program.
 - 2) The members are 2 (two) or 3 (three) examiners who are experts in the suitable field of science.
 - 3) If the board of examiners (committee) is unable to attend the seminar, the department/study program may appoint a substitute board of examiners.
5. The score of the final project defense consists of the scores given by the supervisors and the score given by the board of examiners. The assessment procedure is regulated in Article 13.
6. If a student is declared not to have passed the final project defense, he/she is required to have a re-defense for a maximum of 1 (one) time.
7. The final project defense is attended by at least one supervisor and two examiners.

ARTICLE 13

FEASIBILITY DETERMINATION/ASSESSMENT

1. The components of the assessment of the final project proposal and result seminars consist of 25% content, 25% comprehension, 25% presentation, and 25% scientific writing systematics.
2. The components of the assessment of the final project defense are determined as follows:
 - a. The assessment is carried out by the board of examiners and supervisors in which:
 - 1) The assessment by the supervisors during the writing of the final project weighs 50%.
 - 2) The assessment by the board of examiners during the final project defense weighs 50%.
 - b. The components of the assessment by the supervisors are:
 - 1) Writing process = 30%
 - 2) Content = 30%
 - 3) Scientific Writing Systematics = 40%
 - c. Komponen penilaian oleh penguji:
 - 1) Comprehension = 40%
 - 2) Presentation = 30%

3) Scientific Writing Systematics = 30%

- d. The scores given by the supervisors and board of examiners can be different, but the difference should be less than 20. If it is more than 20, it should be adjusted to ± 20 , which is derived from the average score given by the majority of the examiners.
 - e. If the average score given by the board of examiners and the supervisors is greater than 15, the score should be adjusted to ± 15 , derived from the score given by the board of examiners.
 - f. The defense result is announced by the chairman of the board of examiners soon after the final score has been counted.
3. The explanation of the components of the assessment above is as follows:
- a. The writing process is related to the frequency of consultations and the students' contributions (ideas, initiatives) to the completion of the final project.
 - b. Content is related to the depth or weight of the contents of the final project.
 - c. Comprehension is related to student mastery of the final project content, which is identified through questions and answers or discussion during the final project defense to test or clarify what the students did in the final project.
 - d. Presentation is related to how the final project is delivered or presented in terms of the language used, delivery method, communication skills, and other presentation skills.
 - e. Scientific Writing Systematics is concerned with the clarity of content, format, and writing systematics that are precise and correct in accordance with the writing systematics for the Final Project Guidelines that apply at the Faculty of Engineering, the University of Mataram.
4. A student is declared to have passed the final project defense if she/he gets a grade of (NA) ≥ 56 , and is declared to have not passed if she/he gets a grade of (NA) < 56 , with a range of NA from 0 to 100. The final score is a grade in the form of letters converted from a score, as in the following:
- a. A, if : $NA \geq 80$
 - b. B+, if : $72 \leq NA < 80$
 - c. B, if : $65 \leq NA < 72$
 - d. C+, if : $60 \leq NA < 65$
 - e. C, if : $56 \leq NA < 60$

B. FINAL PROJECT PROPOSAL

ARTICLE 14

OPENING PART OF FINAL PROJECT PROPOSAL

1. Front Cover
The cover page contains the words FINAL PROJECT PROPOSAL at the very top and contains: title, logo of the University of Mataram, name and student number, name of department/study program, faculty, and the year the final project proposal is written (see Appendix A).
2. Title Page
The title page contains the same words as that on the front cover.
3. Approval Page
This page contains the approval from the supervisors, complete with signature and date of approval (see Appendix B).

ARTICLE 15

MAIN PART OF FINAL PROJECT PROPOSAL

1. Research
The framework for the final project proposal in the form of research is:
 - a. Chapter I Introduction. It consists of:
 - 1) Background: It contains an overview of the topic, the important reasons for raising the topic, and the situation of the problem to be discussed.

- 2) Statement of the Problems: It contains descriptions of interesting problems to be researched in order to get solutions.
 - 3) Problem limitation: It contains the scope of the problem to be raised or solved and the assumptions taken (if needed).
 - 4) Objectives of the study: It contains a detailed description of the objectives to be achieved in the research.
 - 5) Benefits: It explains the use of the results of the research.
 - 6) Hypotheses: Assumptions about the expected results which are stated briefly and clearly (if needed).
- b. Chapter II Literature Review and Background of the Theory.
 - 1) Literature Review: This section contains opinions or conclusions and suggestions taken from previous research. The literature review is presented systematically, and relates to the problem to be studied. Personal opinion is not included.
 - 2) Background of the Theory: This section contains the theoretical background outlined by the author and is a guide to solving the problems encountered. This section can be a mathematical model and its elaboration.
 - c. Chapter III Research Methods
This section contains a research implementation plan in the form of a research flowchart, tools, materials, research area, research course, and expected results in the research.
2. Study
- The framework of the final project proposal in the form of a study is:
- a. Chapter I Introduction. It consists of:
 - 1) Background: It contains an overview of the topic, the important reasons for raising the topic, and the situation of the problem to be discussed.
 - 2) Problems: It contains descriptions of interesting problems to be researched in order to get solutions.
 - 3) Problem limitation: It contains the scope of the problem to be raised or solved and the assumptions taken (if needed).
 - 4) Objectives of the study: It contains a detailed description of the objectives to be achieved in the study.
 - 5) Benefits: It describes the use of the results of the study.
 - b. Chapter II Literature Review and Background of the Theory
 - 1) This section contains opinions or conclusions as well as suggestions from previous studies. It is presented systematically and is related to the problem being studied. The author's personal opinion is not included.
 - 2) Background of the Theory: This section contains the theoretical background outlined by the author and is a guide to solving the problems encountered. This section can be a mathematical model and its elaboration.
 - c. Chapter III Methods of Study
This section contains an implementation plan in the form of a study flowchart, tools, materials, research course, and expected results.
3. Framework of Designing/Developing (tools, buildings, software)
- The framework of the final project proposal in the form of design/making (tools, buildings, software) is:
- a. Chapter I Introduction. It consists of:
 - 1) Background: It contains an overview of the topic, the important reasons for raising the topic, and the situation of the problem to be discussed.
 - 2) Problems: It contains descriptions of interesting problems for which solutions need to be planned.
 - 3) Problem limitation: It contains the scope of the problem to be raised or solved and the assumptions taken (if needed).
 - 4) Objectives: It contains a detailed description of the objectives to be achieved in designing, planning, and making software.

- 5) Benefits: It describes the use of planning/designing/making software.
- b. Chapter II Literature Review and Background of the Theory
 - 1) Literature Review: This section contains opinions or conclusions as well as suggestions from previous designs/developments (tools, buildings, software). It is presented systematically and related to the design/making (tools, buildings, software). The author's personal opinion is not include.
 - 2) Background of the Theory: This section contains the theoretical background outlined by the author and is a guide to solving the problems encountered. This section can be a mathematical model and its elaboration.
- c. Chapter III Design/making Methods
This section contains an implementation plan in the form of design flowcharts, tools, materials, the implementation of planning/design, and the expected results.

ARTICLE 16

CLOSING PART OF THE FINAL PROJECT

The final part of the final project proposal includes an implementation schedule, a bibliography, and appendices.

