



USK
UNIVERSITAS
SYIAH KUALA

2024

FINAL PROJECT AND THESIS

GUIDELINES

**Faculty of Mathematics and Natural Sciences
Universitas Syiah Kuala
2024**

FOREWORD BY THE DEAN

The Final Project and the Thesis constitute compulsory courses that must be completed by undergraduate and master's students at the Faculty of Mathematics and Natural Sciences (FMIPA) of Universitas Syiah Kuala (USK). To date, the implementation of these two courses has been governed by the guidelines established in 2019. Nevertheless, in light of evolving academic practice, adjustments have become necessary in order to accommodate new policies and to ensure coherence with the learning-outcome statements prescribed by the Indonesian National Qualifications Framework (KKNI) at each level of education. These learning-outcome statements furthermore enable the assessment procedures for every stage of the Final Project and Thesis to be defined in a more measurable and transparent manner. The new guidelines additionally afford study programmes greater flexibility in appointing supervisors and examiners, including those drawn from external partners such as other universities, research institutes, government agencies, or industry, provided that the established eligibility requirements are fulfilled. Further technical changes also encompass the refinement of the Final Project Information Management System (SIMATA) so as to accommodate the revisions introduced in the new guidelines.

The drafting process commenced with a series of discussions among the Final Project and Thesis coordinators of every study programme. The draft was subsequently reviewed by the heads of the study programmes, after which it was submitted to the Academic Commission of the FMIPA Academic Senate.

Following deliberation and refinement, the final draft was duly endorsed at a Plenary Session of the FMIPA Academic Senate.

These guidelines have been designed to enhance transparency and accountability in the implementation of the Final Project and the Thesis, given that both courses involve a multiplicity of stakeholders. Consequently, the document also incorporates Standard Operating Procedures (SOPs), forms, assessment rubrics, and writing formats that serve as references for students.

We extend our sincere appreciation and gratitude to all parties who have contributed to the preparation of these Guidelines. May Allah SWT bless every intention and endeavour we undertake in our pursuit of higher-quality tertiary education.

Banda Aceh, 31 October 2024

Prof. Dr. Taufik Fuadi Abidin, S.Si., M.Tech.

Dean, FMIPA USK

REFERENCE DOCUMENTS UNDERPINNING THESE GUIDELINES

1. Law of the Republic of Indonesia No. 12 of 2012 concerning Higher Education.
2. Regulation of the Minister of Research, Technology, and Higher Education No. 44 of 2015 concerning the National Standards of Higher Education.
3. Regulation of the Minister of Education and Culture No. 92 of 2014 concerning the Technical Guidelines for the Assessment of Credit Points for the Functional Position of Lecturer.
4. Regulation of the Rector of USK No. 20 of 2022 concerning the Academic Guidelines for Diploma and Undergraduate Programmes.
5. Decree of the Dean of FMIPA USK No. 8 of 2019 concerning the Guidelines for the Final Project of FMIPA USK.
6. Regulation of the Minister of Education, Culture, Research, and Technology No. 32 of 2022 concerning the Minimum Service Technical Standards for Education.
7. Regulation of the Minister of Education, Culture, Research, and Technology No. 53 of 2023 concerning Higher Education Quality Assurance.
8. Academic Guidelines for Undergraduate and Vocational Programmes of USK 2024, No. 71 of 2024.
9. Academic Guidelines for Postgraduate Programmes of USK 2024, No. 72 of 2024.

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CHAPTER I GENERAL PROVISIONS

1.1 Definitions

1.1.1 Final Project

The Final Project (*Tugas Akhir*, TA) is a series of compulsory courses that must be completed by every undergraduate student of FMIPA USK by means of a research undertaking conducted within the discipline being studied, applying the cognitive, psychomotor, and affective competencies acquired throughout the programme. The completion of the Final Project constitutes a prerequisite for conferral of the bachelor's degree at FMIPA USK. The preparation, execution, and outcomes of the research are documented in a written report and presented before the Examination Committee.

Final Project activities commence with the formulation of a research plan, which is encapsulated in the Research Proposal course (2 credits). The plan is presented at a seminar attended by the Examination Committee and may also be attended by other students. Once the student has been declared to have passed, the research is to be conducted forthwith in accordance with the approved plan. The findings are then compiled into a Research Report, which forms part of the Final Project course (4 credits). The student is deemed to have passed the Final Project course upon successfully presenting the Research Report at both the Results Seminar and the Undergraduate Defence.

1.1.2 Thesis

The Thesis is a compulsory course that must be completed by every master's student of FMIPA USK through the conduct of innovative research worthy of publication in a nationally accredited or international scientific journal within the discipline concerned, while developing the relevant cognitive, psychomotor, and affective competencies. Successful completion of the Thesis constitutes a prerequisite for conferral of the master's degree at FMIPA USK. The preparation, execution, and outcomes of the Thesis research are documented in a written report and presented before the Examination Committee.

Activities within the Thesis course commence with the preparation of a research plan, which is presented at a seminar attended by the Examination Committee and, where applicable, by other students. Following a successful pass, the student conducts the research in accordance with the approved plan. The findings are subsequently compiled into a Research Report, forming part of the Thesis course. The student is deemed to have passed the Thesis course upon presenting the Research Report at both the Results Seminar and the Master's Defence.

1.2 Forms of the Final Project and Thesis

The Final Project and Thesis may be conducted by means of empirical research (in laboratories or in the field) or through theoretical study (literature review or computational analysis). The forms permissible for any given student shall be determined in accordance with the regulations of the respective study programme.

1.3 Learning Outcomes

1.3.1 Final Project

The learning outcome of the Final Project course cluster is that students shall be capable of preparing, conducting, and reporting research possessing the breadth and depth commensurate with Level 6 of the Indonesian National Qualifications Framework (KKNI), through the application of the cognitive, psychomotor, and affective competencies acquired during their studies.

The learning outcomes of the Research Proposal course require that students be able to:

1. Conduct a literature search relevant to the proposed research;
2. Prepare a written research plan; and
3. Present the research plan and articulate its background, theoretical foundation, and methodological choices in a seminar setting.

The learning outcomes of the Final Project course further require that students be able to:

1. Conduct elementary research in accordance with scientific principles, applying the knowledge and skills acquired during their studies;
2. Compose a research report in accordance with scientific conventions;
3. Present and explain the research findings in a seminar; and
4. Defend the research findings and demonstrate comprehensive disciplinary knowledge in a closed examination.

1.3.2 Thesis

The learning outcome of the Thesis course is that students shall be capable of preparing, conducting, and reporting innovative research possessing breadth and depth commensurate with Level 8 of the KKNI, through the development of the cognitive, psychomotor, and affective competencies acquired during their studies.

The learning outcomes for the Thesis Proposal require that students be able to:

1. Conduct a literature search relevant to the proposed research;
2. Prepare a written research plan; and
3. Present the research plan and articulate its background, theoretical foundation, and methodological choices in a seminar.

The learning outcomes of the Thesis course further require that students be able to:

1. Conduct innovative research in accordance with scientific principles;
2. Compose a research report in accordance with scientific conventions;
3. Present and explain the research findings in a seminar;
4. Defend the research findings and demonstrate comprehensive disciplinary knowledge in a closed examination; and

5. Disseminate scientific outputs through publication in a nationally accredited or international journal.

CHAPTER II SUPERVISORS, EXAMINERS, AND COORDINATORS OF THE FINAL PROJECT / THESIS

2.1 Supervisor Eligibility

To facilitate the successful completion of the Final Project / Thesis, each student shall be supervised by two academic staff members, designated respectively as Supervisor I and Supervisor II. Supervisor I serves as the lead supervisor and must be a full-time academic of the student's home study programme/department. Supervisor II may be drawn from within or outside the student's home programme/department, or indeed from outside USK, in accordance with the research requirements (see Table 2.1). The appointment of Supervisors I and II shall be effected by the Head of the Study Programme; the student may, however, propose supervisors deemed appropriate to the intended research topic.

To safeguard quality, the maximum number of students that any single academic may supervise — whether as Supervisor I or II — is as follows:

1. Final Project: a maximum of eight students per semester;
2. Thesis: a maximum of six students per semester.

The Head of the Study Programme may stipulate a lower ceiling, taking into account the equitable distribution of academic workload across the programme.

Table 2.1 Eligibility Requirements for Final Project / Thesis Supervisors

Role	Final Project Supervisor	Thesis Supervisor
Supervisor I	Full-time academic of the department; academic degree \geq Master's with functional rank \geq Lector, or doctoral degree with functional rank \geq Assistant Professor; field of expertise relevant to the student's topic.	Full-time academic of the department; doctoral degree; functional rank \geq Lector; H-index \geq 3, or at least one publication as first/corresponding author in an international journal, a Sinta-2 accredited national journal, or Scopus-indexed proceedings within the past five years; field of expertise relevant to the student's topic.
Supervisor II (within USK)	Academic degree \geq Master's; functional rank \geq Assistant Professor; field of expertise relevant.	Doctoral degree; functional rank \geq Assistant Professor; field of expertise relevant.
Supervisor II (external to USK)	Master's degree, or Bachelor's with a recognised professional/competency certificate; rank equivalent to III/c, or \geq 5 years of service; field relevant; subject to Dean's approval upon recommendation of the Head of the Study Programme.	Doctoral degree; rank equivalent to III/c, or \geq 8 years of service; field relevant; subject to Dean's approval upon recommendation of the Head of the Study Programme.

The division of responsibilities between Supervisors I and II shall be agreed upon between them upon a student's application for supervision. The duties of supervisors are as follows:

3. To direct the student in selecting the topic, preparing, and revising the Research Proposal.
4. To guide the student throughout the conduct of the research.
5. To guide the student in preparing and revising the Final Project / Thesis report.

Note: Supervisory duties commence upon formal appointment (receipt of form PEN-03) and conclude upon the submission of the approved Final Project / Thesis report, evidenced by completion of the distribution form.

6. To direct the student in observing the prescribed deadlines for completion of the Final Project / Thesis sequence.
7. To assess the student objectively, in accordance with the assessment procedures set out in Chapter IV.

2.2 Examiner Eligibility

The viability of the research proposal, the research outcomes, and the Final Project / Thesis report is presented in seminars attended by both the supervisors and the examiners. Each seminar requires two examiners, who may be drawn either from full-time academics of the department or from other departments within USK. The Head of the Study Programme determines the identity and number of examiners, having due regard to the equitable distribution of workload and to the requirements set out in Table 2.2. Examiners are assigned to the Proposal Seminar and the Undergraduate / Master's Defence; assignment to the Results Seminar is at the discretion of the Final Project / Thesis Coordinator.

