# **GUIDEBOOK** **for**

# **UNDERGRADUATE PROPOSAL AND UNDERGRADUATE THESIS**

# **MANUSCRIPTS WRITING**

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**FACULTY OF SCIENCE AND TECHNOLOGY**

**UNIVERSITAS AIRLANGGA**

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# **A BRIEF REMARK**

All praise and gratitude to God, the Almighty, because by His grace, the revised version of the Guidebook for Proposal and Undergraduate Thesis Manuscript Writing for the Faculty of Science and Technology of Universitas Airlangga has been completed. This book is an improvement from the previous guidebook, which was compiled and first used in 2015.

According to the undergraduate program curriculum, completing a thesis is a requirement for obtaining a bachelor’s degree. Students are required to write a thesis at the end of their academic program under the Universitas Airlangga Education Guidelines. This is a requirement and a scientific accountability for completing an educational program at a certain academic level, following the established curriculum.

This guidebook outlines the procedures, writing methods, guidelines, and limitations for preparing undergraduate proposals and theses in the Faculty of Science and Technology at Universitas Airlangga. Students must follow this guidebook to ensure that the structure and scientific standards meet the thesis writing objectives.

The guidebook also standardizes procedures, formats, and the writing process, as well as technological provisions, in accordance with the scientific writing code widely used in academic institutions. We hope that this guide will help students achieve the objectives of proposal and thesis writing outlined in the undergraduate program curriculum and the Universitas Airlangga Academic Guidelines. We would like to express our gratitude to the lecturers who have prepared and reviewed this guide.

Surabaya, January 1, 2023

Dean of FST UNAIR,

Prof. Dr. Moh Yasin, M.Si.

NIP. 196703121991021001

# **CHAPTER I**

# **UNDERGRADUATE PROPOSAL MANUSCRIPT**

* 1. **DEFINITION**

A proposal is a written work that students must complete as part of the undergraduate thesis planning process. It is based on a topic that will be evaluated to determine the student’s comprehension of the background of the issue, conceptual framework, and methods for resolving it in a measurable and testable manner.

The purpose of writing a proposal is to allow students to methodically, logically, and systematically prepare for carrying out their research. This ensures that the research projects are carried out correctly and can be finished within the scheduled time.

* 1. **SYSTEMATICS**

The proposal manuscript should be written in Times New Roman font, size 12, with 1.5 line spacing on A4 size HVS paper, 80 grams. The total number of pages for the proposal manuscript should not exceed 100 pages, and it should consist of the following sections:

1. **TITLE** page (*Appendix 1*)
2. **APPROVAL SHEET** page – The page contains approvals from Supervisor 1 and 2 and is acknowledged by the Department Head (*Appendix 2*)
3. **PREFACE** page – The page contains a brief explanation of the purpose of the Proposal preparation and acknowledgments to those who contributed to the successful completion of the proposal
4. **TABLE OF CONTENTS** page – The numbers and names of the chapters are adjusted according to the guide (*Appendix 3*)
5. **LIST OF FIGURES** page (if available) – The page lists the titles of figures and the page numbers where each figure can be found (*Appendix 4*)
6. **LIST OF TABLES** page (if available) – The page contains the titles of tables and the page numbers where each table can be found (*Appendix 5*)
7. **LIST OF ABBREVIATIONS** page (if available) – The page lists all abbreviations used in the manuscript, their full forms and any other necessary explanations. The list of abbreviations should be arranged alphabetically (*Appendix 6*).
8. **LIST OF SYMBOLS** (if any) (*Appendix 7*)
9. **LIST OF APPENDICES** (if any) – The page contains the titles of appendices and the page numbers where each appendix can be found (*Appendix 8*)
10. **CHAPTER I INTRODUCTION**

This chapter consists of several subchapters: Background of the Study, Statements of the Problem, Purpose of the Study, and Significances of the Study.

1. **Background of the Study** provides essential reasons and the necessity for researching the problem. It also explains the position of the researched problem within a broader context.
2. **Statements of the Problem** contains a brief statement of the research problem, presented in question form.
3. **Hypothesis** (if any) provides a brief statement as a tentative answer to the problem that still needs to be proven.
4. **Scope and Limitation** (if any) specifies the specific scope of the research discussed.
5. **The purpose of the Study** details the goals to be achieved in the research.
6. **The significance of the Study** outlines the benefits that will be obtained from the research, whether for the development of science, technology, methodology, or national development.
7. **CHAPTER II LITERATURE REVIEW**

This chapter provides an overview of the theoretical and empirical foundations that support the problem-solving approach. The scope and range of the aspects studied are determined by the depth of the problem analysis. In addition to the theories, further relevant findings from the research with citations to the sources can be included.

1. **CHAPTER III RESEARCH METHODOLOGY**

The research methodology includes the place and time of research, materials and instruments, types and variables of research, data collection methods, and data analysis techniques.

1. **Place and Time of the Research** – Includes the location of the research, whether conducted in a laboratory or field (specifying the administrative region). If necessary, a brief description of the research location and a map can be added. The time of research refers to the duration of the research.
2. **Research Tools and Materials** – includes a description of the materials and instruments used in the research, for example, chemicals, biological materials, or data that can be described in detail. Likewise, the instruments used can be specified. The scientific names must be included for research involving animals, plants, and microbes.
3. **Research Procedures/Flowchart** – provides a detailed description of the research steps, from preparation to data analysis. This section can explain the chemical, physical, biological, and other testing procedures according to the field. The type of experimental design, number of treatments, and replications can be stated for experimental research. Research variables observed and measured, including controlled variables, should also be mentioned. Additionally, the types of research data (nominal, ordinal, interval, and ratio) and their units of measurement can be explained. For data analysis, a complete description of data analysis methods, whether chemical, physical, statistical, or other relevant methods, should be provided.