C. FINAL PROJECT

ARTICLE 17

OPENING PART OF THE FINAL PROJECT

1. Front Cover
The front cover contains the following: title, the words "FINAL PROJECT" and continued on the line below the words "*To fulfill some of the requirements to achieve a bachelor's degree*", the University of Mataram logo, student name and number, name of department or study program, Faculty of Engineering, the University of Mataram, and the year it is written (see Appendix E1).
2. Title Page
The title page contains the same words as that on the front cover.
3. Approval Page
The approval page consists of two pages, namely, the supervisors' approval page and the board of examiners approval page (see Appendices F and G). The signing can be done through the University of Mataram e-sign.
4. Statement of the Originality of the Final Project (see Appendix H)
5. Foreword
This section contains a brief description of the purpose of the final project as well as explanations of why, where, and when the final project was carried out (see Appendix I).
6. Acknowledgement
This section contains an expression of gratitude by the author to those who have supported the author in the completion of the final project (scientific contributions, financial support) (see Appendix J).
7. Table of Contents
The table of contents is intended to provide an overall picture of the contents of the final project and serve as a guide for readers who want to immediately see a desired chapter or section. The table of contents lists the order of the titles, sub-headings, and page numbers.
8. List of Tables

If there are many tables in the final project, it is necessary to provide a list of tables that contains the number and title of the tables as well as the page number where a specific table can be found.

9. List of Figures
The list of figures contains the order of the title, figure number, and page number.
10. List of Appendices
Writing the list of appendices follows the same rules as writing the list of figures and tables.
11. List of Symbols and Abbreviations
The list of symbols and abbreviations contains the meanings of symbols and abbreviations used in the writing and is accompanied by an explanation of the units (dimensions).
12. Abstract
An abstract is a brief description that contains the background, objectives, methods, results, and conclusions of the final project. The abstract is written in one paragraph, consisting of 150–250 words. Abstract is written in two languages, Indonesian and English, which are written on two different pages. The abstract also contains 3–5 key words.

ARTICLE 17

MAIN PART OF THE FINAL PROJECT

1. Research
The framework for the main part of the final project in the form of research is:
 - a. Chapter I Introduction. It consists of:
 - 1) Background: It contains an overview of the topic, the important reasons for raising the topic, and the situation of the problem to be discussed.
 - 2) Problems: It contains descriptions of interesting problems to be researched in order to get solutions.
 - 3) Problem limitation: It contains the scope of the problem to be raised or solved and the assumptions taken (if needed).
 - 4) Objectives of the study: It contains a detailed description of the objectives to be achieved in the research.
 - 5) Benefits: It describes the use of the results of the research.
 - 6) Systematics: This section describes the overall picture of the content plan of the final project.
 - 7) Place and time of research.
 - b. Chapter II Literature Review and Background of the Theory (see **Appendix K**)
 - 1) Literature Review: This section contains information from the literature, is presented systematically, and relates to the problem to be studied. The author's personal opinion is not included.
 - 2) Background of the Theory: This section contains the theoretical background outlined by the author and is a guide to solving the problems encountered. This section can be a mathematical model and its explanation.
 - c. Chapter III Research Methods
This section contains the complete research implementation, tools, materials, research areas, and methods of research.
 - d. Chapter IV Results and Discussion
 - 1) The results are preferably presented in the form of tables, figures, flowcharts, and algorithms, which are placed as close as possible to the discussion section so that it is easier for the reader to follow the description
 - 2) Discussion of the results can be in the form of theoretical explanations, qualitative, quantitative, or statistical. The results of the study should also be compared to the results of previous research
 - e. Chapter V Conclusion and Suggestion

Conclusion and suggestion are written in separate sections.

- 1) The conclusion is a short and precise statement that describes the results of the study to answer the objectives of the research and/or prove the hypotheses.
- 2) Suggestions are given based on experience and study considerations based on various facts found in the results of the study. Additionally, it can be used as a recommendation for further studies or research

2. Study

The framework for the main part of the final project in the form of a study is:

a. Chapter I Introduction. It consists of:

- 1) Background: It contains an overview of the topic, the important reasons for raising the topic, and the situation of the problem to be discussed.
- 2) Statement of the Problems: It contains descriptions of interesting problems to be researched in order to get solutions.
- 3) Problem limitation: It contains the scope of the problem to be raised or solved and the assumptions taken (if needed).
- 4) Objectives of the study: It contains a detailed description of the objectives to be achieved in the study.
- 5) Benefits of the study: It describes the use of the results of the study.
- 6) Syatematics: This section describes the overall picture of the content plan of the final project.

b. Chapter II Literature Review and Background of the Theory

- 1) Literature Review: This section contains information from the literature, is presented systematically, and relates to the problem to be studied. The author's personal opinion is not included.
- 2) Background of the Theory: This section contains the theoretical background outlined by the author and is a guide to solving the problems encountered. This section can be a mathematical model and its explanation.

c. Chapter III Study Methods

This section contains the implementation of the study, tools, materials, study area, course of the study, and expected results.

d. Chapter IV Results and Discussion

- 1) The results are preferably presented in the form of tables, figures, flowcharts, and algorithms, which are placed as close as possible to the discussion section so that it is easier for the reader to follow the description.
- 2) Discussion of the results can be in the form of theoretical explanations, qualitative, quantitative, or statistical. The results of the study should also be compared to the results of previous studies.

e. Chapter V Conslusion and Suggestion

Conclusion and suggestion are written in different sections.

- 1) The conclusion is a short and precise statement that describes the results of the study to answer the objectives of the research..
- 2) Suggestions are given based on experience and study considerations based on various facts found in the results of the study. Additionally, it can be used as a recommendation for further studies or research.

3. Designing/developing (tools, buildings, software)

The framework of the main part of the final project in the form of design/making (tools, buildings, software) is:

a. Chapter I Introduction. It consists of:

- 1) Background: It contains an overview of the topic, important reasons for raising the topic, and the situation of the problems to be discussed.
- 2) Statement of the problems: It contains descriptions of interesting problems to be researched in order to get solutions.

- 3) Problem Limitation: It contains the scope of the problem to be raised or solved and the assumptions taken (if needed).
 - 4) Objectives: It contains a detailed description of the objectives to be achieved in the design/development (tools, buildings, software).
 - 5) Benefits: It describes the use of the results of the design/development (tools, buildings, software).
 - 6) Systematic: This section describes the overall picture of the content plan of the final project.
 - 7) Place and time of design/development (tools, buildings, software).
- b. Chapter II Literature Review and Background Theory
 - 1) Literature Review: This section contains information obtained from the literature, presented systematically, and related to the design and planning of what is being conducted. The personal opinion of the researcher is not included.
 - 2) Background Theory: This section contains the theoretical background outlined by the researcher and is a guide for solving the problems encountered. This section can be a mathematical model and its elaboration.
 - c. Chapter III Design/Development Methods (tools, buildings, software)
This section contains details of the execution of design/development (tools, buildings, software).
 - d. Chapter IV Results and Discussion
 - 1) Preferably presented in block diagrams, drawings, flowcharts, and algorithms, which are put as close as possible to the discussion so that it is easier for the reader to follow the description.
 - 2) Discussion of the results is in the form of theoretical explanations, both qualitative and quantitative. The product of the design/development (tools, buildings, software) should also be compared to similar existing designs/developments (tools, buildings, software)
 - e. Chapter V Conclusion and Suggestion
Conclusion and suggestion are written in separate sections.
 - 1) The conclusion is a short and precise statement that describes the results of the design/development (tools, buildings, software) to answer the objectives of the research.
 - 2) Suggestions are given based on the author's experience and considerations based on the facts of the results of the design/development (tools, buildings, software) as a material for further research or software design/construction.