Table 2.2 Eligibility Requirements for Final Project / Thesis Examiners

Examiner	Final Project Examiner	Thesis Examiner
Within department	Master's degree; functional rank \geq Assistant Professor; relevant field.	Doctoral degree; functional rank \geq Assistant Professor; relevant field.
Outside department, within USK	Master's degree; functional rank \geq Assistant Professor or holding NIDN/NIDK; relevant field.	Doctoral degree; functional rank \geq Assistant Professor or holding NIDN/NIDK; relevant field.
External to USK	Master's degree, or Bachelor's with a professional/competency certificate; rank equivalent to III/c, or \geq 5 years of service; relevant field; subject to Dean's approval.	Doctoral degree; rank equivalent to III/c, or \geq 5 years of service; relevant field; subject to Dean's approval.

2.3 Duties of the Examiner

1. To examine students at the Research Proposal Seminar and the Undergraduate / Master's Defence at the appointed time and venue; examiners may also be assigned to the Results Seminar.
2. To provide feedback and assess the viability of the proposed research.
3. To evaluate and assess the research outcomes.
4. To examine and assess the student's ability to articulate the research findings and demonstrate comprehensive disciplinary mastery.

2.4 The Final Project / Thesis Coordinator

The Research Proposal and Final Project / Thesis courses are administered specifically at the level of the study programme. To this end, the Head of the Study Programme appoints a full-time academic to serve as the Final Project / Thesis Coordinator, whose duties encompass:

1. Receiving registrations from students intending to undertake the Final Project / Thesis;
2. Reviewing student-proposed supervisor nominations against the criteria of Section 2.1;
3. Allocating supervisors to students;
4. Administering the Research Proposal Seminar, the Results Seminar, and the Defence (scheduling, examiner assignment, and issuance of invitations);
5. Briefing students on the procedures at the start of each semester;
6. Verifying the completeness of documentation for each examination event;
7. Receiving assessment outcomes from the Examination Committee;
8. Entering Proposal Seminar grades into the online systems (SIMATA and the academic-advisor application) and forwarding the grade documentation and minutes to the FMIPA Academic Sub-Bureau, once all student obligations have been fulfilled;
9. Entering Results Seminar grades into SIMATA;
10. Entering Defence grades and data into the online systems (SIMATA, SIAKAD, and the academic-advisor application) and forwarding the documentation and minutes to the FMIPA Academic Sub-Bureau no later than two working days after the defence;
11. Conducting annual monitoring and evaluation of the Final Project / Thesis at programme level, with particular attention to the effectiveness of supervision and the duration of student completion;
12. Submitting semester evaluation reports and recommendations to the Head of the Study Programme aimed at improving efficiency.

The workload borne by the Coordinator is recognised at the equivalent of two credits per semester.

CHAPTER III

IMPLEMENTATION OF THE FINAL PROJECT AND THESIS

3.1 Time of Completion

3.1.1 Final Project

The credit values for the Research Proposal course and the Final Project are 2 and 4 credits respectively. The Research Proposal may be programmed in the same semester as, or in a different semester from, the Final Project. The workload corresponds to that prescribed in the USK 2024 Academic Guidelines, namely one credit equivalent to 170 minutes per week over one semester.

The Research Proposal must be completed within one semester. A pass in this course determines whether the student may proceed to the research stage. Should the student fail, the entire administrative process must be reinitiated.

Implementation of the Final Project comprises the following stages: (1) conduct of the research; (2) preparation of the Research Report; (3) Results Seminar; and (4) Undergraduate Defence. All stages must be completed within one semester counted from the date the student is declared to have passed the Proposal Seminar. Where this is not feasible, an extension of one further semester may be granted with the approval of the Head of the Study Programme. Failure to complete within the extended period requires the student to recommence from the Research Proposal stage. The minimum duration from successful Proposal defence to successful Undergraduate Defence is two months.

3.1.2 Thesis

The total credit value of the Thesis course varies across the master's programmes of FMIPA, in accordance with the respective curricula. The workload conforms to the USK 2024 Academic Guidelines (one credit equivalent to 170 minutes per week per semester).

Students must pass the Thesis Proposal within one semester in order to proceed with thesis research. Failure to do so requires repetition in the following semester. All Thesis stages must be completed within one semester from the successful Proposal Seminar; a single one-semester extension may be granted upon the approval of the Head of the Study Programme. Failure to complete within the extended period necessitates recommencement from the Proposal stage. The minimum duration from successful Proposal defence to successful Master's Defence is three months.

3.2 Conduct of the Research Proposal

3.2.1 Final Project

A. Prerequisites.

A student may register for the Research Proposal course upon satisfying the following conditions:

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1. Completion of at least 120 credits;
 2. A cumulative GPA of at least 2.0;
 3. Completion of all programme-mandated compulsory courses related to the research field with an average grade of BC and no grade of D;
 4. Fulfilment of any further requirements imposed by the programme/department.

B. Registration Procedure.

1. The student submits a research-topic proposal (form PEN-01) to the Final Project Coordinator, countersigned by the academic adviser, accompanied by the most recent academic transcript and the current-semester course-registration form (KRS).
2. The Coordinator confirms the willingness of the proposed supervisors (form PEN-02; for external supervisors, form PEN-02B).
3. The Coordinator forwards form PEN-02 to the Head of the Study Programme for the issuance of the Letter of Supervisor Appointment (form PEN-03).
4. Upon appointment, the student and the supervisors jointly prepare the Research Proposal in accordance with the approved topic.

C. Registration and Conduct of the Proposal Seminar.

1. The student registers with the Coordinator to obtain a seminar slot. Programmes may impose registration deadlines.
2. The Coordinator schedules the seminar and issues the invitations.
3. The student distributes the proposal manuscript to the Examination Committee no later than four working days prior to the seminar.
4. The student arrives 15 minutes before the seminar in order to make the necessary preparations.
5. The seminar shall last no longer than 100 minutes. The seminar may proceed only when both supervisors and both examiners are in attendance; should an examiner be unable to attend, the Coordinator may appoint a substitute.
6. The Examination Committee assesses the seminar by completing form PEN-04_S1.
7. On the basis of the assessment, the Chair prepares and signs the Minutes of the Proposal Seminar (form PEN-05) and announces the result.
8. The Head of the Study Programme thereafter endorses the proposal (form PEN-06).
9. The Coordinator records the seminar data in the online application and transmits the grade to the FMIPA Academic Sub-Bureau in DPNA format.

D. Additional Provisions.

1. The minimum passing grade for the Proposal Seminar is BC.
2. The Chair / Secretary of the Examination Committee submits the assessment forms and minutes to the Coordinator on the day of the seminar.

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3. For the grade to be released, the student must have attended at least 75% of all Proposal Seminars conducted in that semester, evidenced by an attendance card endorsed by the Chair.
 4. A student who fails the Proposal Seminar may resit within the same semester, time permitting.
 5. A student who has not yet passed the Proposal Seminar is not permitted to undertake laboratory work for research purposes; should preliminary work be required, full responsibility for laboratory access rests with the supervisor.

3.2.2 Thesis

A. Prerequisites.

A student may register for the Thesis Proposal upon satisfying the following conditions:

1. Completion of at least 75% of the total credits required by the programme;
2. A cumulative GPA of at least 3.0;
3. Completion of all programme-mandated research-methodology courses with a minimum grade of B;
4. Fulfilment of any further requirements imposed by the programme.

B. Registration Procedure.

1. After receiving the Thesis Advisor Assignment, the student and the thesis advisor prepare a Thesis Proposal in accordance with the topic to be researched.
2. Students who have met the requirements under Section A submit a research topic proposal (Form PEN-01) to the Thesis Coordinator, with the Academic Advisor (advisor)'s approval. The research topic proposal must be accompanied by the latest academic transcript and the current semester's Course Registration Form (KRS) signed by the academic advisor.
3. The Thesis Coordinator inquires about the availability of the prospective advisor (PEN-02).

Note: For prospective supervisors who are faculty members from outside USK, use form PEN-02B.

4. The Thesis Coordinator submits form PEN-02 to the Program Coordinator to issue a Supervisor Appointment Letter (form PEN-03).
5. After receiving the appointment, the student and the supervisor jointly draft the Thesis Proposal in accordance with the proposed topic.

Note: The student and the supervisors jointly establish a schedule for periodic supervision. If the student and the supervisors fail to meet the supervision targets (as stipulated in Section 3.1), either party may report this to the Thesis Coordinator for follow-up.

C. Registration and Conduct of the Proposal Seminar.

1. Students must register with the Thesis Coordinator to secure a slot on the Thesis Proposal Seminar schedule. Each program may set a deadline for registration.
2. The Thesis Coordinator determines the schedule and issues invitations for the Research Proposal Seminar.
3. Students must distribute their Thesis Proposal manuscripts to the Examination Committee no later than 4 (four) business days before the seminar date.
4. Students must arrive 15 minutes before the seminar begins to prepare everything.
5. The Thesis Proposal Seminar lasts for a maximum of 100 (one hundred) minutes.

Note: The seminar may proceed only if all advisors and examiners are present. If one of the examiners is unable to attend, the Thesis Coordinator may appoint a substitute.

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6. The Thesis Proposal Seminar is evaluated by the Examination Committee by completing form PEN-04_S2.
 7. Based on the evaluation conducted in item 6, the Chair of the Examination Committee prepares and signs the Thesis Proposal Seminar Minutes (form PEN-05) and announces the student's pass/fail status.
 8. Based on the Minutes in item 7, the Program Coordinator approves the Thesis Proposal (form PEN-06).
 9. The Thesis Coordinator then records the Thesis Proposal Seminar data in the online application and submits the student's grade to the Academic Subdivision of the Faculty of Mathematics and Natural Sciences in the form of a DPNA (if it is a course in the curriculum).

D. Additional Provisions.

1. The minimum passing grade for the Thesis Proposal seminar is a B.
2. In order for a course grade to be issued, students who have registered for the Thesis Proposal course on their Course Registration Form (if included in the curriculum) must attend at least 75% of the Thesis Proposal seminars held during that semester, as evidenced by an attendance sheet signed by the chair of the Examination Committee.
3. Students who fail the Thesis Proposal seminar may retake it in the same semester if time permits.
4. Students who have not passed the Thesis Proposal seminar are not permitted to work in the laboratory for their research. If preliminary research is required for the preparation of the Thesis Proposal, the responsibility for laboratory use lies entirely with the advisor.
5. After passing the Thesis Proposal Seminar, students must immediately conduct their research and gradually prepare the research report under
6. The supervision of their academic advisor by completing the Supervision Form (form PEN-07).

Note: Students and advisors jointly establish a schedule for periodic advising sessions. If students and advisors fail to meet the advising targets (as stipulated in Section 3.1), either party may report the matter to the Thesis Coordinator for further action.