The procedures (literature study, theoretical development, modeling, etc.) should be sufficiently described for non-experimental research.

1. **Research Schedule** – includes a table of the research schedule.
2. **Research Budget** (if any).
3. **REFERENCES** page

The page contains the list of literature referenced in the proposal manuscript. The reference list should be written following the **APA (American Psychological Association)** format. The procedure for writing the Reference List can be seen in *Appendix 4*

1. **APPENDICES** page

The page contains supporting documents for the proposal. Appendices can be used to present procedures or other information that cannot be abbreviated and will be used in the research.

* 1. **ASSESSMENT SYSTEM**

The details and format for the proposal assessment system are presented in Table 1.1.

**Table 1.1.** Proposal Examination Assessment Format

|  |  |  |
| --- | --- | --- |
| **No.** | **Components of Assessment** | **Maximum Score** |
| 1 | **Seminar Materials*** 1. Systematics of writing and language
	2. Accuracy of scientific content/literature
	3. Research Methodology
 | **10****20****10** |
| 2 | **Presentation*** 1. Systematics of presentation, including visual aids (OHP, whiteboard, and microphone) and adherence to the presentation time
	2. Use of proper and correct Indonesian language
	3. Appearance and demeanor, language proficiency, and accuracy of answers to questions
 | **10****10****40** |
| **Total** | **100** |

The final assessment result of the proposal examination will be one of the following three options:

1. Eligible to be taken as thesis material
2. Eligible to be taken as thesis material, but with the following conditions:
	1. Revise the proposal manuscript (for perfection of the manuscript)
	2. Revise the proposed scientific concept
	3. Revise the research methodology
	4. Revise the research visibility
3. Not eligible to be taken as thesis material and must be reviewed with the same or a different topic

If the proposal is deemed to pass with conditions, all correction mechanisms are entrusted to the Supervisors. If the proposal is deemed not eligible, upon the Supervisors’ suggestion and with the Examiners’ approval, the proposal may be re-examined in the following semester. This re-examination opportunity is only available once. All examination decisions must be communicated to the student at the end of the Proposal Examination.

Students who passed the Proposal Examination must submit the revised and approved Proposal manuscript to the Department for educational administration purposes within one month. If the student does not resubmit the research proposal within one (1) month from the day of the Proposal Examination, the thesis research proposal is considered canceled or rejected, and the student is deemed to have failed their studies. The proposal manuscript must be used as a reference when conducting research and writing the thesis. Any changes to the Proposal manuscript must be made with the knowledge and approval of the Supervisors. In exceptional cases, resolution is based on the policy of the Program Study Coordinator. The completed and approved Thesis Proposal manuscript should be bound in a soft cover with a light brown color, A4 size.

# **CHAPTER II**

# **UNDERGRADUATE THESIS MANUSCRIPT**

**2.1. DEFINITION**

One of the requirements for obtaining a bachelor’s degree (S-1) is completing an undergraduate thesis. An undergraduate thesis is student’s written work on the results of research (exploratory, descriptive, or experimental) conducted following a proposal that has been evaluated and approved. The objective of writing a thesis is to train students on how to methodically, logically, and systematically present their research findings into a written scientific work. Guidelines for drafting the thesis—whether they are based on planning or modeling results—are required to accomplish this goal.

**2.2. SYSTEMATICS**

The undergraduate thesis manuscript should be written in Times New Roman font, size 12, with 1.5 line spacing on A4 size HVS paper, 80 grams. The total number of pages for the thesis manuscript should not exceed 200 pages and should consist of the following sections:

* + 1. **TITLE** page (*Appendix 9*)
		2. **APPROVAL SHEET** page – contains approvals from Supervisor 1 and 2 and acknowledged by the Head of Department (*Appendix 10*)
		3. **GUIDELINES FOR USING THE THESIS** (*Appendix 11*)
		4. **ABSTRACT** page – briefly describes the research objectives, methods, and results. The abstract should be no more than 200 words and include 3-5 keywords placed at the bottom of the paragraph. The abstract is single-spaced and written in Indonesian (*Appendix 12*)
		5. **ABSTRACT** page in English – contains the translation of the Indonesian abstract (*Appendix 13*)
		6. **PREFACE** page – contains a brief explanation of the purpose of writing the thesis and acknowledgments to those who contributed to the successful completion of the thesis
		7. **TABLE OF CONTENTS** page – with the number and titles of chapters adjusted according to the guidelines (*Appendix 3*)
		8. **LIST OF FIGURES** page – containing the titles of figures and the page numbers where each figure can be found (*Appendix 4*)
		9. **LIST OF TABLES** page – containing the titles of tables and the page numbers where each table can be found (*Appendix 5*)
		10. **LIST OF ABBREVIATIONS** page (if any) (*Appendix 6*) – listing all abbreviations used in the manuscript, along with their full forms and any necessary explanations. The list of abbreviations should be arranged alphabetically
		11. **LIST OF SYMBOLS** page (if any) (*Appendix 7*)
		12. **LIST OF APPENDICES** page (if any) (*Appendix 8*) – containing the titles of appendices and the page numbers where each appendix can be found
		13. **CHAPTER I INTRODUCTION**

This chapter consists of several subchapters: Background of the Study, Statements of the Problem, Purpose of the Study, and Significances of the Study.