ARTICLE 18

THE LAST PART OF THE FINAL PROJECT

This section contains a bibliography and appendices that support research, studies, and design/development (tools, buildings, software). The bibliography and appendices are written according to the format determined by the Faculty of Engineering at the University of Mataram.

D. WRITING SEMINAR PAPER (optional)

ARTICLE 19

DEFINITION

A seminar paper is a summary that represents the contents of the final project. It is written briefly, concisely, and attractively to be presented in a seminar.

ARTICLE 20

ORDER OF SEMINAR PAPER

1. Opening Part
The opening part includes the title page, approval page, and abstract, along with keywords. Examples of title page and approval page can be seen in Appendices C and D.

2. Main part
The main part includes: an introduction, a literature review and brief theory, methodology/study/calculations, results and discussion, conclusions, and suggestions.
 - a. The introduction contains background of the study, problems, and objectives of the study.
 - b. Literature review and brief theory contains brief and systematic descriptions of previous research/studies/designs and theories that are related to and support the contents of the paper.
 - c. The research/study/design methodology contains a description of how the researcher conducts the research/study/calculation. It includes materials and tools (if any).
 - d. The results and discussion contain a description of the results of the study and the scientific discussion (explanation).
 - e. Conclusions and suggestions contain brief and precise statements that describe the results of the research and its discussion and the necessary suggestions
3. Closing Part
The closing part contains bibliography and appendices (if any).
 - a. Bibliography contains all the references used in writing the final project
 - b. Appendices contains data that has not been processed such as result of the test, measurements as outlined in tables or figures, program listings, block diagrams, flow charts, and photos.

CHAPTER IV. F O R M A T

The writing format of final project paper includes: material and paper size, typing, numbering, tables and figures, language, the writing of name and the writing of bibliography.

ARTICLE 21

TYPE AND SIZE

Paper type and size includes text, cover, cover color and writing on the cover, namely:

1. Text
The texts are written on at least 70 grams HVS A4 paper and are not duplex.
2. Cover
 - a. The cover is made of buffalo paper or similar. The words read on the cover is the same as those on the title page. In the final project report, the cover is printed in a hard cover. The author's name and student number, title of the final project, and year of compilation are written on the spine as seen in Appendix E2.
 - b. The format for the title page is as follows:
 - 1) All words and logo of the University of Mataram are typed in center alignment using 1 spacing. The paragraph spacing is set proportionally.
 - 2) All words should be typed in Times New Roman font size 12 pitch except for the title which is written in size 14 pitch.
 - 3) The title of the final project, name, and student number are written in bold.
 - 4) The title of the final project, the name of the department/study program, faculty and university are written in bold capital letters.
 - 5) Logo of the University of Mataram is black and ± 5 cm in diameter. It is put in the middle of the page (center alignment).
3. Cover Color
For the Faculty of Engineering, the University of Mataram, the cover color is light blue.

ARTICLE 22

T Y P I N G

The typing include: font type, numbers and units, line spacing, margin, alignment, new paragraphs, beginning of sentences, titles and sub-headings, and layout.

1. Font Type
 - a. The texts are typed in upright font, 12 pitch Times New Roman. All texts must use the same font type and size

- b. For certain purposes, italic and bold font, and quotation marks can be used. Italic font is used for foreign terms, variables, and equations; bold font is used for chapter titles and sub-chapters; and quotation marks is used for quotes.
- c. Symbols, Greek letters, or signs that cannot be typed are written in black ink or in bold type
- 2. Numbers and units
 - a. Numbers are written in numerals, except at the beginning of sentences, for example One m is equal to 100 cm
 - b. Decimals are marked with commas, not with periods, for example the length of the road is 10,50 km.
 - c. Units are written without a dot after them, except at the end of the sentence, for example: m, g, kg, cal, etc.
- 3. Line Spacing
 - a. Line spacing for all description is 1.5.
 - b. Line spacing for abstracts, direct quotations written in one paragraph, table titles, figure titles, and bibliography is single.
 - c. The space between the last line of a paragraph and a subtitle is double as shown in an example example provided in this guide (see Appendix K).
- 4. Margin

The margin is measured from the edges of the paper. The margin is as follows:

 - a. Top : 3 cm
 - b. Bottom : 2.5 cm
 - c. Left : 3.5 cm
 - d. Right : 2.5 cm
- 5. Alignment

The texts should completely fill the space, from left to right, except for a new paragraph, equation, table, figure, subtitle, or other special matters. The paragraph which is written after another paragraph and sub-chapter is written from left.
- 6. New paragraph

The new paragraph begins on the 6th hit from left.
- 7. Titles of chapters and sub-chapters
 - a. Chapter titles are written in uppercase, Times New Roman, 14, bold, centered, and without a period. The titles of subchapters are also written in bold and font 12. Chapter number and chapter title are written on different lines, and if the chapter title is more than one line, it should be typed using single spacing.
 - b. The title of the 1st order sub-chapter is typed from the left margin, the first letter of each word is typed in uppercase (capital), except for conjunctions and prepositions, and without a period.
 - c. The title of the 2nd order sub-chapter is typed starting from the left margin, only the first letter of each word is typed in uppercase without a period.
 - d. Titles of 1st and 2nd sub-chapters are written in bold
- 8. Listing

If there are details that must be listed, they must be listed sequentially using numbers or letters according to the level of the detail.
- 9. Position

Figures, tables, chapter titles are centered.

ARTICLE 23

NUMBERING

This section explains the numbering of titles, pages, tables, figures, and equations

- 1. Titles

Chapter title is numbered using Roman numerals while sub-chapter, 1st or 2nd order, is numbered using Arabic numerals (see Appendix K).
- 2. Lists
 - a. If there is a detail listed in points, the numbering format used is 1, 2, 3, 4 etc.
 - b. The first-order sub-details are listed using letters such as a, b, c, etc.
 - c. The second-order sub-details are indicated by a single parenthesis such as 1), 2), 3), etc.
 - d. The third-order sub-details are indicated by a single parenthesis such as a), b), c), etc.
- 3. Pages

- a. The opening part of the report, from the title page to the abstract, is numbered in small Roman numerals and the page number is placed at the bottom center of the page in Times New Roman 12. However, the page number for the title page is hidden.
 - b. The main and closing parts of the report, from the Introduction (Chapter I) to the last page, are numbered using Arabic.
 - c. The page number for the main and closing parts of the report is placed on the bottom right of each page.
4. Table
- The title of the table is written in Arabic numerals consisting of 2 numbers separated by a period. The first number indicates the chapter number and the second number indicates the table number in the respective chapter. The table numbers table titles are separated by a space without a period as shown in the example below:

Table 2.1. The analysis of a state response using PID

System performance	Zero load (dt)	Moment load	Set point 3000-1500
<i>Setling time</i>	0,004125	0,19975	0,015015
<i>Rise time</i>	0,003685	0,019035	0,014545
<i>Overshoot1</i>	0,29891	0,29891	0,38368
<i>Overshoot2</i>	-	7,909	-
<i>Error</i>	0,80575	1,65611	2,8007
<i>Error Steady state</i>	0,02685	0,055203	0,18672

Tabel 2.2. This is how a title is written if the title is more than one line in the final report of a student at the Faculty of Engineering, the University of Mataram.