3.3 Conduct of the Research

3.3.1 Final Project

A. Prerequisites.

A student may commence research upon satisfying the following conditions:

1. Having passed the Research Proposal Seminar;
2. Having received the endorsed Research Proposal (form PEN-06);
3. Having received the supervision card (form PEN-07).

B. Research Implementation.

1. The student conducts the research under the direction of the supervisors and in accordance with the approved proposal.

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2. All supervisory consultations are recorded in the supervision card (form PEN-07).
 3. Should the student wish to modify the research topic or methodology, prior written approval must be obtained from both supervisors.
 4. The student must maintain a research logbook documenting daily activities.

C. Additional Provisions.

1. The research must be completed within the time frame stipulated in Section 3.1.1.
2. All laboratory work and field activities must comply with applicable health, safety, and ethical standards.

3.3.2 Thesis

The research provisions for the Thesis mirror those of the Final Project (Section 3.3.1), with the adaptation that the Thesis-specific timeline (Section 3.1.2) applies.

3.4 Results Seminar

3.4.1 Final Project

A. Prerequisites. A student may register for the Results Seminar upon satisfying the following conditions:

1. Having completed the research in accordance with the approved proposal;
2. Having obtained the supervisor's written confirmation that the Research Report is ready for presentation;
3. Having fulfilled a minimum of six supervisory consultations as recorded in the supervision card.

B. Registration Procedure.

1. The student submits the completed supervision card and the Research Report manuscript to the Coordinator.
2. The Coordinator verifies the documentation and schedules the seminar.
3. The student distributes the manuscript to the Examination Committee no later than four working days prior to the seminar.

C. Conduct of the Results Seminar.

1. The seminar shall last no longer than 100 minutes.
2. The Examination Committee assesses the seminar by completing form PEN-08_S1.
3. The Chair prepares and signs the Minutes (form PEN-09) and announces the result.
4. The Coordinator issues the Results Seminar certificate (form PEN-10).

D. Additional Provisions.

1. The minimum passing grade for the Results Seminar is BC.

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2. Students must incorporate all revisions mandated by the Examination Committee within two weeks of the seminar.
 3. Attendance requirements mirror those of the Proposal Seminar ($\geq 75\%$).

3.4.2 Thesis

A. Prerequisites. A student may register for the Thesis Results Seminar upon satisfying the following conditions:

1. Having completed the research in accordance with the approved proposal;
2. Having obtained the supervisor's written confirmation that the Thesis Report is ready for presentation;
3. Having fulfilled a minimum of eight supervisory consultations as recorded in the supervision card.

The student may conduct the Results Seminar before the grades of concurrently enrolled courses for the current semester have been released.

B. Registration Procedure.

The procedure mirrors Section 3.4.1 B.

C. Conduct of the Results Seminar.

The procedure mirrors Section 3.4.1 C, with form PEN-08_S2 used for assessment.

D. Additional Provisions.

1. The minimum passing grade for the Thesis Results Seminar is B.
2. Revision and attendance requirements mirror those of the Final Project Results Seminar.

3.5 Undergraduate / Master's Defence

3.5.1 Final Project — Undergraduate Defence

A. Prerequisites.

A student may register for the Undergraduate Defence upon satisfying the following conditions:

1. Having passed the Results Seminar;
2. Having incorporated all mandated revisions into the Research Report, as confirmed by the supervisors;
3. Having fulfilled all credit requirements of the programme;
4. Having achieved a cumulative GPA of at least 2.0;
5. Having no outstanding grade of E;
6. Having submitted all required administrative documents to the Coordinator.

B. Registration Procedure.

1. The Coordinator proposes the Examination Committee to the Dean (form PEN-11).
2. The Dean issues the Letter of Examination Committee Appointment (form PEN-12).

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3. The student distributes the final Research Report to the Examination Committee no later than four working days prior to the defence.

C. Conduct of the Defence.

1. Opening and verification of student identity (≤ 5 minutes);
2. Student presentation (≤ 20 minutes);
3. Questions and discussion (≤ 85 minutes);
4. Assessment and announcement (≤ 10 minutes).

D. Additional Provisions.

1. The minimum passing grade for the Undergraduate Defence is BC.
2. The Chair submits all documentation to the Coordinator within two working days.
3. The student must submit the final, corrected and bound report within the timeframe prescribed by the programme.

3.5.2 Thesis — Master's Defence

A. Prerequisites.

A student may register for the Master's Defence upon satisfying the following conditions:

1. Having passed the Results Seminar;
2. Having incorporated all mandated revisions into the Thesis Report, as confirmed by the supervisors;
3. Having fulfilled all credit requirements of the programme;
4. Having achieved a cumulative GPA of at least 3.0;
5. Having no outstanding grade of D or E;
6. Evidence of manuscript submission to a reputable journal (proof of submission required);
7. Having submitted all required administrative documents to the Coordinator.

B. Registration Procedure.

The procedure mirrors Section 3.5.1 B.

C. Conduct of the Defence.

1. Opening and verification of student identity (≤ 5 minutes);
2. Student presentation (≤ 20 minutes);
3. Questions and discussion (≤ 85 minutes);
4. Assessment and announcement (≤ 10 minutes).

D. Additional Provisions.

1. The minimum passing grade for the Master's Defence is B.
2. The provisions set out in Chapter IV govern all assessment procedures.

CHAPTER IV SEMINARS AND ASSESSMENT

4.1 Seminar Structure

Each seminar or defence event is chaired by the Chair of the Examination Committee and follows the sequence outlined in Sections 3.5.1 C and 3.5.2 C. The Examination Committee comprises both supervisors and at least two examiners, as stipulated in Chapter I. At every stage of the seminar, the Examination Committee must provide constructive feedback and objective assessment.

4.2 Seminar Procedure

1. Opening and verification of student identity (≤ 5 minutes);
2. Student presentation (≤ 20 minutes);
3. Questions and discussion (≤ 85 minutes);
4. Assessment and announcement (≤ 10 minutes).

4.3 Assessment

Assessment for each seminar is recorded on the relevant assessment form (see Appendix 1). The standard deviation (SD) of the marks awarded by the members of the Examination Committee must be ≤ 5 ; where an individual mark falls outside the range $\text{mean} \pm 5$, the relevant academic's mark must be adjusted. By way of illustration, suppose the average marks given by Lecturers A, B, C, and D are 90, 78, 76, and 65 respectively. The total is 309 and the mean is 77.25. The marks of Lecturers A and D fall outside the range 77.25 ± 5 ; accordingly, A's mark is reduced to 82.25 and D's mark increased to 72.25, and the mean is recalculated.

Table 4.1 Numerical Grades and Performance Categories

Mark	Performance Category	Outcome
$A \geq 87$	Outstanding	Pass
$78 \leq AB < 87$	Very Good	Pass
$69 \leq B < 78$	Good	Pass
$60 \leq BC < 69$	More than Sufficient	Pass
$51 \leq C < 60$	Sufficient	Fail
$41 \leq D < 51$	Inadequate	Fail
$E < 41$	Highly Inadequate	Fail

Examiners assign numerical marks on a 0–100 scale for each criterion, in accordance with the relevant performance category as set out in the USK 2024 Academic Guidelines.

4.4 Assessment Criteria

4.4.1 Final Project Assessment Criteria

A. Proposal Seminar.

Marks are awarded by both supervisors and examiners with equal weighting, drawing upon the rubric in Appendix 2a. Supervisors and examiners must complete the Proposal Revision Form (Appendix 2b).

Table 4.2 Evaluation Criteria for Research Proposal Seminars

No.	Criterion	Weight (%)
1	Research problem and methodology	25
2	Relevance and currency of literature	15
3	Writing (content, language, format)	20
4	Mastery of subject matter and underlying knowledge	20
5	Oral presentation and communication skills	20

The final mark equals the average across all examiners. The Coordinator releases the mark only when (i) the student has attended at least 75% of Proposal Seminars during the semester and (ii) the student has submitted the revised, supervisor-endorsed Proposal to the Coordinator within two weeks of the seminar.

B. Results Seminar.

Criteria comprise: conformity of the report with the Proposal (25%); ability to explain the data — methodological mastery (10%), data integrity (20%), relationship between data and objectives (10%), capacity to interpret and analyse data relationships (10%); and oral presentation and communication skills (25%). The final mark is the mean across all examiners. Where the student secures a qualifying publication (per the criteria above), an A is awarded.

C. Undergraduate Defence.

Marks are awarded by supervisors and examiners with differential weighting: research conduct is assessed solely by the supervisors, whereas writing and the comprehensive examination are jointly assessed.

Table 4.3 Criteria for the Undergraduate Thesis Defense

No.	Criterion	Weight (%)
1. Research Conduct (supervisors only)		
	Discipline	10
	Diligence	5
	Precision	5
	Skill	10

2. Writing (supervisors and examiners)		
	Content of the Final Project report	20
	Format conformity (per the FMIPA writing guidelines)	5
	Language (standard Indonesian / EYD)	5
3. Comprehensive Examination (supervisors and examiners)		
	Mastery of research subject matter and foundational knowledge	30
	Discussion ability	10

The final Defence mark is computed as: $Final\ Mark = 0.75 \times (A + B) + 0.25 \times C$, where A is the average of Total 1, B is the average of Total (2 + 3), and C is the average mark of the Results Seminar. The Chair verifies all marks before computing the final figure, which is then converted into a letter grade using Table 4.1. Qualifying publications attract an A.

4.4.2 Thesis Assessment Criteria

A. Thesis Proposal Seminar.

Equal weighting between supervisors and examiners, with reference to the Appendix 2a rubric. Supervisors and examiners are required to complete the Thesis Proposal revision sheet (Appendix 2b).

Table 4.4 Thesis Proposal Seminar Evaluation Criteria

No.	Criterion	Weight (%)
1	Research problem and methodology	30
2	Relevance and currency of literature	25
3	Writing (content, language, format)	15
4	Mastery of content and foundational knowledge related to the research	20
5	Oral presentation and communication skills	10

The final mark for the Thesis Proposal Seminar is the average across all examiners, computed as:

$$Final\ mark = \Sigma (Total\ mark\ of\ all\ examiners) / \Sigma (Examiners)$$

The Thesis Proposal mark is released by the Thesis Coordinator provided that:

1. The student has attended at least 75% of Thesis Proposal Seminars conducted in that semester, as evidenced by the attendance card.
2. The student has submitted the revised Thesis Proposal, endorsed by the supervisors, to the Thesis Coordinator no later than two weeks after the seminar.