1. **Background of the Study** – Provides essential reasons and the necessity for researching the problem. It also explains the position of the researched problem within a broader context.
2. **Statements of the Problem** – Contains a brief statement of the research problem, formulated as a question.
3. **Hypothesis** (if any) – Contains a brief statement as a tentative answer to the problem, which still needs to be proven.
4. **The Scope and Limitation** (if any) – Contains the specific scope discussed in the research.
5. **Purpose of the Study** – Details the goals to be achieved in the research.
6. **Significances of the Study** – Outlines the benefits that will be obtained from the research, whether for the development of science, technology, methodology, or national development.
7. **CHAPTER II LITERATURE REVIEW**

This chapter provides an overview of the theoretical and empirical foundations that support the problem-solving approach. The depth and breadth of the aspects studied depend on the sharpness of the problem analysis. Besides theories, other relevant research findings can also be presented with their sources cited.

1. **CHAPTER III RESEARCH METHODOLOGY**

The research methodology section includes the place and time of research, materials and instruments, types and variables of research, work procedures or data collection methods, and data analysis methods.

1. **Place and Time of the Research** – specifies the location of the research, whether conducted in a laboratory or field (with the administrative region described). If necessary, a brief description of the research location and a map can be added. The research time refers to the period during which the research is conducted.
2. **Research Tools and Materials** – describes the materials and tools used in the research. For example, chemicals, biological materials, or data can be described in detail. Likewise, the instruments used can be specified. For research involving animals, plants, and microbes, their scientific names must be included. Chemical substances should be named (not just their formulas), and the degree of purity should be mentioned.
3. **Research Procedures/Flowchart** – provides a detailed description of the research steps, from preparation to data analysis. This section can explain the chemical, physical, biological, and other testing procedures according to the field. The type of experimental design, number of treatments, and replications can be stated for experimental research. Research variables observed and measured, including controlled variables, should also be mentioned. Additionally, the types of research data (nominal, ordinal, interval, and ratio) and their units of measurement can be explained. For data analysis, a complete description of data analysis methods, whether chemical, physical, statistical, or other relevant methods, should be provided.

For non-experimental research, the procedures (literature study, theoretical development, modeling, etc.) should be sufficiently described.

1. **RESULTS AND DISCUSSION**

This chapter contains the research findings, data analysis results, and an integrated discussion without being broken into subheadings. However, all measurable or observed variables must be discussed. Research findings can be presented in text or figures, especially for processed data. Data analysis results can be presented by summarizing the hypothesis testing results. The discussion contains the interpretation and explanation of the research findings, data analysis, and comparisons with previous relevant research and/or theoretical references supporting the data analysis.

1. **CONCLUSION AND SUGGESTION**

The **conclusion** contains a brief statement about the results derived from the problem formulation. **Suggestion** include the researcher’s opinions on the possibilities, further utilization of the research findings, and suggestions for future research to address the weaknesses identified in the proposed research concept. Conclusions and recommendations should be written in separate subsections.

1. **REFERENCES**

This section contains a list of literature cited in the thesis manuscript. The references should be written following the **APA** (**American Psychological Association**) format. Instructions for writing the references can be found in *Appendix 4*.

1. **APPENDICES**

This section includes supporting documents for the thesis. Appendices can be used to present procedures or other information that cannot be condensed and will be used in the research.

1. **SCIENTIFIC JOURNAL MANUSCRIPT**

The scientific journal manuscript is a draft of a journal article based on the research findings of the undergraduate thesis. An example of a scientific journal manuscript can be found in *Appendix 14*.

**3.3. EVALUATION SYSTEM**

The thesis manuscript is evaluated during the Thesis Examination, which aims to determine that the thesis produced from the undergraduate education process provides evidence that the prospective graduate has acquired the competencies of a bachelor and is eligible to receive the bachelor’s degree. There are two types of evaluations: the evaluation of the thesis content (Table 3.1) and the evaluation of the thesis presentation (Table 3.2). The evaluation of the thesis content also allows supervisors and examiners to provide suggestions for improving the manuscript to ensure the thesis’s completeness.

**Table 3.1.** Thesis Content Evaluation Format

|  |  |  |
| --- | --- | --- |
| **No** | **Assessment Components** | **Maximum Score** |
| 1 | Abstract/Summary | 10 |
| 2 | Quality of Manuscript and Scientific Article | 15 |
| 3 | Depth of Theoretical Foundation | 20 |
| 4 | Research Methodology | 15 |
| 5 | Analysis of Results and Language | 30 |
| 6 | Conclusion and Recommendations | 10 |
| **Total** | **100** |

**Table 3.2.** Thesis Presentation Evaluation Format

|  |  |  |
| --- | --- | --- |
| **No** | **Assessment Components** | **Maximum Score** |
| 1 | Completeness and Appearance of PPT | 15 |
| 2 | Mastery of Scientific Material and Research Methods | 40 |
| 3 | Objectivity in Responding to Questions/Defending Opinions | 10 |
| 4 | Comprehensive Knowledge of Related Fields | 35 |
| **Total** | **100** |

The assessments are then reported in the Undergraduate Thesis Examination Report, with the following grade composition:

**A. THESIS CONTENT**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Supervisor I | : | (Score 0 – 100) | ....................x (40%) | = | ............... |  |
| Supervisor II | : | (Score 0 – 100) | ....................x (30%) | = | ............... |  |
| Examiner I | : | (Score 0 – 100) | ....................x (15%) | = | ............... |  |
| Examiner II | : | (Score 0 – 100) | ....................x (15%) | = | ............... | + |
|  | **Score A** | = | ............... | x 60% |
|  | = | ............... |  |

**B. THESIS EXAMINATION**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Supervisor I | : | (Score 0 – 100) | ....................x (25%) | = | ............... |  |
| Supervisor II | : | (Score 0 – 100) | ....................x (25%) | = | ............... |  |
| Examiner I | : | (Score 0 – 100) | ....................x (25%) | = | ............... |  |
| Examiner II | : | (Score 0 – 100) | ....................x (25%) | = | ............... | + |
|  | **Score B** | = | ............... | x 40% |
|  |  |  | = | ............... |  |
|  |  | **Total (A + B)** | = | ............... |  |
|  |  | **Grade (in letter)** | = | ............... |  |

Based on the undergraduate thesis grades, students can be classified into three categories:

1. **PASSED**
2. **PASSED WITH CONDITIONS** – require revisions in the organization and writing or repeating part of the experiment that is doubtful/insufficient within 21 days from the examination day.
3. **FAILED** – eligible to retake the exam in the same or the next period.