System performance	Zero load (dt)	Moment load	Set point 3000-1500
<i>Setling time</i>	0,004125	0,19975	0,015015
<i>Rise time</i>	0,003685	0,019035	0,014545
<i>Overshoot1</i>	0,29891	0,29891	0,38368
<i>Overshoot2</i>	-	7,909	-
<i>Error</i>	0,80575	1,65611	2,8007
<i>Error Steady state</i>	0,02685	0,055203	0,18672

5. Figures
- Figures are numbered in Arabic numerals consisting of 2 numbers separated by a period. The first number indicates the chapter number and the second number indicates the picture number in the respective chapter. Figure number and title are separated by a space without periods as shown in the following example:

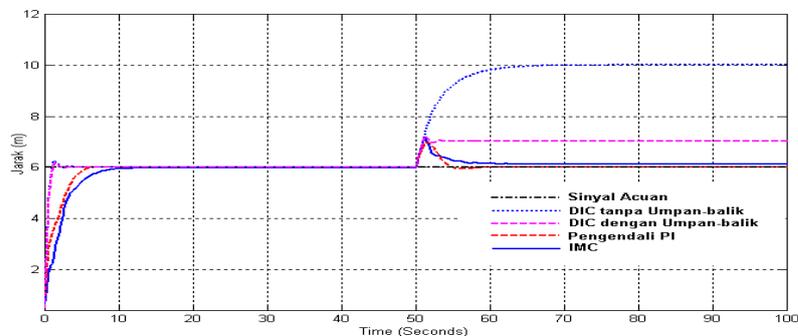


Figure 2.1. The comparison of performance between ANN controller and PI controller

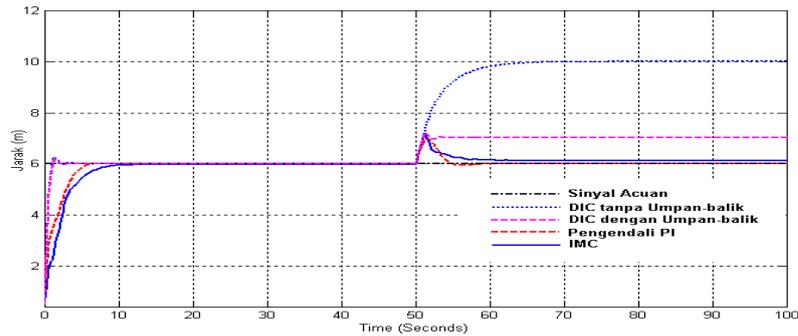


Figure 2.2. This is how a figure title is written if the title is more than one line in the final project report of a student at the Faculty of Engineering, the University of Mataram.

6. Equations

Formulas are numbered in Arabic numerals consisting of numbers separated by a - (dash) and using 1.5 between equations. The numbering includes the chapter number as shown in the following example:

$$h(ek) = a_1 d^2 + a_2 d^2 + a_3 d^3 \quad (2-3)$$

ARTICLE 24

TABLE AND FIGURE

This section discusses about tables and figures

1. Table

- a. The title of the table is written in Times New Roman 11 pts. Only the first letter of the first word is uppercased. The title is ended with a period.
- b. Number of a table which is followed by the table title is put right before the table and is centered as is the table (see example of Table 2.1). If the title of the table is more than one line, the text is justified (see example of Table 2.2).
- c. A tables may not be broken, unless it is impossible to write it on one page. On the occasion a table should be continued on the subsequent page, the table number is rewritten, but the table title is not.
- d. Each column has a description, and between one column and another is clearly separated.
- e. For tables which are written in landscape orientation because of their size, the top part of the table should be placed on the right margin.
- f. Tables that consist of more than 2 pages or must be folded, should be put in appendix.
- g. Description of columns or rows and contents of the table are written in Times New Roman 8-11 pts.
- h. If the table is taken from a reference, the source of the table is written below the table in brackets.

2. Figures

- a. Title of the figure is written in Times New Roman 11 pts. Only the first letter of the first word is uppercased. The title is ended with a period.
- b. The title of the figure is written below the figure using a center alignment (see example Figure 2.1). If the title of the figure is more than one line, the text is justified (see example Figure 2.2)
- c. A figure cannot be cut off.
- d. For figures which are made in landscape orientation because of their size, the top part of the figure should be placed on the right margin.
- e. The figures are centered.
- f. Figures that due to their size must be folded should be put in the appendix.
- g. If the figure is taken from a reference, the source is listed in parentheses below the figure title

ARTICLE 25

LANGUAGE

This section describes the language used, terms, and frequent errors made:

1. Language
 - a. The language used is good, standardized, grammatical Indonesian. Sentences are short, concise, and clear
 - b. Personal pronouns such as: I, we, you and other personal pronouns may not be used. Rather, the sentences are written in the passive voice. Furthermore, in acknowledgement, the author refers himself/herself as 'author' instead of 'I'.
 - c. The final project can be written in English, if the student is deemed capable and the supervisor approves it.
2. Terms
The terms used are the ones that have been adapted into Indonesian, if foreign terms must be used, they are written in italics. For abbreviated terms, what they stand for should be written in full when they first introduced and the abbreviation is put in brackets. Henceforth, the abbreviation should always be used.
3. Frequent errors
 - a. Conjunctions, such as so, and, and while cannot be used to start a sentence.
 - b. The words where, from, and than must be used correctly. More importantly, the word "with" is used instead of "where" in the description of the formula.
 - c. Prefixes "ke" and "di" must be distinguished from the prepositions "ke" and "di"
For example:
 - This cake was bought at the market
 - Ali went to the city in pursuit of success

ARTICLE 26

WRITING NAMES

This section includes the rules on how to write an author's name referred to in the text, authors name in the bibliography, authors whose names are more than one syllable, authors' whose names are followed by an abbreviation, and degree.

1. Authors whose names are referred to in the text are only mentioned with their last names, but if there are more than 2 authors, only the last name of the first author is listed followed by et al. If the references are in English,
for examples:
 - a. According to Kelvin (1978),
 - b. According to Krebs and Walker (1971),
 - c. Gasoline can be made from methanol (Meisel et al., 1976) if there are more than two authors.
2. Name of authors in the bibliography
 - a. In the bibliography, all author names should be written, not only the name of the first author while the rest is/are represented by et al.
For example:
Meisel, S.L., Moculiough. J.P., Leckhaler, G.M., and Weisz, P.B., not: Meisel, S.L. et al.
 - b. If the author's name is more than one word, the last name is written first followed by a comma, abbreviated first name, middle name and etc.
For example:
 - Sutan Takdir Alisyahbana, written as: Alisyahbana, S.T.
 - Donald Fitzgerald Othmer, written as: Othemr, D.F.
3. Names with a hyphen
If the author's name in the original source is written with a hyphen between, both words are considered one.
For example:
Sulastian – Sutrisno is written as Sulastian – Sutrisno.
4. Name followed by an abbreviation
If the author's name is followed by an abbreviation, the abbreviation belongs to the word before it.
For example:
 - a. Mawardi A.I. is written as: Mawardi, A.I.
 - b. William D. Ross Jr. is written as: Ross Jr, W.D.

5. Degree
Degree is not written either in the text or in the bibliography.

ARTICLE 27 WRITING BIBLIOGRAPHY

The bibliography only contains the references mentioned in the text and is written alphabetically in which the last name of the authors appears first. Bibliography is written according to APA referencing style (<https://apastyle.apa.org/>).

1. Book: Author's last name and abbreviated first name(s), year of publication, book title written in italics, name of publisher.

Example: Ranga-Raju, K. G. (1981). *Flow Through open Channels*. Tata McGraw – Hill.