B. Thesis Results Seminar.

Marks are awarded by supervisors and examiners with equal weighting. The marks for each criterion are selected from the most appropriate performance category in the assessment rubric (Appendix 3). The assessment criteria for the Thesis Results Seminar are as follows:

Table 4.5 Assessment Criteria for the Thesis Results Seminar

No.	Criterion	Weight (%)
1	Conformity between the Thesis Report and the Thesis Proposal	
	a. Title and results	5
	b. Objectives and methodology	5
	c. Methods and results	5
2	Ability to explain research results	
	a. Mastery of research methodology	15
	b. Data/results integrity	20
	c. Relationship between data/results and objectives	15
	d. Ability to explain and analyse data relationships	15
3	Oral presentation	
	a. Organisation	10
	b. Presentation technique	5
	c. Language and etiquette	5

The final mark for the Thesis Results Seminar is:

$$\text{Final mark} = \Sigma (\text{Total mark of all examiners}) / \Sigma (\text{Examiners})$$

Students who publish a research article derived from the thesis in a reputable international journal indexed by Scopus, Web of Science, or the International Scientific Indexing (ISI) with a minimum ranking of Q2, as first author, with a status of at least "accepted for publication," shall be awarded an A by the Examination Committee.

C. Master's Defence.

Marks are awarded by supervisors and examiners with differential weighting. Research conduct marks are given solely by the supervisors, whereas Thesis Report writing and the Comprehensive Examination are assessed by both supervisors and examiners. The marks for each criterion are selected from the most appropriate performance category in the assessment rubric (Appendix 4). The assessment criteria for the Master's Defence are as follows:

Table 4.6 Assessment Criteria for the Master's Defence

No.	Criterion	Weight (%)
1. RESEARCH CONDUCT (supervisors only)		
	a. Discipline	10
	b. Diligence	5
	c. Precision	5
	d. Skill	10
	Total 1	
2. WRITING (supervisors and examiners)		
	a. Content of the Thesis Report	25
	b. Format conformity (per the FMIPA writing guidelines)	5
	c. Language (standard Indonesian /	5

	EYD)	
	Total 2	
3. COMPREHENSIVE EXAMINATION (supervisors and examiners)		
	a. Mastery of research subject matter and foundational knowledge	15
	b. Discussion ability	20
	Total 3	

The final mark for the Master's Defence is:

$$\text{Final mark} = 0.75 \times (A + B) + 0.25 \times C$$

Where:

- A = Average of Total 1
- B = Average of Total (2 + 3)
- C = Average mark of the Results Seminar

The Chair of the Examination Committee verifies all marks before computing the final figure, which is then converted into a letter grade using Table 4.1.

Students who publish a research article derived from the thesis in a reputable international journal indexed by Scopus, Web of Science, or the International Scientific Indexing (ISI) with a minimum ranking of Q2, as first author, with a status of at least "accepted for publication," shall be awarded an A by the Examination Committee.

CHAPTER V: WRITING GUIDELINES

5.1 Forms Of Research

The writing format of the Final Project/Thesis depends on the form of the Final Project/Thesis (empirical research or theoretical study) selected by the student.

5.1.1 Final Project/Thesis Through Empirical Research

The Final Project/Thesis report through empirical research shall follow the writing structure set out below:

Section	Component	Scope
PRELIMINARY	Cover	Research Proposal / Final Project/Thesis Report
	Title Page	
	Endorsement Page	
	Plagiarism-Free Declaration Page*	
	Declaration Page*	
	Abstract (Indonesian and English)*	
	Acknowledgements	
	Table of Contents	
	List of Tables (if applicable)	
	List of Figures (if applicable)	
BODY	CHAPTER I: INTRODUCTION	Research Proposal / Final Project/Thesis Report
	1.1 Background	
	1.2 Problem Statement	
	1.3 Research Objectives	
	1.4 Hypotheses (if applicable)	
	1.5 Significance of the Research	
	CHAPTER II: LITERATURE REVIEW	
	CHAPTER III: RESEARCH METHODOLOGY	
	3.1 Research Location and Duration	
	3.2 Research Schedule	
	3.3 Equipment and Materials	
	3.4 Research Procedures	
	3.5 Estimated Research Budget	
	CHAPTER IV: RESULTS AND DISCUSSION	
	CHAPTER V: CONCLUSIONS AND RECOMMENDATIONS	
CLOSING	Bibliography	Research Proposal
	Glossary (if applicable)	
	Appendices (if applicable)	Final Project/Thesis Report
	Curriculum Vitae*	

Note: Items marked with an asterisk () are not required for the Research Proposal. Items marked with a double asterisk () are not required for the Final Project/Thesis Report.*

5.1.2 Final Project/Thesis Through Theoretical Study (Literature Review)

The Final Project/Thesis report through theoretical study (literature review) shall follow the writing structure set out below:

Section	Component	Scope
PRELIMINARY	Cover	Research Proposal / Final Project/Thesis Report
	Title Page	
	Endorsement Page	
	Plagiarism-Free Declaration Page*	
	Declaration Page*	
	Abstract (Indonesian and English)*	
	Acknowledgements	
	Table of Contents	
	List of Tables (if applicable)	
	List of Figures (if applicable)	
	List of Appendices (if applicable)	
BODY	CHAPTER I: INTRODUCTION	Research Proposal / Final Project/Thesis Report
	1.1 Background	
	1.2 Problem Statement	
	1.3 Research Objectives	
	1.4 Hypotheses (if applicable)	
	1.5 Significance of the Research	
	CHAPTER II: LITERATURE REVIEW	
	CHAPTER III: RESULTS AND DISCUSSION	
CLOSING	CHAPTER IV: CONCLUSIONS AND RECOMMENDATIONS	Research Proposal
	Bibliography	
CLOSING	Glossary (if applicable)	Final Project/Thesis Report
	Appendices (if applicable)	
	Curriculum Vitae*	

Note: Items marked with an asterisk (*) are not required for the Research Proposal.

5.1.3 Recognition Alternatives for the Final Project/Thesis

The recognition alternatives that may be acknowledged as substitutes for the Final Project/Thesis are as follows:

- a. **Collaborative Projects**, whereby students work in multidisciplinary teams to complete innovative projects relevant to their field of study. Such projects may encompass research, product or service development, or solutions to real-world social problems.
- b. **Internships and Field Practicums**, whereby students incorporate internship and field practicum experiences in which they work at industries or organisations relevant to their Study Programme in order to gain practical experience. The internship assignment must differ from the internship replacing the 20-credit-hour requirement under the *Merdeka Belajar Kampus Merdeka* (MBKM) programme. In this internship, students are assigned a more significant project relevant to their field of study or are tasked with completing a specific project currently under development by the host organisation, thereby rendering it a worthy substitute for the Final Project. Accordingly, students can build professional networks and gain insight into current industry requirements and expectations.
- c. **Product Prototypes**, where a prototype is an initial model or simplified representation of a product or system designed to test its concepts, features, and potential functions. Prototypes are employed in various contexts, including software development, physical product design, and technology projects. Students may develop product prototypes as their Final Project.
- d. **Scientific Publications**, whereby students write journal articles, conference papers, or participate in collaborative research with lecturers. For undergraduate Study Programme students seeking

recognition in lieu of the Final Project, students may publish a research article derived from the Final Project in a SINTA 1 or SINTA 2 nationally accredited journal, or in a Scopus-indexed international journal with a minimum quartile ranking of Q4, or a journal indexed in the Web of Science or the International Scientific Indexing (ISI), or in Scopus-indexed proceedings, as first author, with a minimum status of "accepted for publication," and shall be awarded a grade of A by the Examination Committee. For master's Study Programme students who publish a research article derived from their thesis in a reputable international journal indexed in Scopus, the Web of Science, or the International Scientific Indexing (ISI) with a minimum quartile ranking of Q2, as first author, with a minimum status of "accepted for publication," shall be awarded a grade of A by the Examination Committee.

- e. **Student Achievements: Winning National/International Competitions**, whereby a student wins a competition in the form of a work comprising a product, prototype, design, feature, application, or a science olympiad at the national or international level that meets the criteria and is relevant to the graduate learning outcomes of the Study Programme. Students are required to obtain a recommendation from the Study Programme Coordinator prior to participating in the competition, thereby ensuring that the quality of the outputs is achieved through a supervisory process involving lecturers within the Study Programme.

Every student who selects one of the alternative Final Project substitutes specified in points (a) through (e) above is required to produce a report. For master's Study Programme students, only scientific publication (point d) may be recognised as a substitute for the Thesis. Grades shall be assigned by the Final Project/Thesis Examination Committee. The mechanism for implementing any of the alternative Final Project options shall be determined by the relevant Study Programme and set forth in the Standard Operating Procedures as part of the Study Programme curriculum. Master's Study Programme students who publish a scholarly article derived from their thesis research as first author in a minimum of a SINTA 2 nationally accredited journal or Scopus-indexed proceedings may have such publication recognised as a publication requirement for graduation (*yudisium*).

The Recognition Report for the Final Project/Thesis shall follow the writing structure set out below:

Section	Component	Scope
PRELIMINARY	Cover	Recognition of Final Project/Thesis
	Title Page	
	Endorsement Page	
	Plagiarism-Free Declaration Page*	
	Declaration Page*	
	Abstract (Indonesian and English)*	
	Acknowledgements	
	Table of Contents	
	List of Tables (if applicable)	
	List of Figures (if applicable)	
	List of Appendices (if applicable)	
	BODY	Description of the Alternative Substitute Type and Its Outputs / Journal Article
CLOSING	Bibliography	
	Glossary (if applicable)	
	Appendices (if applicable)	
	Curriculum Vitae*	

Note: Items marked with an asterisk (*) are not required for the Research Proposal.

5.2 Writing Structure

The content of the Research Proposal and the Final Project/Thesis Report comprises three sections: the Preliminary Section, the Body, and the Closing Section. The writing structure for the Research Proposal and the research report is fundamentally identical.

5.2.1 Preliminary Section

The order of the Preliminary Section is as follows: (a) Cover, (b) Title Page, (c) Endorsement Page, (d) Plagiarism-Free Declaration Page, (e) Declaration Page (if applicable), (f) Abstract (Indonesian and English), (g) Acknowledgements, (h) Table of Contents, (i) List of Tables, (j) List of Figures, (k) List of Abbreviations, and (l) List of Appendices.

a. Cover

The Research Proposal does not require a dedicated cover. The Research Proposal may be bound in a standard manner, with the title page covered by a transparent plastic sheet and the back page using light brown cardboard.