After defending the undergraduate thesis in the examination, the bachelor candidate must submit revisions based on the feedback given by the examiners and supervisors. The bachelor candidate who has completed revisions must obtain approval from all members of the examination board (supervisors and examiners). Once revised and approved by the examination board, the Undergraduate Thesis Manuscript should be bound in a light brown hardcover (Number......) A4 size.

# **CHAPTER III**

# **TECHNICAL GUIDELINES FOR MANUSCRIPT WRITING**

This chapter provides guidelines for preparing the **Undergraduate Thesis Proposal** and **Undergraduate Thesis Manuscript** in FST UNAIR’s Undergraduate Program. This chapter contains general guidelines for materials and language used, typing methods, numbering systems, citation of references, presentation of tables and figures, building the references, footnotes, and quotations.

**3.1. GENERAL REQUIREMENTS**

1. The manuscripts are written in standard Indonesian language and refer to the Great Dictionary of the Indonesian Language (KBBI).
2. For international students, manuscripts can be written in English by following the general requirements and all the rules in this guidebook.
3. The manuscripts must be written in formal/scientific writing conventions.
4. Abbreviations such as “*yg*” (which), “*dsb*” (etc.), should not be used, except in quotations, for example, “*dkk*” for “*dan kawan-kawan*” (and others), “*th*” for “*tahun*” (year).
5. The paper size is A4, 80 grams.
6. The manuscripts are written using: left margin of 3 cm, right, top, and bottom margins of 2.5 cm.
7. The first letter of the new paragraph is indented 1 cm from the border of the left margin.
8. The font used is Times New Roman 12 pt. for chapter titles and other sections, unless specified for particular sections, such as the cover page.
9. Line spacing: 1.5 lines.
10. The spacing between chapter titles to sub-sections is 2x 1.5 lines; the spacing between subtitles is 1x 1.5 lines.
11. All headings are written without using a period (.), but commas (,) can still be used if needed.
12. The use of footnote(s) must be avoided.
13. Page Numbers
* Bottom of the page (footer), center alignment.
* Page numbers are not displayed on the cover page and chapter title pages.
* The first sections of the manuscript (before Chapter I) use lowercase roman numerals (i. ii, iii, and so on).
* Main sections (main contents) using Arabic numerals (1, 2, 3, 4, and so on).
* The appendices section uses appendix order (Appendix I, Appendix II, Appendix III, and so on) without page numbers.
1. Manuscripts are bound and given cover using colored paper as followings:
	* 1. For proposal manuscript: light brown with soft cover binding.
		2. For undergraduate thesis manuscript: light brown with hard cover binding.
2. The manuscripts are duplicated with the following conditions:

**For Undergraduate Proposal:**

* 1. During the examination, the manuscripts are duplicated according to the number of examiners (2 supervisors and 1 examiner).
	2. After the examination, the revised manuscripts (that are already approved by the academic advisor) are duplicated by 1 (one) copy and then submitted to the Department. The student should keep 1 (one) copy.

**For Undergraduate Thesis:**

* 1. During the examination, the manuscripts are duplicated according to the number of examiners (2 supervisors and 2 examiners).
	2. After the examination, the revised manuscripts (that are already approved by the academic advisor) are duplicated by 1 (one) copy and then submitted to the Department. The student should keep 1 (one) copy.
1. Plagiarism Check for Manuscripts

Examination manuscripts, starting from those for qualification examinations, must include the results of a plagiarism check (with a maximum similarity level of 25% - excluding the References). The plagiarism check results are required to schedule the examination date.

**3.2. COVER AND TITLE PAGES**

The formats for the Cover Page (outer cover) are the same as the formats for the Title Page (inner cover). The arrangements from the top to bottom of the page are as follows:

* + - 1. **Statement of type of manuscript**

Font type and size: Times New Roman Bold, all capitalized at 14 pt.

* + - 1. **Title of the manuscript**
* Word Limit: No more than 30 words (including conjunctions and articles) and centered on the page.
* Font type and size: Times New Roman Bold, all capital letters, size 18 pt. For technical terms or scientific names with specific conventions, the formatting should comply with the standards of the respective field.
	+ - 1. **Logo of Universitas Airlangga**

Position: Centered on the page below the manuscript title, before the student’s name. The emblem should have a diameter of 6 cm (downloaded from this link <https://www.unair.ac.id/wp-content/uploads/filr/123981/Logo%20UNAIR.jpg>).

* + - 1. **Student name and number**

Font type and size: Times New Roman Bold, all capitalized at 14 pt. The student number is written below the student’s name.

* + - 1. **Identity of the institution and year**

Written hierarchically, starting from the name of the study program, faculty, university, and year the manuscript was written. Font size 14 pt. - Font size: 14 pt.

**3.3. WRITING FORMAT FOR THE FIRST SECTIONS OF THE MANUSCRIPT**

All titles are written in Times New Roman Bold, all capitalized at 12 pt. The following pages are written in Times New Roman at 12 pt. using letters that are adjusted to the rules of the Indonesian language writing format.