Evan, J. T., Gomm, J. B., Williams, D., Lisboa, P. J. G. and To, Q. S. (1993). *Application of Neural Networks to Modelling and Control*. Chapman and Hall.

2. Book chapter: Author's last name and abbreviated first name(s), year of publication, title of book chapter, name of editor, title of book written in italics (book chapter page), name of publisher.

Example:

Saks Berman, J. (1995). From Chicago to Rainbow Bridge: In search of changing woman. In E. F. Williams (Ed.), *Voices of feminist therapy* (pp. 11–25). Harwood Academic Publishers.

3. Scientific magazine: author's last name and abbreviated first name(s), year of publication, title of article, name of scientific magazine written in italics, volume (number) of issue, page number. doi (if any).

Example:

One author:

Binnall, J. M. (2019). Jury diversity in the age of mass incarceration: An exploratory mock jury experiment examining felon-jurors' potential impacts on deliberations. *Psychology, Crime & Law*, 25(4), 345–363. <https://doi.org/10.1080/1068316X.2018.1528359>

Two authors:

Rivals, I., and Personnaz, L. (2000). Nonlinear Internal Model Control Using Neural Networks: Application to Processes with Delay and Design Issues, *IEEE transaction on Neural Networks*, 11(1), 80-90.

4. Proceedings: author's last name and abbreviated first name(s), year of publication, title of article, name of conference (italics), volume(no), pages. doi (if any).

Example:

Albright, M. (1991). The role of the United States in Central Europe. *Proceedings of the Academy of Political Science*, 38(1), 71–84. <https://doi.org/10.2307/1173814>

5. Paper and poster presentations: author's last name and abbreviated first name(s), year and date of presentation, title of article, name of conference (italics), City, Country.

EXample: Sugiman, Setyawan, P.D., dan Ardiansyah, D. (2007, 14-15 April), Sifat Mekanik Polyester Tak Jenuh dengan Bahan Pengisi (Filler) Fly-Ash. *Seminar Nasional Teknik Mesin*, Universitas Kristen Petra Surabaya, Indonesia.

6. Thesis and Dissertation: Author's last name, abbreviated first name(s), year, thesis title, Thesis, university name, repository name.

Example:

Wiraraja, L. A. (2021). *Pengaruh carboxyl terminated butadiene acrylonitrile (CTBN)-partikel arang terhadap sifat tarik komposit partikel bermatrik epoxy* [Skripsi, Universitas Mataram]. Repositori Universitas Mataram.

7. Patent

Example:

Pfeifer, A., Muhs, A., Pihlgren, M., Adolfsson, O., & Van Leuven, F. (2017). *Humanized tau antibody* (U.S. Patent No. 9,657,091). U.S. Patent and Trademark Office. <http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=9,657,091>

8. Online resources

example:

Report: author's last name and abbreviated first name(s), year of publication, article title, publisher, website address.

Warner-Griffin, C., Liu, H., Tadler, C., Herget, D., & Dalton, B. (2017). *Reading achievement of U.S. fourth-grade students in an international context: First look at the Progress in International Reading Literacy Study (PIRLS) and ePIRLS 2016* (NCES Report No. 2018-017). Institute of Education Sciences, National Center for Educational Statistics. <https://nces.ed.gov/pubs2018/2018017.pdf>

Newspaper: author's last name and abbreviated first name(s), year of publication and date, article title, publisher, website address.

Klein, J. (2018, May 8). *How the father of computer science decoded nature's mysterious patterns*. The New York Times. <https://www.nytimes.com/2018/05/08/science/alan-turing-desalination.html>.

Magazine: author's last name and abbreviated first name(s), year of publication and date, article title, publisher, source or website address.

Ruff, C. (2016, February 5). *Computer science, meet humanities: In new majors, opposites attract*. The Chronicle of Higher Education, 62(21). <https://www.chronicle.com/article/Computer-Science-Meet/235075/>

9. If the author is an organization:

Example:

Amnesty International. (2019). *Fragmented and unequal: A justice system that fails survivors of intimate partner violence in Louisiana, USA* (Report No. AMR 51/1160/2019).

10. Software, applications, dan data set:

Example:

Software Package

Greene, W. H. (2016). NLOGIT (Version 6) [Computer software]. Econometric Software.

Downloads

Paszke, A., Gross, S., Chintala, S., & Chanan, G. (2019). PyTorch (Version 1.3.0) [Computer software]. <https://pytorch.org/>

Mobile Phone Applications

Steindorf, J. (2019). Baseball statistics (Version 2.0.2) [Mobile app]. App Store. <https://apps.apple.com/us/app/baseball-statistics/id1019047563>

Data set

Magid, K., Sarkol, V., & Mesoudi, A. (2017). Experimental priming of independent and interdependent activity does not affect culturally-variable psychological processes [Data set]. Dryad. <https://doi.org/10.5061/dryad.7j270>

ARTICLE 28

APPENDICES

1. The order of appendices follows the mention of appendices in the text
2. Appendices title is written in Times New Roman 12 pts and appendix numbers is written in Arabic numerals or uppercase letters
3. Page number continues the previous number.

CHAPTER V. RESULT

ARTICLE 29

SEMINAR PAPER FINAL PROJECT PROPOSAL

1. Students are required to write a seminar paper on final project proposal given to: supervisors, examiners, and participants (if any) in the form of printed or electronic documents in word or pdf format containing an approval sheet and an electronic signature.
2. The seminar paper is submitted to the supervisors and examiner 3 days before the the seminar is conducted.

ARTICLE 30

SEMINAR PAPER ON FINAL PROJECT RESULT (OPSIONAL)

1. Students are required to write a seminar paper on their final project result which is given to supervisors, examiner(s), and participants in the form of printed or electronic documents, in word or pdf format containing an approval sheet with an electronic signature.
2. The seminar is submitted to the supervisor and examiner(s) 3 days before the seminar is conducted.

ARTICLE 31

FINAL PROJECT REPORT

1. Students are required to print the final project report for at least 5 copies which are given to
 - a. Supervisors 2 printed or *soft copies*
 - b. Faculty Library 1 printed and a *soft copy*
 - c. University Library 1 printed and a *soft copy*
 - d. The department/study program 1 printer or a *soft copy*
2. The Report should be approved by the Head of the Department/Study Program, before it is signed by the Dean.
3. The Final Project Report signed by the Dean is made in soft-copy (pdf) and must be submitted to the Faculty of Engineering library

ARTICLE 32

FINAL PROJECT PAPER

1. Students are required to write a scientific paper on the result of the final project which writing format is adjusted to the intended scientific journal. The first author is the student and the co-authors are the supervisors.
2. The scientific paper is a scientific article that is abstracted from parts or all of the contents of the final project.
3. The scientific paper should at least be submitted to a scientific conference/journal.

CHAPTER V. OTHERS

ARTICLE 33

1. Departments/study programs can make additional rules as long as they do not reduce and deviate the rules in this guideline.
2. This guideline is applicable and implemented since it was stipulated with the provisions that can still be evaluated/reviewed in at least 2 years and no later than 4 years.

ARTICLE 34

With the issuance of this guideline for the final project, the previous guidelines, both contained in the Faculty of Engineering Handbook and the Final Project Writing Manual, are declared no longer valid.