The cover of the FMIPA Final Project/Thesis/Recognition Report shall be in light brown, using cardboard-type paper. Binding may employ either hard cover or soft cover. The cover shall bear the title, the author's full name, the USK logo, the Study Programme and Department name, the Faculty, the University, the city, and the year of writing (Appendix 5). The cover shall not bear a page number.

b. Title Page

The title page of the Research Proposal and the Final Project/Thesis/Recognition Report shall follow the same format as the cover (Appendix 5). The title must be concise and specific, yet sufficiently clear to describe the research being conducted. Where the title contains foreign terms or names (e.g., Latin species names), such terms shall be written in accordance with the applicable conventions. The title page bears a page number (number i) that is not displayed, but is counted in the subsequent page numbering.

c. Endorsement Page

This page contains the title of the Research Proposal and the Final Project/Thesis/Recognition Report (in both Indonesian and English), the student's name, the student identification number, the names of the supervisors, the name of the Study Programme Coordinator, and the name of the Dean (Appendix 6). The endorsement page is placed after the title page. As with the title page, the endorsement page bears a page number (number ii) that is not displayed, but is counted in the subsequent page numbering.

d. Plagiarism-Free Declaration Page

This page contains a statement declaring that the research conducted is the original work of the author. The format for writing the declaration may be found in Appendix 7. The Plagiarism-Free Declaration is included only in the Final Project/Thesis/Recognition Report.

e. Declaration Page

The Declaration Page is included for Final Project/Thesis/Recognition research that forms part of a lecturer's research grant or where the research concept originates entirely from the lecturer. The declaration is prepared to prevent conflicts of interest regarding intellectual property rights. The statement in the Declaration may be adapted from the example provided in Appendix 8. Whether a Final Project/Thesis/Recognition Report includes a Declaration Page depends entirely on the agreement between the supervisors and the student.

f. Abstract Page in Indonesian and English

The abstract is a summary of the Final Project/Thesis, the content of which encompasses the problem under investigation, the objectives or research questions the researcher seeks to answer, the methods employed, and the results and conclusions obtained. The abstract must be written in a concise, succinct, and clear manner, with a maximum of 250 words, typed in single spacing. The abstracts in Indonesian and English shall be placed on separate pages. The abstract is included only in the Final Project/Thesis/Recognition Report. The format for writing the abstract may be found in Appendices 11a and 11b.

g. Acknowledgements Page

The acknowledgements shall contain expressions of gratitude directed only to those who have directly contributed to the completion of the research and the writing of the Final Project/Thesis/Recognition Report (Appendix 10). Acknowledgements are typically addressed to the Dean, the Head of Department, the Study Programme Coordinator, supervisors, funding bodies, examiners, laboratory technicians, and other parties who directly assisted in the completion of the Final Project/Thesis.

h. Table of Contents Page

The table of contents shall be arranged sequentially from the beginning to the end of the Research Proposal and the Final Project/Thesis/Recognition Report. The table of contents shall be typed in single spacing, except that the spacing between chapters shall be double-spaced. The format for the table of contents may be found in Appendix 11.

i. List of Tables and List of Figures Pages (if applicable)

Lists of tables and figures are not always required unless the document contains more than two tables or figures. The List of Tables and the List of Figures shall each be prepared on a separate page following the format of the Table of Contents. Table numbers and figure numbers shall use Arabic numerals (1, 2, 3, etc.), in accordance with their order within a given chapter. For example, the first table in Chapter II shall be numbered Table 2.1. The title of a table or figure in the respective list must be identical to the title of the table or figure in the text.

j. List of Appendices Page (if applicable)

The items included in the Appendices must be directly related to the content of the Final Project. Where there is more than one Appendix, each Appendix shall be assigned a sequential number using Arabic numerals (Appendix 1, Appendix 2, etc.) followed by the Appendix title. The Appendix title shall be written in the upper-left corner of the relevant Appendix page. The format for the List of Appendices follows the same format as the Table of Contents.

5.2.2 Body Section

The order of the Body Section shall be adjusted to the form of the Final Project/Thesis/Recognition being undertaken, with reference to the explanation provided in Section 5.1.

5.2.2.1.1.1 Chapter I: Introduction

This chapter may contain the rationale or research background, the problem statement, the research objectives, hypotheses (if applicable), and the significance of the research. The content of the Introduction chapter of the Final Project/Thesis Report is largely derived from the Introduction section of the approved Research Proposal.

a. Background

Research is conducted to satisfy the researcher's curiosity in uncovering a phenomenon, concept, or hypothesis, or in applying these to a specific purpose. This section contains the motivating factors or arguments for the importance of conducting the research.

b. Problem Statement

The problem to be investigated must be clearly formulated. The approach and concepts to be employed in addressing the research problem, the hypotheses to be tested, or the conjectures to be verified must also be described. The problem formulation should also explain the definitions, assumptions, and scope that delimit the research. The problem formulation need not necessarily be expressed in the form of questions. The existing problems must be clearly identified and delimited to prevent an expansion of the discussion beyond the intended scope.

c. Research Objectives

The research objectives shall contain a brief statement regarding the research, encompassing the exploration, description, elucidation, testing, verification, or application of a phenomenon, concept, or conjecture.

d. Hypotheses

A hypothesis is a preliminary assumption or conjecture regarding a particular phenomenon to be investigated. Research that is exploratory or descriptive in nature does not explicitly require a hypothesis statement. Hypotheses may be formulated on the basis of a robust theoretical foundation and supported by relevant findings from prior studies.

e. Significance of the Research

This section contains a description of the research's contribution or the outcomes of the theoretical study to the enhancement of the researcher's competence and skills, the advancement of knowledge, the resolution of problems in various aspects of life, or contributions to the institutional development of the university.

Chapter II: Literature Review

This chapter provides an account of the theoretical foundations pertaining to the problem under investigation. Findings from prior studies on similar problems are presented in this section. In essence, the Literature Review of the Final Project/Thesis Report constitutes an elaboration of the Literature Review of the Research Proposal.

Chapter III: Research Methodology

This chapter describes the research location and duration, the implementation schedule (for the proposal only), the equipment and materials used, and the research procedures (for empirical research). For the Research Proposal specifically, this section must be accompanied by an estimated research budget (Appendix 12).

Chapter IV: Results and Discussion

This chapter presents data, explains, analyses, and discusses the results or facts obtained, and confirms them against previous findings or opinions from the literature review. It is recommended that the discussion be conducted in an integrated manner immediately following the data presentation. Research findings may be consistent with, different from, or contrary to the findings and opinions of others. Therefore, the causes of such possibilities must be explained.

Chapter V: Conclusions and Recommendations

This chapter contains the research findings and conclusions drawn from the data discussed. Recommendations pertain to matters related to the conclusions and are linked to the possibility of further research.

5.2.3 Closing Section

The closing section of a Research Proposal and a Final Project/Thesis Report comprises several parts, including the Bibliography, a Glossary (if applicable), Appendices (if applicable), and a Biodata Sheet.

a. Bibliography

The Bibliography contains a list of articles or writings that are directly cited in the Body Section. The scholarly quality of a written work depends greatly upon the sources selected. The sources of a scholarly work are highly diverse and may include journal articles, textbooks, conference proceedings, popular magazines, encyclopaedias, papers, undergraduate theses, master's theses, doctoral dissertations, newspapers, personal communications by telephone, and internet sources (see Section 5.4 for further details). The Bibliography shall be arranged in alphabetical order. The bibliography shall be written in full to enable readers to locate the source materials with ease.

b. Appendices Page

The Appendices should contain items that are directly related to the Body Section of the Research Proposal and the Final Project/Thesis Report. Appendices may take the form of tables, figures, and other illustrations. The Appendices shall be placed after the Bibliography. Where there is more than one Appendix, each Appendix shall be assigned a sequential number using Arabic numerals (1, 2, 3, etc.), written in the upper-left corner of the relevant Appendix page.

Example: Appendix 1. \<Appendix Title\> Appendix 2. \<Appendix Title\>

c. Biodata Sheet

The biodata or brief curriculum vitae is required only for the Final Project/Thesis Report and shall be placed on the very last page. The biodata shall contain personal identification, educational history during the period of study at USK, and other information deemed necessary (Appendix 13).

5.3 Format And Writing Conventions For The Final Project/Thesis

5.3.1 General Provisions

Typing and photocopying of the Final Project/Thesis Report shall be performed on white A4-sized paper (210

× 297 mm), 80 gsm. All paper used must be of uniform colour and quality.

a. Font

The font used in writing the Research Proposal and the Final Project/Thesis Report shall be Times New Roman, 12-point size. The entirety of the Preliminary, Body, and Closing sections shall be typed using the same font. Exceptions are made for chapter titles, text within tables, graphs, and other illustrations, which may use fonts and sizes appropriate to the requirements.

b. Margins and Spacing

Typing shall adhere to the following margin specifications:

- Left margin: 3.50 cm
- Top margin: 3.00 cm
- Right margin: 3.00 cm
- Bottom margin: 3.00 cm

The entirety of the Body Section shall be typed with 1.5 line spacing. The exceptions to the spacing requirements for the Research Proposal and the Final Project/Thesis Report are as follows:

- Abstract in Indonesian and English (single spacing)
- Table of contents (single spacing), except for spacing between chapters (double spacing)
- Table titles or figure captions exceeding one line (single spacing)
- Table contents or Appendix contents (variable, between single and 1.5 spacing)
- Chapter number and chapter title (single spacing)
- Chapter title and first line of text or subheading (3×1.5 spacing)
- Subheadings or sub-subheadings exceeding one line (single spacing)
- Last line of a paragraph and a new subheading (2×1.5 spacing)
- Last line of a table/figure caption and the paragraph below (2×1.5 spacing)
- Block quotations exceeding five lines (single spacing)
- Bibliographic entries (single spacing), with a hanging indent of 1.25 cm from the second line onwards

5.3.2 Page Numbering

The entirety of the Preliminary Section of the Research Proposal and the Final Project/Thesis Report shall be assigned page numbers using lowercase Roman numerals (i, ii, iii, etc.), except for the title page and the endorsement page, which shall not display page numbers. Page numbering shall commence from the abstract/acknowledgements page, using the lowercase Roman numeral corresponding to the page's position as counted from the title page. The page numbers of the Preliminary Section shall be placed at the bottom centre of the page, with a footer of 2.0 cm. The entirety of the Body Section and the Closing Section shall be assigned page numbers using Arabic numerals (1, 2, 3, etc.). These page numbers shall be placed at the bottom right of the page, with a footer of 2.0 cm.

5.3.3 Chapter Titles

Chapter titles shall be typed in Times New Roman, 14-point size, in uppercase (capitalised) and boldface. The spacing between the chapter number and the chapter title shall be single-spaced. The spacing between the chapter title and the first line of text or the subheading shall be 3×1.5 spacing.

5.3.4 Subheadings

Subheadings shall be typed in Times New Roman, 12-point size, in uppercase (capitalised) and boldface. Subheadings shall be numbered using Arabic numerals (1, 2, 3, etc.), commencing with the chapter number followed by a full stop and then the sequential subheading number. Subheadings shall not end with a full stop.

The typing of subheadings, including their numbers, shall begin from the left margin. Where a subheading exceeds one line, the subsequent line shall be single-spaced, commencing beneath the first letter of the line above. The spacing between the last line of the subheading and the paragraph below shall be 1.5 spacing. The spacing between the last line of a paragraph and a new subheading shall be triple spacing. Foreign terms or names (e.g., Latin plant names) within subheadings must conform to the applicable writing conventions.