**3.4.** **WRITING FORMAT FOR CHAPTERS, SUBCHAPTERS, AND SECTIONS**

The division of chapters into smaller sections is limited to three levels (digits). If further subdivision is necessary, the sections are not numbered but remain in bold print.

* + - 1. **Chapter Numbers and Titles**
				* Chapter numbers and titles are written in Times New Roman Bold, capital letters, size 12 pt.
				* Chapter numbers are written using Roman Numerals.
				* The chapter titles are written below the chapter numbers with 1 line spacing.
			2. **Subchapter Numbers and Titles**
				* Subchapter numbers are written with Arabic numerals which are composed of 2 (two) numbers separated by “.” (period). The first number is the chapter number and the second number is the sub-chapter number.
				* Subchapter titles are written in Times New Roman Bold, with the first letter for each word in the title written in capital, size 12 pt.
			3. **Sub-subchapter Numbers and Titles**
				* The sub-subchapter numbers are written in Arabic numerals which are composed of 3 (three) numbers separated by “.” (period). The first number is the chapter number, the second is the subchapter number, and the third is the serial number of the sub-subchapters.
				* Sub-subchapter titles are written in Times New Roman Bold, with the first letter for each word in the title written in capital, size 12 pt.

It would be better if the sub-subchapters are not divided again. If some details are still needed to be written in a list, use the numbering format in lowercase letters (not capitalized) or bullets (only “-”).

**3.5.** **NUMBERS AND UNITS**

The formats for writing numbers and units are as follows:

* 1. **Numbers in the manuscript**

Numbers in the text are written in numbers, except at the beginning of the sentence which is written in letters.

* 1. **Decimal numbers**

Decimal numbers are marked with commas, not with a period. For example, five and a half kilograms is written: 5,5 Kg. To avoid confusion with the slash (/), please avoid writing fractional numbers with slashes of the same size (to express half a meter, it is better to write 0,5 m or at least ½ m, not 1/2 m).

* 1. **Units**

Units are written in their official abbreviations without dot (.) behind them, for example, 10 kg, 70 cm, 100 m2.

**3.6. TABLES**

Each table must be cited in the manuscript and have sufficient explanation so that the table can stand alone. The table numbers and titles are located above the table, while other information is located below the table but remains an integral part of the table.

Example:

**Table 1.** The table title is aligned with the left edge of the table

|  |  |
| --- | --- |
| Parameters | **Number of Points** |
| **I** | **II** | **III** | **IV** | **V** |
| A | X | M | P | S | A |
|  | X | M | P | S | A |
|  | X | M | P | S | A |
| B | Y | N | Q | T | B |
|  | Y | N | Q | T | B |
|  | Y | N | Q | T | B |
| C | Z | O | R | U | C |
|  | Z | O | R | U | C |
|  | Z | O | R | U | C |
| Total | **100** | **75** | **240** | **100** | **100** |

* + - 1. **Table Form**
* The table uses only horizontal lines, no vertical lines.
* The top and bottom lines are thicker than the other horizontal lines.
* The table is arranged with 1.15 line spacing.
	+ - 1. **Table Title**
* The table title is written above the table with a space of 1 line and aligned to the left border of the table.
* The table titles are written like writing regular sentences: the capital letter is used only at the beginning of the sentence.
* The arrangement is **Table** **table number.** Title.

The word “Table” and the table numbers are written in bold and ended with a “.” (period).

* + - 1. **Table Captions or Notes**

If the symbols, words, or numbers need special information in the table, the information is written below the table and is a part of the table.

* + - 1. **Table Numbering**

The table numbers are written in Arabic numerals and consist of two or more numbers. The first number indicates the chapter number where the table is located, and the second number indicates the serial number of the tables in the chapter.

* + - 1. **Table Size and Placement**

If a table (including the title and description) is bigger than the size of one page, it must be placed in the appendices section, or the table is divided into two or more tables. A table should not be presented on different pages.

* + - 1. **Table Citations**
* If the data in the whole table are quoted from a single source, then the source is written at the bottom of the table or after the caption. This source is included in the reference, following the writing format stated in this guidebook.
* If the data in the table are quoted from different sources, then the sources of this library are written in the rightmost column. The sources are included in the references, following the writing format stated in this guidebook.

**3.7. PRESENTATION OF FIGURES, GRAPHICS, AND OTHER ILLUSTRATIONS**

Each figure must be cited in the manuscript and have sufficient explanation so that it can stand alone. The number, title, and descriptions of the figure are placed outside the frame, below the figure, but are still a part of the figure.

* + - 1. **Figure Formats**

If several images, graphics, or other illustrations are presented together, each of them is marked with a capital letter, in Times New Roman 12 pt.

* + - 1. **Figure Titles**
* The figure titles are written below the image with 1 line space.
* The figure titles are written like regular sentences, the capital letter is used only at the beginning of the sentence, and the titles end with “.” (period).
* The arrangement is **Figure number.** Image title.

The word “Figure” and the figure numbers are written in bold and ended with a “.” (period).

* + - 1. **Figure Captions (Legends)**

If there is a symbol in the image, the caption is written after the figure title. The legend can be placed in the caption of the figure or as a part of the figure.

* + - 1. **Figure Numbering**

Figure numbers are written in Arabic numerals and consist of two or more numbers. The first number indicates the chapter number where the figure is located, the following number indicates the serial number of the figure in the chapter.

* + - 1. **Figure Size and Placement**

If a figure (including the title and captions) is bigger than the size of one page (e.g., the picture of a large map), it must be placed in the appendices section or divided into two or more figures. A figure should not be presented on different pages.

1. **Figure Citations**

If a figure, either in whole or in part, is quoted from one source, then the source is written in brackets after the caption. This source is included in the references, following the writing format stated in this guidebook.