Stipulated in : Mataram
On : 28 December 2021
Dean,

Muhamad Syamsu Iqbal, ST, MT., Ph.D.
NIP. 19720222 199903 1 002

CC:

1. The Rector of the University of Mataram
2. Deans in the University of Mataram
3. Head of the Department/study program in the Faculty of Engineering at the University of Mataram

Appendix A. Format of the Front Cover of the Final Project Proposal

FINAL PROJECT PROPOSAL (Font: 12 Times New Roman **BOLD**, Uppercase)

TITLE OF FINAL PROJECT PROPOSAL (Font:14 Times New Roman **BOLD**, Uppercase, Single Space)



By:
Student Name
Student Number

} Font 12 Times
New Roman
(**BOLD**), Single
space

DEPARTMENT/STUDY PROGRAM
FACULTY OF ENGINEERING
THE UNIVERSITY OF MATARAM
Year

} **Font 12**
Times New Roman
(**BOLD**), single
space

Example of a Final Project Proposal Front Cover

FINAL PROJECT PROPOSAL

**HYDROLOGY MODELS
TRANSFORMATION OF RAIN INTO FLOW**



By:

**Student Name
FIX 0XX XXX**

**DEPARTMENT OF CIVIL ENGINEERING
FACULTY OF ENGINEERING
THE UNIVERSITY OF MATARAM
2022**

Appendix B. Format of Final Project Proposal Approval Page

FINAL PROJECT PROPOSAL (Font 12 Times New Roman BOLD, Uppercase)

TITLE OF FINAL PROJECT PROPOSAL (Font 14 Times New Roman BOLD, uppercase, single space)

By:
Student Name
Student Number

} Font 12
Times New
Roman (BOLD)

Checked and Approved by::

1. Supervisor

Name.....
NIP:

Date: date month year

} Font 12
Times New Roman

2. Co-supervisor

Name.....
NIP:

Date: date month year

Acknowledged by:
Head/Secretary ofDepartment/Study Program
Faculty of Engineering
The University of Mataram

} Font 12
Times New Roman

Name.....
NIP:

Example of Final Project Proposal Approval Page

FINAL PROJECT PROPOSAL

**HYDROLOGY MODELS
TRANSFORMATION OF RAIN INTO FLOW**

By:

**Student Name
F1X 0XX XXX**

Checked and Approved by:

1. Supervisor

Ir. Jl Majapahit, MT, PhD
NIP: 19601231 198003 1 001

Date: 7 January 2022

2. Co-supervisor

Dr. Jl Pemuda, ST., MT.
NIP: 19701231 199903 1 002

Date: 4 Januari 2022

Acknowledged by
Head of Department of Civil Engineering
Faculty of Engineering
The University of Mataram

Dr. Airlangga, ST., MEng
NIP: 19731231 200003 1 001

Appendix C. Format of Final Project Results Seminar Paper Front Cover

FINAL PROJECT RESULT SEMINAR PAPER (Font 12
Times New Roman (BOLD), uppercase)

TITLE OF FINAL PROJECT RESULT SEMINAR PAPER (Font 14
Times New Roman (BOLD), Uppercase, single space)



By:
Student Name
Student Number } Font 12 Times New
Roman (BOLD), single
space

DEPARTMENT/STUDY PROGRAM OF
FACULTY OF ENGINEERING
THE UNIVERSITY OF MATARAM } Font 12
Times New Roman
Year (BOLD), single
space

Example of Final Project Results Seminar Paper Front Cover

FINAL PROJECT RESULT SEMINAR PAPER

**HIDROLOGY MODELS
TRANSFORMATION OF RAIN INTO FLOW**



By:

**Student Name
F1X 0XX XXX**

**DEPARTMENT OF CIVIL ENGINEERING
FACULTY OF ENGINEERING
THE UNIVERSITY OF MATARAM
Year**

Appendix D. Format of Final Project Result Seminar Paper Approval Page

FINAL PROJECT PROPOSAL/RESULT SEMINAR PAPER (Font 12
Times New Roman (BOLD))

TITLE OF THE PAPER (Font 14
Times New Roman (BOLD))

By:

Student Name
Student Number

} Font 12
Times New Roman
(BOLD)

Checked and Approved by:

1. Supervisor

.....
NIP:

Date: date month year

2. Co-supervisor

.....
NIP:

Date: date month year

} Font 12
Times New
Roman

Acknowledged by
Head ofDepartment/Study Program
Faculty of Engineering
The University of Mataram

NIP:

Example of a final project seminar paper approval page

FINAL PROJECT PROPOSAL/RESULT SEMINAR PAPER

**MODEL OF HIDROLOGY
TRANSFORMASTION OF RAIN INTO FLOW**

By:

**Name of the Student
F1X 0XX XXX**

Checked and approved by

1. Supervisor

Ir. Jl Majapahit, MT, PhD
NIP: 19601231 198003 1 001

Date: 7 January 2022

2. Co-supervisor

Dr. Jl Pemuda, ST., MT.
NIP: 19701231 199903 1 002

Date: 4 January 2022

Acknowledge by:
Head of Civil Engineering Department
Faculty of Engineering
The University of Mataram

Dr. Airlangga, ST., M.Eng
NIP: 19731231 200003 1 001

Appendix E1. Format of Final Project Front Cover

TITLE OF FINAL PROJECT (Font 14
Times New Roman BOLD)

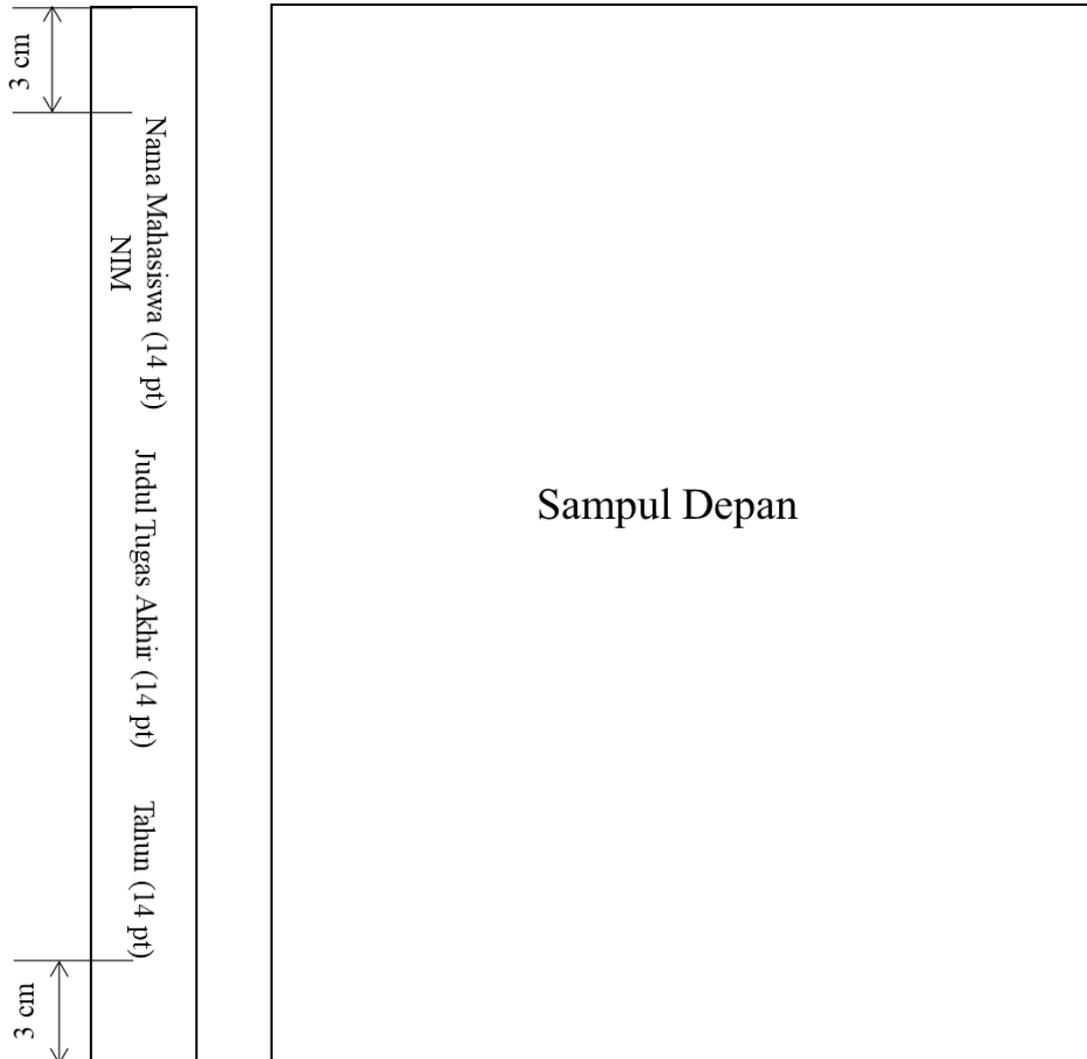
Final Project
To meet one of the requirements
to earn a Bachelor of ... (Department/Study Program) } Times New
Roman
12 pts