5.3.5 Sub-subheadings

Sub-subheadings shall be typed in Times New Roman, 12-point size, in boldface. Only the first letter of the first word shall be capitalised, unless a word in the sub-subheading requires an initial uppercase letter in accordance with the applicable rules. Sub-subheadings shall not end with a full stop.

Sub-subheadings shall be numbered using Arabic numerals (1, 2, 3, etc.), commencing with the chapter number followed by a full stop, followed by the sequential subheading number, followed by a full stop, and then the sequential sub-subheading number. The typing of sub-subheadings, including their numbers, shall begin from the left margin. Where a sub-subheading exceeds one line, the subsequent line shall be single-spaced, commencing beneath the first letter of the line above. The spacing between the last line of the sub-subheading and the paragraph below shall be 1.5 spacing. The spacing between the last line of a paragraph and a new sub-subheading shall be 1.5 spacing. The spacing between the last line of a paragraph and a new subheading shall be triple spacing. Foreign terms or names (e.g., Latin plant names) within sub-subheadings must conform to the applicable writing conventions.

5.3.6 New Paragraphs

New paragraphs shall begin at 1.25 cm from the left margin. The spacing between the last line of a paragraph and the subsequent paragraph shall be 1.5 spacing. Writing a paragraph consisting of a single sentence should be avoided. Typing within a paragraph must be fully justified (aligned to both left and right margins).

5.3.7 Quotations and Citations

A quotation is the reproduction of a portion of the text from a reference source. A citation is the reference source from which a quotation or information is obtained. Where a quotation exceeds five lines in length, the entire quotation shall be typed in single spacing, with all lines of the quoted text aligned with the beginning of a new paragraph, i.e., indented 1.25 cm from the left margin. The spacing between the last line of a paragraph and the first line of a quotation, as well as the spacing between the last line of a quotation and the beginning of the next paragraph, shall remain at 1.5 spacing. The source of every quotation must be clearly identified to enable readers to trace it with ease.

Example:

In exporting essential oils (eucalyptus), certain specified requirements must be met, as stated by Guenther (1999): "To date, commercial eucalyptus oil has been produced according to species. However, because the trade requirements stipulate that the oil must contain a minimum of 70% cineole, traders typically blend oils from various species. Subsequently, the oil is exported as eucalyptus oil with a 70% cineole content without distinguishing among the plant species of origin."

Where a quotation is fewer than five lines, it is classified as a citation and shall be written as follows:

According to Guenther (1999), the minimum requirement for eucalyptus oil is a cineole content of 70%.

Or:

The minimum requirement for eucalyptus oil is a cineole content of 70% (Guenther, 1999).

Citation writing shall commence with the author's surname followed by the year of publication.

- One author: Kim (2002) or (Kim, 2002)
- Two authors: Kim and Lee (2002) or (Kim and Lee, 2002)
- Three or more authors: Miller et al. (2002) or (Miller et al., 2002)
- Multiple articles by the same author(s) in the same year: Smith et al. (2002a) / Smith et al. (2002b)

5.3.8 Illustrations

An illustration is a form of presenting information in the form of tables, graphs, flowcharts, photographs, or figures. Well-crafted illustrations facilitate more effective presentation of information, enabling the avoidance of excessively long sentences and thereby improving the comprehensibility of the text.

a. Tables

Tables are used to present data and information in a more concise format. Each table shall be assigned a sequential number using Arabic numerals (1, 2, 3, etc.), preceded by the chapter number and a full stop, followed by the sequential table number and a full stop. The title of a table comprising a single line shall be typed centre-aligned, whereas the title of a table exceeding one line shall be typed left-aligned.

The table title shall be placed above the table, written in lowercase (except for the initial letter), not in boldface, and not terminated with a full stop. Where a table title exceeds one line, the subsequent line shall be typed in single spacing, commencing beneath the initial letter of the table title. For example, the first table in Chapter II shall follow the format shown in Figure 5.1. Where a table has been modified from a foreign-language source, the phrase "modified from" may be added to the table title.

Table 2.1. Orthogonal design and analysis of acid hydrolysis of corn husk at varying acid concentrations, corn fibre to sulphuric acid ratios, durations, and temperatures — modified from Xiao et al., 2018

No.	Acid Concentration (M)	Corn Fibre:Sulphuric Acid Ratio (w:v)	Duration (hours)	Temperature (°C)	Total Reducing Sugar (g/L)
1	0.2	1:10	2	90	4.83
2	0.2	1:15	4	100	12.36
3	0.2	1:20	6	110	16.48
4	0.2	1:25	8	120	32.81
5	0.3	1:10	4	110	21.59
6	0.3	1:15	2	120	36.82
7	0.3	1:20	8	90	11.93
8	0.3	1:25	6	100	13.92
9	0.4	1:10	6	120	50.67
10	0.4	1:15	8	110	28.55
11	0.4	1:20	2	100	12.39
12	0.5	1:10	8	100	18.86
13	0.5	1:20	4	120	40.0
14	0.5	1:25	2	110	25.43
k_1	16.62	23.99	19.87	11.43	
k_2	21.07	23.87	21.29	14.38	
k_3	25.71	20.20	24.70	23.01	
k_4	25.51	20.85	23.04	40.08	
R	9.09	3.79	4.83	28.65	

Note: The values k_1 – k_4 represent the mean total reducing sugar for each factor at levels 1–4, respectively; R is the difference between the maximum and minimum k values for each factor. A larger R value indicates a greater influence of the factor on the process.

Figure 5.1 Example of the first table in Chapter II

A table may be placed on a separate page following the text page that introduces it, or it may be placed on the same page as the preceding text. When placed on a separate page, the table should be centred on the page, equidistant from the left and right margins, and must not extend beyond the page margins. This requirement also applies to tables in the Appendices. Where a table is small, more than one table may appear on a single page. Tables may be placed in portrait or landscape orientation (depending on their size). Where a table cannot be presented on a single page, the remainder of the table may continue on the following page, with the column headers repeated.

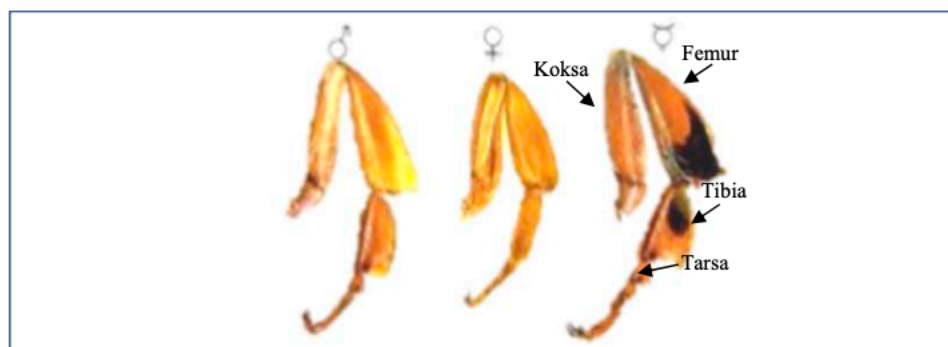
The spacing between the last paragraph of text preceding the table title shall be triple-spaced. The

spacing between the last line of a table and the text paragraph below shall also be triple-spaced. The contents of a table may be typed using variable fonts and spacing (single to double spacing). Sources and other required notes for the table shall be written directly below the table in single spacing, using Times New Roman, 10-point size.

b. Figures

The presentation of research data in the form of graphs, flowcharts, photographs, or figures in research or literature studies must take into account their relevance to the research or literature study topic. Some data need not be presented in the Body Section and may instead be placed in the Appendices. Figure numbering follows the same conventions as table numbering. The figure title and its caption shall be placed 1.5 spaces below the figure, typed in lowercase (except for the initial letter), not in boldface, and not terminated with a full stop. Where a figure title exceeds one line, it shall be typed starting from the left margin in single spacing. The second line shall commence beneath the initial letter of the figure title. However, where a figure title comprises only one line, it shall be placed at the centre of the page.

As with tables, each figure may be placed on a separate page, apart from the text. Where a figure is taken from another source, the source must be cited at the end of the figure caption and enclosed in parentheses. For example, the third figure in Chapter II that has been modified from a foreign-language source may include the phrase "modified from" in the figure title, as illustrated in Figure 5.2.



(Figure 2.3. Morphology of the hind leg of a stingless bee — modified from Quezada-Euan, 2018)

Figure 5.2 Example of the third figure in Chapter II modified from a foreign-language source

Black-and-white or colour photographs and figures originating from other literature sources are recommended to be scanned at a minimum resolution of 300 dpi. Figure placement follows the same rules as table placement. All forms of illustrations and their captions shall be placed at the centre of the page and must not extend beyond the page margins.

c. Selection of Graph Types

Research data may be presented using various types of graphs, depending on the data type and the purpose of presentation. Guidelines regarding the graphs to be used include:

- i. **Histogram:** typically used to compare results or values; either vertical or horizontal histograms may be employed.
- ii. **Pie chart:** used when the author does not prioritise the precise magnitudes of the components but rather

emphasises the relationships among the various components and their composition.

- iii. **Line graph**: used to illustrate the relationship between the dependent variable on the y-axis and the independent variable on the x-axis, with the dependent variable changing in accordance with changes in the independent variable.

d. Flowcharts

This form of illustration is used to depict the stages of an activity, cause-and-effect relationships, or the interconnections between one activity or process and another, also referred to as systems analysis. The conventions for writing flowchart titles follow those for figure titles.

e. Writing Equations

Equations may take the form of mathematical formulae, chemical reactions, and the like. Equations must be written in the standard mathematical format, even if they comprise only a single line. All mathematical equations shall be written with a tab of 1.5 cm from the left margin and must bear a number placed to the right, flush with the right margin.

Example:

$$(2.3) f = \mu_k \cdot N$$

where:

- f : kinetic friction force (N)
- μ_k : coefficient of kinetic friction
- N : normal force (N)

Note on equation numbering: The numeral 2 indicates that the equation appears in Chapter II, while the numeral 3 indicates that it is the third mathematical equation written in Chapter II.