**Example:**

**Figure 5.1.** The width of the title is approximately the same as the image.

**Figure 5.2.** If the image is based on data or images from other authors, the source is mentioned and written in brackets (Sunata, 2004).



**Figure 5.3.** Figures arranged in a row are coded alphabetically and given a general title, then A: image title A; B: image title B; C: image title C.

**3.8. PRESENTATION OF CHEMICAL FORMULAS AND OTHER FORMULAS**

Chemical formulas must be cited in the manuscript. Chemical formulas can be written as part of a sentence or paragraph or written on a separate line. The following are the format for the presentation of chemical formulas when written in separate lines:

1. **Presentation Technique**

The presentation of chemical formulas, reaction equations, and other formulas are written in formats and rules that are valid in the scientific field.

1. **Numbering**

The chemical formulas, reaction equations, and other formulas mentioned in the manuscript must be numbered. Mathematical equation numbers are written in line with the equations, placed on the right side of the page, and written in bold so they will not be considered part of the equation. The equation numbers are composed of two or more numbers. The first number indicates the chapter number where the equation is located, the following number indicates the serial number of the equation in the chapter.

**3.9. WRITING DEFINITIONS, THEOREMS, COROLLARIES, LEMMAS, AND EXAMPLES**

In certain fields of science, such as mathematics, there are terms and specific presentation methods for definitions, theorems, effects, corollaries, and lemmas. The technique of writing the presentation is adjusted to the rules that apply in each respective field of science and must be numbered. The presentation number is written two lines space after the word definitions, theorems, effects, corollaries, lemmas, or examples.

1. **Presentation Technique**

Mathematical equations are written in formats and rules that are valid in the scientific field.

1. **Numbering Theorems, Proofs, and Lemmas**

Numbers are written in Times New Roman, bold, at size 12 pt. The numbers are composed of two numbers. The first one indicates the number of the chapter in which the article is located, and the next indicates the serial number of the article in that chapter. Each type of presentation has its serial number.

1. **Numbering Equations**

The mathematical equations presented must be numbered. The number of the mathematical equation is written on one line with the mathematical equation aligned on the right side of the page and written in bold; thus, the numbers given will not be considered part of the equation. The numbering is composed of two or more numbers. The first number indicates the chapter number where the equation is located, and the following number indicates the serial number of the equation in that chapter.

**3.10. CITATIONS**

Literature citations or references mentioned in manuscripts (in sentences or paragraphs) follow the Harvard referencing style. Citations using footnotes are not allowed. Anonymous and personal communications are strictly limited with certain conditions (supervisor’s permission).

1. **Anonymous Writers**

Anonymous references are sources with unidentified or unknown writers. These kinds of references should be avoided as much as possible in order to make tracing easier. Sources published by an institution are not anonymous, so the name of the institution or editor is treated as the author’s name. Please use primary sources as much as possible.

1. **Name and year in text citation**
* Only surnames and followed by the year of publication are listed in brackets.
* If the surname is not clear or does not exist, then the last word of the author’s name is considered as the surname unless the author has stated otherwise.
1. **There are two or more than two authors**
* If the sources are written by two people, both surnames are included.
* If the sources are written by more than two people, only the surname of the first author is presented, given a comma, and followed by “et al.”, (year).
1. **Citation Abbreviation**

The students must choose one abbreviation between *dkk* (in Indonesian) and etc. (in English). Only one of the abbreviations with the same meaning must be selected and used consistently in the same undergraduate thesis manuscript.

1. **More than One Citation**

If a statement refers to more than one library source, the library sources must be separated by a semicolon (;).

1. **Citation from Citation**

A citation taken from other citations, not from the original sources, should be avoided as much as possible. If there is no other option, there are several formats to write the citations, depending on how the sentence is written.

Here are the examples of how to cite it:

In his work, Paul Schmid-Hempel (2011) cites the research results of Martin et al. 2001. The opinion of Martin et al. will be quoted. The choices of citation methods are as follows:

* As quoted by Schmid-Hempel (2011), Martin et al. (2001) stated that death in 25 bird species due to parasites……….
* In Schmid-Hempel (2011), Martin et al. (2001) stated that death in 25 bird species due to parasites……….
* Death of 25 bird species due to parasites……. (Martin et al., 2001 in Schmid-Hempel, 2011).

**3.11. REFERENCES**

The citations listed in the references are the ones that are actually cited in the manuscripts.

1. **References Format**

Basically, the literature used as a reference is arranged in alphabetical order. The letters used as references are the first letters of the first author’s surnames.

* If the authors are the same person, then independent writing takes precedence over co-authoring.
* If the year is the same, the earlier publication takes precedence.
* If there is a second author, the first letter of the second author’s surname is also used as a sorting reference.
1. **Writing Names of Authors and Editors**
* Names other than family names are abbreviated.
* If the surname is unclear, does not exist, or is unknown, then the last word of a person’s name is treated as a surname unless the author has stated otherwise.
* In the references, the format is that the surname comes first, ends with a comma, and continues with the abbreviation of the first name and then the second name if any.
* Surnames can be more than one word connected by a hyphen ‘-’, in this case, the two words are treated as one word.
* If the surname has an article, such as de Voght, van House, or McNamara, the article is considered a unit with the base name.
1. **Writing Names of Books, Journals, and Other Libraries**

In references, the cited sources such as books, journals, and other publications are written according to the instructions given by the publishers. Some journals should be abbreviated, while other journals do not. The formats follow the instructions for citation from the publisher.