By: } Font 12
Student Name } Times New Roman
Student Number } BOLD

DEPARTMENT/STUDY PROGRAM } Font 12
FACULTY OF ENGINEERING } Times New
THE UNIVERSITY OF MATARAM } Roman
Year } BOLD

Appendix E2. Format of the Book's Spine



Example of Final Project Front Cover

**MODEL OF HIDROLOGY
TRANSFORMATION OF RAIN INTO FLOW**

Final Project
To meet one of the requirements
to earn a Bachelor of Civil Engineering



By:

**Student Name
F1X 0XX XXX**

**DEPARTMENT OF CIVIL ENGINEERING
FACULTY OF ENGINEERING
THE UNIVERSITY OF MATARAM
2022**

Appendix F. Format of the Approval Page by Final Project Supervisors

Final Project (Font 12 Times New Roman BOLD)

FINAL PROJECT TITLE (uppercase BOLD Times New Roman 14 pts)

Checked and approved by the supervisors

1. Supervisor

.....
NIP:

Date:

2. Co-supervisor

.....
NIP:

Date:

Font 12
Times New
Roman

Acknowledged by,
The Head of Department/Study Program
Faculty of Engineering
The University of Mataram

.....
NIP.

Example of Approval Page supervisors

Final Project

**HIDROLOGY MODELS
TRANSFORMATION OF RAIN INTO FLOW**

Checked and approved by the supervisors

1. Supervisor

Ir. Majapahit, MT, PhD
NIP: 19601231 198003 1 001

Date: 7 January 2022

2. Co-supervisor

Dr. Pemuda, ST., MT.
NIP: 19701231 199903 1 002

Date: 4 January 2022

Acknowledged by,
Head of the Department of Civil Engineering
Faculty of Engineering
The University of Mataram

Dr. Airlangga, ST., M.Eng
NIP : 19731231 200003 1 001

Appendix G. Format of the Approval Page by Board of Examiners

Final Project (Font 12 Times New Roman Bold)

TITLE OF FINAL PROJECT (Font 14 Times New Roman Bold Uppercase)

By:

Student Name (Font 12Times New Roman Bold)
Student Number (Font 12Times New Roman Bold)

Defended before the Board of Examiners
on date..month..year..
and declared to meet one of the requirements
to earn a Bachelor of ... (Department/Study Program)

Structure of the Examiners

1. Examiner I

.....
NIP:

2. Examiner II

.....
NIP:

3. Examiner III

.....
NIP:

Mataram, Date Month Year
Dean of Faculty of Engineering
The University of Mataram

.....
NIP.

Font 12
Times New
Roman

Example of Approval Page by Board of Examiners

Final Project

**HIDROLOGY MODELS
TRANSFORMATION OF RAIN INTO FLOW**

By:

Student Name

F1X 0XX XXX

Defended before the Board of Examiners

On 1 September 2003

and declared to meet the requirement to earn a Bachelor of Engineering

Structure of Examiners

1. Examiner I

Ir. Jl Pendidikan, MT, PhD
NIP: 19671231 198003 1 001

2. Examiner II

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Mataram, 09 January 2022
Dean of Faculty of Engineering
The University of Mataram

Ir. Catur Warga, MT, PhD
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Appendix H. Statement of the Authenticity of the Final Project

DECLARATION OF THE AUTHENTICITY OF THE FINAL PROJECT

The undersigned below:

Name :
Student Number :
Study Program :
University :

Hereby declares that the Final Project that I have written under the title: "Title of Final Project" is original or not a plagiarism and has never been published anywhere and in any form.

Thus, I write this statement truthfully without any coercion from any party. If in the future it turns out that I gave false information and/or there are other parties who claim that the Final Project I have written is the work of a certain person or entity, I am willing to be processed both criminally and civilly and my graduation from the University of Mataram will be revoked/canceled.

Made in :
On :

The undersigned,

Student Name

Appendix I. Format of Foreword

FOREWORD (Times New Roman 14)

The foreword is written in Times New Roman 12 Spacingd 1.5. The foreword is written in Times New Roman 12 Spacingd 1.5.

The writer praises the God, the Most Compassionate and Merciful for all His blessings, guidance, and gifts, so that the writer can complete the Final Project with the title "Title of Final Project".

This Final Project was carried out in the Laboratory of [Lab Name], Engineering Department/Study Program [Name of department/study program] UNRAM. The purpose of this Final Project is [to]. This Final Project is also one of the graduation requirements to earn a bachelor's degree in the Engineering Department/study program [Name of Department/Prodi], Faculty of Engineering, University of Mataram.

Finally, hopefully it is not too much if the writer hopes that this work can be useful for readers.

Mataram, dd/mm/yyyy

Writer

Example of Foreword

FOREWORD

The writer praises the God, the Most Gracious and Merciful for all His blessings, guidance, and gifts, so that the writer can complete the writing of the Final Project under the title "Design and Build Laboratory Data Management Software in the Department/study program of Electrical Engineering Using Client Server Database ”.

This Final Project was carried out at the Computer Laboratory, Department of Electrical Engineering, the University of Mataram. The purpose of this Final Project is first, to design and build an online laboratory data management system that can be accessed quickly, precisely, and accurately, so that it can overcome some of the weaknesses of the current management system (manual system); secondly, to support the ICT management system within the University of Mataram in order to realize better administrative governance. This Final Project is also one of the graduation requirements to achieve a bachelor's degree in the Department of Electrical Engineering, Faculty of Engineering, the University of Mataram.

Finally, hopefully it is not too much if the writer hopes that this work can be useful for readers.

Mataram, 3 March 2022

Writer

Appendix J. Format of Acknowledgment

ACKNOWLEDGMENT (Times New Roman 14)

Acknowledgment is written in Times New Roman 12 1.5 space, for example: This Final Project can be completed because of the academic supervision by and material support from various parties. Therefore, on this occasion, the author would like to express his sincere gratitude to:

1. Supervisor.
2. Co-supervisor.
3. Lecturers/parties involved in discussions related to certain methods.
4. Funders
5. Provider of supporting data in this final project
6. All parties that the writer cannot mention one by one, who have provided the writer with guidance during the completion of this Final Project.