5.4 Reference Sources And Writing The Bibliography

The bibliography shall be prepared in accordance with APA (American Psychological Association) style. To facilitate the preparation of the bibliography, students are encouraged to use reference manager software such as EndNote, Mendeley, Zotero, or similar tools, with output formatted in APA style. The order of reference types is as follows:

a. Research Article

Pan, Y., Yuan, X., Jiang, L., Yu, H., Zhang, J., Wang, H., & Zeng, G. (2018). Recent advances in synthesis, modification and photocatalytic applications of micro/nano-structured zinc indium sulfide. *Chemical Engineering Journal*, 354, 407–431.

b. Review Article

van der Heijden, A. E. D. M. (2018). Developments and challenges in the manufacturing, characterization and scale-up of energetic nanomaterials – A review. *Chemical Engineering Journal*, 350, 939–948.

c. Book Chapter

March, G. A., Garcia-Loygorri, M. C., Eiros, J. M., Bratos, M. A., & Ortiz de Lejarazu, R. (2018).

d. Monograph in a Handbook

Doig, A. J., Errington, N., & Iqbalsyah, T. M. (2005). Stability and design of alpha helices. In J. Buchner and T. Kiefhaber (Eds.), *Protein Folding Handbook Part I*. Wiley-VCH, Weinheim (pp. 1–25).

e. Textbook

Strang, G. (2009). *Introduction to Linear Algebra* (4th ed.). Wellesley Cambridge Press, London, UK.

f. Translated Book

Day, R. A., & Underwood, A. L. (1998). *Analisis Kimia Kuantitatif* (6th ed.). Translated from *Quantitative Analysis*, by Iis Sofyan. Penerbit Erlangga, Jakarta.

g. Conference Proceedings

Cloyd, A. M. (2014). Surveying students: A look at citation habits of college students. In *Proceedings of the EasyBib Info Lit Conference* (pp. 241–248). New York City: EasyBib Publishing.

h. Encyclopaedia

Pourkomailian, B. (2014). International control of microbiology. *Encyclopedia of Food Microbiology*, 377–381.

i. Final Project, Thesis, Dissertation

Nurinayah, W. R. (2021). *Kekayaan Jenis Kelulut (Apidae: Meliponinae) di Stasiun Penelitian Soraya, Kawasan Ekosistem Leuser* (Final Project). Universitas Syiah Kuala, Banda Aceh.

j. Article in a Popular Scientific Magazine

Print version:

Villasenor, J. (2010, August). The hacker in your hardware: The next security threat. *Scientific American*, 23–28.

Online version:

Schaefer, N. K., & Shapiro, B. (2019, September 6). New middle chapter in the story of human evolution. *Science*, 365(6457), 981–982. <https://doi.org/10.1126/science.aay3550>

k. Newspaper

Print version:

Bakar, B. A., & Fitriana, N. (2010, 9 August). Menuju swasembada pangan. *Serambi Indonesia*, p. 16.

Online version:

Becker, E. (2001, August 27). Prairie farmers reap conservation's rewards. *The New York Times*, pp. 12–90. Retrieved from <http://www.nytimes.com>.

l. Websites

Only information that identifies an author may be cited; the hyperlink displayed must specifically contain the information in question.

Web page on a media website (with publication date):

Toner, K. (2020, September 24). When Covid-19 hit, he turned his newspaper route into a lifeline for senior citizens. *CNN*. <https://www.cnn.com/2020/06/04/us/coronavirus-newspaper-deliveryman-groceries-senior-citizens-cnnheroes-trnd/index.html>

Web page on a website (with access date):

U.S. Census Bureau. (n.d.). U.S. and world population clock. U.S. Department of Commerce. Retrieved

Note: Citations from Wikipedia and similar websites should be avoided unless the article clearly identifies an author.

5.5 Language

The Indonesian language used in writing the Research Proposal and the Final Project Report shall be standard written language (*bahasa tulis baku*). Standardisation is reflected in the accuracy, directness, and completeness of the elements employed, as well as in the precision of spelling and punctuation. The language used must be efficient and effective. Efficient language is language that adheres to the standardised or recognised conventions while employing economy of words and expressions. In writing, students must be capable of demonstrating logical connections between sentences, including cause-and-effect relationships, parallelism, and elaboration upon a given statement.

The correct use of spelling and punctuation prevents alternative interpretations of the words or sentences intended in the text. Proper use of the Indonesian language must be guided by Ministerial Regulation of Education and Culture No. 50/2015 concerning the *Pedoman Umum Ejaan Bahasa Indonesia* (PUEBI — General Guidelines for Indonesian Spelling; available at <https://puebi.readthedocs.io/en/latest/>) (Appendix 18).

APPENDICES

Appendix 1. Administrative Forms for the Final Project/Thesis

Form PEN-01: Topic Proposal for Final Project/Thesis

Banda Aceh,

To: Final Project/Thesis Coordinator, Study Programme of

Faculty of Mathematics and Natural Sciences, Universitas Syiah Kuala

Re: Topic Proposal for Final Project/Thesis*

Enclosures: 1. Most recent academic transcript; 2. Course Registration Form (KRS)

Dear Sir/Madam,

I, the undersigned:

Field	Details
Full name	:
Place/date of birth	:
Student ID Number (NPM)	:
Study Programme	:
Total credit hours completed	:
Cumulative Grade Point Average	:

Grades in courses related to the Final Project/Thesis* topic:

hereby propose the following research topic:

The research will be conducted at:

with an estimated duration for the Final Project/Thesis* of: months.

As prospective supervisors, I propose:

No.	Full Name and Title / Employee ID (NIP)	Functional Position	Faculty/Institution of Origin	Status
1. NIP.			Supervisor I
2. NIP.			Supervisor II

Thank you for your kind consideration.

Acknowledged by:	Proposer:
Academic Adviser	
..... NIP.NPM.

Note: Delete as appropriate.

Form PEN-02: Declaration of Willingness to Supervise a Final Project/Thesis**DECLARATION OF WILLINGNESS TO SUPERVISE A FINAL PROJECT/THESIS***

We, the undersigned, hereby declare our willingness to supervise the Final Project/Thesis* of the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Research topic	:

Full Name and Title / Employee ID (NIP)	Functional Position	Faculty/Institution of Origin	Status
..... NIP.			Supervisor I
..... NIP.			Supervisor II

The supervision is estimated to be completed within months.

This declaration is made for use as required.

Banda Aceh,

Supervisor I,	Supervisor II,
..... NIP. NIP.

Note: Delete as appropriate.

Form PEN-02 B: Declaration of Willingness to Supervise a Final Project/Thesis — For Lecturers External to USK or Non-Lecturers within USK

DECLARATION OF WILLINGNESS TO SUPERVISE A FINAL PROJECT/THESIS*

(For Lecturers External to USK or Non-Lecturers within USK)

I, the undersigned:

Field	Details
Full name	:
Employee ID (NIP) / Employee number or equivalent	:
Institution of origin	:
Length of service at institution	:
Highest educational qualification	:
Area of expertise	:

hereby declare my willingness to supervise the Final Project/Thesis* of the following FMIPA student:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Research topic	:

This declaration is made for use as required.

Banda Aceh,

.....
NIP.

Note: Delete as appropriate.

Form PEN-03: Appointment of Final Project/Thesis Supervisors

[Letterhead]



MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
 UNIVERSITAS SYIAH KUALA
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES
 STUDY PROGRAMME OF
Jl. Tgk. Syech Abdurrauf No. 3, USK Campus, Darussalam, Banda Aceh 23111

APPOINTMENT OF FINAL PROJECT/THESIS SUPERVISORS*

No.: /H11.1.28.X/DT/20..

The Coordinator of the Study Programme of FMIPA Universitas Syiah Kuala, having considered the declarations of willingness to supervise, hereby appoints the persons listed below as supervisors of the Final Project/Thesis* for the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Research Topic	:

Supervisors:

Name / Employee ID (NIP)	Faculty/Institution of Origin	Status
..... NIP.		Supervisor I
..... NIP.		Supervisor II

This appointment is issued for use as appropriate.

Banda Aceh,
 Study Programme Coordinator,

.....
 NIP.

Copy to:

1. The supervisors concerned
2. The student concerned

Note: Delete as appropriate.

Form PEN-04_S1: Assessment of the Research Proposal Seminar (Undergraduate)**ASSESSMENT OF THE RESEARCH PROPOSAL SEMINAR**

Research Proposal Title:

Presenter:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Seminar Date	:
Seminar Chairperson	:

No.	Assessment Criteria	Weighting (%)	Score	Weighted Score (Weighting × Score)
1	Research problem and methodology	25		
2	Relevance of literature	15		
3	Writing quality of the research proposal (content, language, format)	20		
4	Mastery of subject matter and foundational knowledge related to the research	20		
5	Presentation technique and communication skills	20		
	TOTAL			

Notes:

1. Scores shall be entered as numerals from 0–100.
2. A student shall be deemed eligible to proceed to the next stage if the average numerical score falls within the BC category or above.
3. The standard deviation (SD) of scores among the examiners must be ≤ 5 . Where the SD deviates, the assessment must be repeated.
4. Grade categories: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$; $60 \leq BC < 69$.

Banda Aceh,
Assessor,

.....

NIP.

Form PEN-04_S2: Assessment of the Thesis Proposal Seminar (Master's)**ASSESSMENT OF THE THESIS PROPOSAL SEMINAR**

Thesis Proposal Title:

Presenter:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Seminar Date	:
Seminar Chairperson	:

No.	Assessment Criteria	Weighting (%)	Score	Weighted Score (Weighting × Score)
1	Research problem and methodology	30		
2	Relevance of literature	25		
3	Writing quality (content, language, format)	15		
4	Mastery of subject matter and foundational knowledge related to the research	20		
5	Presentation technique and communication skills	10		
	TOTAL			

Notes:

1. Scores shall be entered as numerals from 0–100.
2. A student shall be deemed eligible to proceed to the next stage if the average numerical score falls within the B category or above.
3. The standard deviation (SD) of scores among the examiners must be ≤ 5 . Where the SD deviates, the assessment must be repeated.
4. Grade categories: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$.

Banda Aceh,
Assessor,

.....

NIP.

Form PEN-05: Minutes of the Research Proposal/Thesis Proposal Seminar

MINUTES OF THE RESEARCH PROPOSAL/THESIS PROPOSAL SEMINAR*

On this day,, the of,, the Research Proposal/Thesis Proposal* Seminar was held at the Study Programme of.....FMIPA Universitas Syiah Kuala, for the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Research Proposal/Thesis Title	:

Based on the average score of the Examination Committee, the above-named student is hereby declared:

PASS / FAIL*

With a letter grade category of: **A / AB / B / BC***

The assessment by the Examination Committee is as follows:

No.	Name / Employee ID (NIP)	Examiner Status	Signature	Score
1		Chairperson	1.	
2		Secretary	2.	
3		Member	3.	
4		Member	4.	
		TOTAL		
		AVERAGE		

Notes:

Banda Aceh,
Chairperson of the Examination Committee,

.....
NIP.

*Delete as appropriate.

Grade categories: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$; $60 \leq BC < 69$.