To distinguish between book titles, article titles, and collections of articles in the form of journals or books, the format is determined as follows:

* **Book**: the book title is written in bold, regular font style (not italicized).
* **A book composed of several papers or articles**: the title of the cited paper must be written. The title of the paper is written in regular font style (not italicized). The title of the book is written in italics, with a description of the volume, number (if composed of several volumes and numbers), and the page where the article is cited. The name of the book editor is written before the book title with the caption “(Ed.)”.
* **Papers in a journal**: The title of the paper is written in regular font style, and the name of the journal or periodical is written in italics with a description of the volume, number, and page where the article is cited.

There are several types of sources. Five sources that are often used are books, books with editors (composed of several and each chapter includes the name of the author), journals or periodicals, proceedings, research reports (not published but stored in a library), and publications of an institution or agency. One of the purposes of writing references is to make the sources cited in the manuscript easier to be traced, thus the format must clearly include the name of the author, publisher, or place of collection if the source is not published.

**3.12. EXAMPLES OF WRITING REFERENCES**

1. **Books**
* Mesterton-Gibbons, M. 1989. *A Concrete Approach to Mathematical Modeling.* Addison-Wesley Publishing Company Inc., Redwood City. pp.: 127-162.

(Note: 127-162 is the page where the cited chapter is written).

* Irawan, B. 2010. *Genetika; penjelasan mekanisme pewarisan sifat*. Airlangga Univesity Press. p. 318.
1. **Article in Book**

Thompson, R. 1990. Generalized Linear Models and Applications to Animal Breeding, in Gianola, D. and Hammond, K (Ed): *Advances in Statistical Methods for Genetic Improvement of Livestock* series of *Advanced Series in Agricultural Sciences*, 18: 312-328. Springer-Verlag, Berlin.

1. **Translated Book**

Sokal, R.R., Rohlf, F.J. 1991. *Pengantar Biostatistik*, 2nd edition, (translated by: Nasrullah), Gadjah Mada University Press, Yogyakarta

1. **Serial Monographs**
* Dall, W. 2001. Australian Species of Aristeidae and Benthesicymidae (Penaeoidea: Decapoda). *Memoirs of the Queensland Museum* **46** (2): 409-441. Brisbane. ISSN 0079-8835.
* Davie, P.J.F. 2002. Crustacea: Malacostraca: Eucarida (Part.2). Decapoda-Anomura, Brachyura. *Zoological Catalogue of Australia* 19.3B. CSIRO Publishing, Collingwood, Australia.
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1. **Articles in Journal**
* Ardiansyah, S., Irawan, B., Soegianto, A. 2012. Effect of Cadmium and Zinc in Different Salinity Levels on Survival and Osmoregulation of White Shrimp (*Litopenaeus vannamei* Boone). *Marine and Freshwater Behaviour and Physiology*, 45(4): 291-302.
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* Irawan, B., Kijima, A. 1994. Difference in Salinity Requirement among the Three Estuarine Crabs Species, *C. dehaani*, *H. tridens* and *H. japonica* (Brachyura: Grapsidae). *Tohoku Journal of Agricultural Research*, 44(1-4): 39-47.
1. **Articles in Proceeding**

Writing order: Author name, year, article title, *Seminar Proceedings Title* (must be italicized). Editor name (if any). Seminar organizer (the institution/agency name), the city where the seminar is held (name of the country, if held outside Indonesia). Page number. ISBN/ISSN.

Example:

* Winarni, D., Ismudiono, Suwandi, A., Darmanto W. 2009. The Use of Java Ginseng (*Talinum paniculatum* Gaertn.)Root for Testosterone Level Recovery. *Proceedings of the 2nd International Conference and Workshop on Basic and Applied Science*. Vol.: IV (Biology). Johor Bahru (Malaysia). pp. 21-25. ISBN: 978-983-9805-76-5.
1. **Library in the form of Undergraduate Thesis/Thesis/Dissertation**

Writing order: Author name, year, title, *Undergraduate Thesis/Thesis/Dissertation* (must be italicized), name of faculty/post-graduate program, university, and city.

* Hardjono, S., 2012, Modifikasi Struktur 1-(Benzoiloksi) Urea dan Hubungan Kuantitatif Struktur – Aktivitas Sitotoksiknya, *Dissertation*, Fakultas Sains dan Teknologi, Universitas Airlangga, Surabaya.
1. **References in the form of Research Reports**

Writing order: researcher name, year, the title of the research report, *name of the research report* (must be italicized), name of the research project, name of institution, and city (Saved at: name of the institution; city).

Notes: The references can be compiled using Mendeley with the following conditions: *insert citation* using **Harvard Reference Format** or *insert bibliography* using **APA** **(American Psychological Association)**.

# **APPENDICES**

## Appendix 1. Cover page on Proposal

**PROPOSAL**

**THE UTILIZATION OF LOCAL GRAPES AS ANTICANCER AND ANTIOXIDANT MATERIAL**

****

**INDAH SERASI**

**NIM 181221098**

**UNDERGRADUATE PROGRAM IN CHEMISTRY**

**DEPARTMENT OF CHEMISTRY**

**FACULTY OF SCIENCE AND TECHNOLOGY**

**UNIVERSITAS AIRLANGGA**

**2022**

## Appendix 2. Approval Sheet page

APPROVAL SHEET FOR PROPOSAL

Title : The Utilization of Local Grapes as Anticancer and Antioxidant Material

Author : Indah Serasi

Student ID : 181221098

Supervisor I : Dr. Tumbuh Prakoso M.Si.

Supervisor II : Drs. H. Aman Santosa, M.Si.

Date of Seminar : ………………….