May God the Almighty repay all the assistance given to the author with a better return.

Example of Acknowledgement

ACKNOWLEDGEMENT

This Final Project can be completed because of the academic supervision by and material support from various parties. Therefore, on this occasion, the author would like to express his sincere gratitude to:

1. Dr. Majapahit, ST., MT., as the first supervisor who had provided academic supervision and guidance for the author during the compiling of Final Project thus it can be completed properly.
2. Sri Wijaya, ST., MT., as the co-supervisor who had provided guidance for the author during the compiling of this Final Project.
3. RR Brawijaya, ST., MT., for providing thorough explanation about the database and entity relationships which are very necessary for the author to complete this final project.
4. Director General of Higher Education, DEPDIKNAS for financial support endowed through the Semi Que V program, Department/study program of Electrical Engineering, the University of Mataram.
5. All parties whom the author cannot mention one by one, who had provided guidance for the author in completing this thesis.

May God the Almighty repays all the assistance given to the author with a better return.

Appendix K. Example of Literature Review and Background of the Theory

CHAPTER II LITERATURE REVIEW AND BACKGROUND OF THE THEORY

2 × double spacing

2.1 Literature Review

Carbon steel is widely used in industry, especially in manufacture of automotive and machines. Most automotive or machine manufacture is assembled using adhesive joints instead of welded joints. The joint, at a certain moment, experiences a static load and or a fluctuating dynamic load. This will have a direct impact on the strength of the joint which can cause damage to the construction.

The result of research on adhesive lap joints and butt joints of soft-epoxy steel with double cantilever beams conducted by Ikagemi et al. (1996), showed that a strong adhesive did not always produce a stronger joint than a less strong adhesive. To obtain the optimum strength of the joint, it is necessary to control the temperature of the adhesive layer. The strength of adhesive joint of the tapered-double cantilever beam of aluminum epoxy alloy AF-163-2M obtained through fatigue test is affected by temperature and working environment (Fernando et al., 1996).

Crithlow and Brews (1995) who investigated the effect of surface macro roughness on the durability of epoxy-aluminum joints showed that the degree of macro-roughness measured with a profilometer and observed with a Scanning Electron Microscope (SEM) had a small but significant effect on the durability of epoxy-aluminum joints. A rougher surface resulted in a weaker joint after immersion in de-ionized water at $60\pm 1^\circ\text{C}$ for 211 days.

The result of research conducted by Imanaka et al. (1988) showed that the longer the lap and the thinner the adhesive, the lower the fatigue strength. Blanchard et al. (1996) applied a new test to predict fatigue life and the result showed that at a thin adhesive layer, a cohesive failure occurs, while at a thick adhesive layer, an adhesive failure occurs. Nayeb et al. (1997) showed that pure torsion loading required a higher shear stress to cause joint failure than pure tensile loading. Specimens under torsional loading show a greater fatigue life.

1 × double spacing

2.2 Background of the Theory (1st order of sub-chapter)

2.2.1 Basic Principles of *adhesion* (2nd order of sub-chapter)

There is no theory that satisfactorily explains the properties of adhesions and the mechanism of bond formed by the adhesives and adherends. There are four theories that try to explain the process of adhesion between adhesive and adherend (Semerdjiev, 1970):

- a. The theory of mechanical interlocking (mechanical adhesion) states that the bond between two material is due to the mechanical anchoring of the adhesive into the roughness and pores of the adherend surface. However, this theory is considered to have a small role in adhesion.
- b. The adsorption theory states that adhesion is a purely a surface process (like adsorption). This theory explains that the bond formed by adhesive and adherend is basically the result of the action of intermolecular forces (hydrogen bonds, dipole-dipole, London dispersion forces).
- c. The diffusion theory states that adhesion consists of the diffusion of a chain molecule or its parts. This results in the formation of a strong bond between the adhesive and adherend. This theory is based on the characteristic properties of polymers (polymer chain structure, micro-Brownian motility) and the presence of polar groups in their composition.
- d. Electrical theory states that the adhesion process is based on the concept of a double electrical layer that forms at the interface between the adhesive film and the adherend in contact. This theory assumes that the cause of bond formation is the existence of electric attractive forces occur between molecules, atoms and ions.

2.2.2 Adhesive joint stress distribution

In a single lap joint, a bending moment (M_0) appears because the directions of the two forces are not collinear (Figure 2.1). The value of the load at the edge depends on the joint information under applied tension. If the load on the joint is very small, there is no rotation from overlap and $M_0 = Pt/2$, with P is the joint edge load. If the load is increased, the overlap rotates and makes the line of action of the load closer to the adherend center line and reduces the value of the bending moment. Goland and Reissner (1994) took this effect into account and used the bending moment factor to calculate the bending moment, $M_0 = kPt/2$. Factor is always less than one

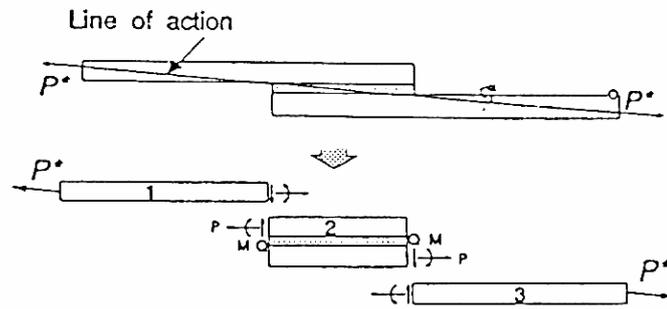


Figure 2.1 Line of action of forces working on joints (Ingen and Vlot, 1993).

The k factor is defined as:

$$k = \frac{l}{1 + 2\sqrt{2}\tanh\frac{\lambda c}{2\sqrt{2}}} \quad (2-1)$$

$$\lambda = \sqrt{12(1-\nu^2)} \sqrt{\frac{P/tE}{t}} \quad (2-2)$$

E , t , ν are adherend properties and c is half the lap length

Reduction of the distribution of shear stresses and normal stresses in joints applies the following steps (Ingen and Vlot, 1993):

- Moment balance

$$\frac{dM(x)_u}{dx} - Q(x)_u + \tau(x)\frac{t}{2} = 0, \quad \frac{dM(x)_l}{dx} - Q(x)_l + \tau(x)\frac{t}{2} = 0 \quad (2-3)$$

- Horizontal force balance

$$\frac{dP(x)_u}{dx} - \tau(x) = 0, \quad \frac{dQ(x)_l}{dx} + \tau(x) = 0 \quad (2-4)$$

Appendix L. Format of Final Project Implementation Log Book

L.1 Cover of Log Book

FINAL PROJECT LOG BOOK (Uppercase, Bold, Font 12 Times New Roman)

TITLE OF PAPER (Uppercase, Bold, Font 14 Times New Roman)



By:

Student Name
Student Number

DEPARTMENT/STUDY PROGRAM OF
FACULTY OF ENGINEERING
UNIVERSITY OF MATARAM
YEAR

L.2 Format of Final Project Implementation Logbook

No	Date	Description	Supporting evidence (results of observation, photos, etc.)
1	2 January 2022	Describe the activities in detail	Describe the results of observations. It can be photos, sketches, tables, graphs, and others.
2			
3			
Etc.			

Acknowledging,

Supervisor

Co-supervisor

.....
NIP

.....
NIP