Approved by:

|  |  |
| --- | --- |
| Supervisor I, | Supervisor II, |
|  |  |
| Dr. Tumbuh Prakoso, M.Si. | Drs. H. Aman Santosa, M.Si. |
| NIP.................................. | NIP............................................... |

Acknowledged by:

Head of the Department of Chemistry

Faculty of Science and Technology

Universitas Airlangga

Dr. Teguh Pendirian, M.Si.

NIP...............................................

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## Appendix 5. Undergraduate Thesis Front Cover

**EIGENVALUES AND EIGENVECTORS OF THE GRAPH REPRESENTATION MATRIX OF THE DIHEDRAL GROUP**

**UNDERGRADUATE THESIS**



**SATRIO GAGAH PRAKOSO**

**NIM 181221099**

**UNDERGRADUATE PROGRAM IN MATHEMATICS**

**DEPARTMENT OF MATHEMATICS**

**FACULTY OF SCIENCE AND TECHNOLOGY**

**UNIVERSITAS AIRLANGGA**

**2022**

## Appendix 6. Example of Declaration Page

EIGENVALUES AND EIGENVECTORS OF THE GRAPH REPRESENTATION MATRIX OF THE DIHEDRAL GROUP

AN UNDERGRADUATE THESIS

Submitted as Partial Fulfillment of the Requirements

for the Bachelor’s Degree in Mathematics

Faculty of Science and Technology

Universitas Airlangga

Satrio Gagah Prakoso

NIM 181221099

Approved by:

|  |  |
| --- | --- |
| Supervisor I, | Supervisor II, |
|  |  |
| Dr. Harum Melati, M.Si. | Prof. Dr. Suyanti Bersinar, M.Si. |
| NIP.................................. | NIP............................................... |

## Appendix 7. Approval Page

**UNDERGRADUATE THESIS APPROVAL PAGE**

Title : Eigenvalues and Eigenvectors of the Graph Representation Matrix of the Dihedral Group

Author : Satrio Gagah Prakoso

NIM : 181221099

Examination Date : ........................

Approved by:

|  |  |
| --- | --- |
| Supervisor I, | Supervisor II, |
|  |  |
| Dr. Harum Melati, M.Si. | Prof. Dr. Suyanti Bersinar, M.Si. |
| NIP.................................. | NIP............................................... |

Acknowledged by:

Head of the Department of Mathematics

Faculty of Science and Technology

Universitas Airlangga

Dr. Bangga Wijaya, M.Si.

NIP.....................................

## Appendix 8. Undergraduate Thesis Usage Guidelines Page

**GUIDELINES FOR THESIS USAGE**

This undergraduate thesis is not published, but this undergraduate thesis is available at the libraries of Universitas Airlangga. It is permitted for others to use as a reference, but any citation must have the author’s permission and properly acknowledge the source following academic standards. This undergraduate thesis document is the property of Universitas Airlangga.

## Appendix 9. Abstract (in Bahasa Indonesia)

**ABSTRAK**

……………………………………………………………………………………………..………………………………………………………………………………………………….…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………...

*Kata Kunci: ………………., ………………, …………………..*

## Appendix 10. Abstract (in English)

**ABSTRACT**

……………………………………………………………………………………………..………………………………………………………………………………………………….…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………...

*Keywords: ………………., ………………, …………………..*

## Appendix 11. Preface

**PREFACE**

……………………………………………………………………………………………..………………………………………………………………………………………………….…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………………………………………………………..…………………………………………………

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Surabaya, October 27, 2022

Author,

Mawar Harum Mewangi

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## Appendix 16. Summary

**SUMMARY**

**THE IMPACT OF WATER QUALITY ON AQUATIC LIFE**

**IN KALI MAS RIVER, SURABAYA**

Armandito Satrio, Tumbuh Prakoso, and Aman Santoso

Undergraduate Program in Biology, Department of Biology,

Faculty of Science and Technology, Universitas Airlangga, Surabaya

Introduction

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

Research Methods

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

Results and Discussion

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

Conclusion and Recommendations

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

References

……………………………………………………………………………………………………………………………………………………………………………………………………………………………………………

Notes:

1. The summary contains an overview of the thesis summarized into 5-10 pages.

2. The summary is written in the format of a journal article published by FST Unair.

3. The summary is written under the guidance of the Supervising Lecturer.

4. The name of the thesis author is followed by the names of the supervising lecturers.

## Appendix 17. Table

Table 4. LT Value of Bone Fracture Latex Against *Aedes aegypti* Larvae Instar II and III

|  |  |  |
| --- | --- | --- |
| Replication | LTSO Value (95% CL) | LT90 Value (95% CL) |
| Instar II | Instar III | Instar II | Instar III |
| 1 | 11,29(10,47 -12,18) | 16,53(15,5917,59) | 14,45(10,9219,11) | 14,77(12,6217,30) |
| 2 | 12, 37(11,10-13,79) | 16,07(15,1017,09) | 14,14(8, 95-22,32) | 14,65(12,5617,09) |
| 3 | 14,62(13,65-15.65) | 14,69(17,6428,22) | 12,38(9,87-15,53) | 14,46(11,0019,00) |
| 4 | 13,47(10,73-16,90) | 15,82(14.9016,79) | 16,99(11,9324,21) | 15,91(13,0719,37) |
| 5 | 12,64(11,63-14,73) | 15,48(15,4817,56) | 23,57(18,9829,96) | 23,30(18,8931,16) |

Notes:

LT = lethal time

CL = confidence limits

Explanation:

* If the table is taken from another source or secondary data, the source should be cited below the table, on the left side.
* If the table title spans more than one line, the line spacing should be single-spaced.

## Appendix 18. Figure



**Figure 2.1.** Absorbance in the UV Spectrum of DPPH Radicals (Z, violet color) and Non-Radical DPPH (ZH, yellow color)