Form PEN-06: Endorsement of the Research Proposal/Thesis Proposal

Letterhead]



MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
UNIVERSITAS SYIAH KUALA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
STUDY PROGRAMME OF
Jl. Tgk. Syech Abdurrauf No. 3, USK Campus, Darussalam, Banda Aceh 23111

ENDORSEMENT OF THE RESEARCH PROPOSAL/THESIS PROPOSAL

No.: /H11.1.28.X/DT/20..

The Coordinator of the Study Programme of Faculty of Mathematics and Natural Sciences, Universitas Syiah Kuala, hereby certifies that the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:

With supervisors:

Name / Employee ID (NIP)	Faculty/Institution of Origin	Status
..... NIP.		Supervisor I
..... NIP.		Supervisor II

based on the results obtained at the Research Proposal/Thesis Proposal* Seminar held on....., is hereby authorised to proceed with the research as appropriate.

Banda Aceh,
Study Programme Coordinator,

.....
NIP.

Note: This endorsement shall form part of the approved Research Proposal prior to distribution.

*Delete as appropriate.

Form PEN-07: Final Project/Thesis Supervision Log

SUPERVISION LOG FOR FINAL PROJECT/THESIS*

Semester Academic Year /

Field	Details
Student Name	:
Student ID Number (NPM)	:
Study Programme	:
Research Title	:

No.		Topics Discussed	Supervisor I Signature	Supervisor II Signature

Banda Aceh,
Study Programme Coordinator,

.....
NIP.

Enclosure: Research logbook

Note: Delete as appropriate.

Form PEN-08_S1: Assessment of the Final Project Results Seminar (Undergraduate)

ASSESSMENT OF THE FINAL PROJECT RESULTS SEMINAR

Final Project Title:

Presenter:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Seminar Date	:
Seminar Chairperson	:

No.	Assessment Criteria	Weighting (%)	Score	Weighted Score (Weighting × Score)
1	Consistency of the Final Project Report with the Research Proposal	25		
2	Ability to explain research data and results			
	a. Mastery of research methodology	10		
	b. Data/results integrity	20		
	c. Relationship between data/results and objectives	10		
	d. Ability to explain and analyse data relationships	10		
3	Presentation technique and communication skills	25		
	TOTAL			

Notes:

- Scores shall be entered as numerals from 0–100.
- A student shall be deemed eligible to proceed to the next stage if the average numerical score falls within the BC category or above.
- The standard deviation (SD) of scores among the examiners must be ≤ 5 . Where the SD deviates, the assessment must be repeated.
- Grade categories: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$; $60 \leq BC < 69$.

Banda Aceh,
Assessor,

.....
NIP.

Form PEN-08_S2: Assessment of the Thesis Results Seminar (Master's)**ASSESSMENT OF THE THESIS RESULTS SEMINAR**

Thesis Title:

Presenter:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Seminar Date	:
Seminar Chairperson	:

No.	Assessment Criteria	Weighting (%)	Score	Weighted Score (Weighting × Score)
1	Consistency between the Thesis Report and the Thesis Proposal			
	a. Title and results	5		
	b. Objectives and methodology	5		
	c. Methods and results	5		
2	Ability to explain research results			
	a. Mastery of research methodology	15		
	b. Data/results integrity	20		
	c. Relationship between data/results and objectives	15		
	d. Ability to explain and analyse data relationships	15		
3	Presentation technique and communication skills			
	a. Structure/organisation	10		
	b. Presentation technique	5		

	c. Grammar and etiquette	5		
	TOTAL			

Notes:

- a. Scores shall be entered as numerals from 0–100.
- b. A student shall be deemed eligible to proceed to the next stage if the average numerical score falls within the BC category or above.
- c. The standard deviation (SD) of scores among the examiners must be ≤ 5 . Where the SD deviates, the assessment must be repeated.
- d. Grade categories: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$.

Banda Aceh,
Assessor,

.....
NIP.

Form PEN-09: Minutes of the Final Project/Thesis Results Seminar

MINUTES OF THE FINAL PROJECT/THESIS RESULTS SEMINAR*

On this day,, the of,, the Results Seminar was held at the Study Programme of FMIPA Universitas Syiah Kuala, for the following student:

Field	Details
Name	:
Place/Date of Birth	:
Student ID Number (NPM)	:
Study Programme	:
Final Project/Thesis Title*	:

Based on the average score of the Examination Committee, the above-named student is hereby declared:

PASS / FAIL*

With a letter grade category of: **A / AB / B / BC***

The assessment by the Examination Committee is as follows:

No.	Name / Employee ID (NIP) / Rank	Examiner Status	Signature	Score
1		Chairperson	1.	
2		Secretary	2.	
3		Member	3.	
4		Member	4.	
		TOTAL		
		AVERAGE		

Notes:

Banda Aceh,
Chairperson of the Examination Committee,

.....
NIP.

*Delete as appropriate.

Grade categories: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$; $60 \leq BC < 69$.

Form PEN-10: Certificate of Passing the Final Project/Thesis Results Seminar



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UNIVERSITAS SYIAH KUALA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
STUDY PROGRAMME OF
Jl. Tgk. Syech Abdurrauf No. 3, USK Campus, Darussalam, Banda Aceh 23111

CERTIFICATE OF PASSING THE FINAL PROJECT/THESIS RESULTS SEMINAR*

The Final Project/Thesis* Coordinator of the Study Programme ofFaculty of Mathematics and Natural Sciences, Universitas Syiah Kuala, hereby certifies that the following student:

Field	Details
Name	:
Place/Date of Birth	:
Student ID Number (NPM)	:
Study Programme	:
Final Project/Thesis Title*	:

has been declared to have passed the Final Project/Thesis *Results Seminar with a numerical score of ... and a letter grade of* The Final Project/Thesis Results Seminar was held on,

The above-named student is hereby authorised to proceed to the Undergraduate/Master's Defence*.

Banda Aceh,
Final Project/Thesis Coordinator

.....
NIP.

Note: This certificate shall serve as a prerequisite for the Undergraduate/Master's Defence.

*Delete as appropriate.

Form PEN-11: Proposal for the Undergraduate/Master's Defence/Recognition Examination Committee



MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
 UNIVERSITAS SYIAH KUALA
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES
 STUDY PROGRAMME OF
Jl. Tgk. Syech Abdurrauf No. 3, USK Campus, Darussalam, Banda Aceh 23111

Number: /H11.1.28.X/DT/20..

Banda Aceh,

Re: Proposal for the Undergraduate/Master's Defence/Recognition Examination Committee

To: The Dean
 Faculty of Mathematics and Natural
 Sciences Universitas Syiah Kuala
 Darussalam – Banda
 Aceh

Dear Sir/Madam, The Coordinator of the Study Programme of Faculty of Mathematics and Natural Sciences, Universitas Syiah Kuala, hereby proposes that the persons listed below be appointed as the Undergraduate/Master's Defence/Recognition Examination Committee for the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Final Project/Thesis Title	:
Day/Date/Time of Examination	:

No.	Name / Employee ID (NIP)	Faculty/Institution of Origin	Examiner Status
1			Chairperson
2			Secretary
3			Member
4			Member

Thank you for your kind attention and cooperation.

Study Programme Coordinator

NIP.

Form PEN-12: Appointment of the Undergraduate/Master's Defence/Recognition Examination Committee



MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
 UNIVERSITAS SYIAH KUALA
 FACULTY OF MATHEMATICS AND NATURAL SCIENCES
 STUDY PROGRAMME OF
Jl. Tgk. Syech Abdurrauf No. 3, USK Campus, Darussalam, Banda Aceh 23111

APPOINTMENT OF THE UNDERGRADUATE/MASTER'S DEFENCE/RECOGNITION EXAMINATION COMMITTEE*

Number: /H11.1.28/DT/20..

The Dean of the Faculty of Mathematics and Natural Sciences, Universitas Syiah Kuala, having considered the letter from the Chairperson of the Study Programme of FMIPA Universitas Syiah Kuala number /H11.1.28.X/DT/20 dated, hereby appoints the persons listed below as the Undergraduate/Master's Defence/Recognition* Examination Committee for the following student:

Field	Details
Name	:
Student ID Number (NIM)	:
Study Programme	:
Day/Date/Time of Examination	:
Final Project/Thesis Title*	:

Undergraduate/Master's Defence Examination Committee*:

No.	Name / Employee ID (NIP) / Rank	Faculty/Institution of Origin	Examiner Status
1			Chairperson
2			Secretary
3			Member
4			Member

This appointment is issued for use as appropriate.

Banda Aceh,
 Dean / Vice Dean for Academic Affairs

.....
 NIP.

Form PEN-13_S1: Assessment of the Undergraduate Defence

ASSESSMENT OF THE UNDERGRADUATE DEFENCE

Field	Details
Student Name	:
Student ID Number (NPM)	:
Study Programme	:
Defence Date	:
Examiner	:

No.	Assessment Criteria	Weighting (%)	Score	Weighted Score (Weighting × Score)
1	RESEARCH IMPLEMENTATION (<i>assessed by supervisors only</i>)			
	a. Discipline	10		
	b. Diligence	5		
	c. Thoroughness	5		
	d. Technical skills	10		
	Subtotal 1			
2	FINAL PROJECT REPORT WRITING (<i>assessed by supervisors and examiners</i>)			
	a. Content of the Final Project Report	20		
	b. Compliance with format (referring to the FMIPA Final Project Writing Guidelines)	5		
	c. Language (adherence to standard Indonesian / EYD)	5		
	Subtotal 2			
3	COMPREHENSIVE EXAMINATION (<i>assessed by supervisors and examiners</i>)			
	a. Mastery of research subject matter and foundational knowledge studied	30		
	b. Discussion ability	10		
	Subtotal 3			
	TOTAL (Subtotal 2 + Subtotal 3)			

Notes:

- a. Scores shall be entered as numerals from 0–100.
- b. A student shall be declared to have passed if the average numerical score falls within the BC category or above.
- c. The standard deviation (SD) of scores among the examiners must be ≤ 5 . Where the SD deviates, the assessment must be repeated.
- d. Grade categories: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$; $60 \leq BC < 69$.

Banda Aceh,
Assessor,

.....
NIP.

Form PEN-13_S2: Assessment of the Master's Defence

ASSESSMENT OF THE MASTER'S DEFENCE

Field	Details
Student Name	:
Student ID Number (NPM)	:
Study Programme	:
Defence Date	:
Examiner	:

No.	Assessment Criteria	Weighting (%)	Score	Weighted Score (Weighting × Score)
1	RESEARCH IMPLEMENTATION (<i>assessed by supervisors only</i>)			
	a. Discipline	10		
	b. Diligence	5		
	c. Thoroughness	5		
	d. Technical skills	10		
	Subtotal 1			
2	THESIS REPORT WRITING (<i>assessed by supervisors and examiners</i>)			
	a. Content of the Thesis Report	25		
	b. Compliance with format (referring to the FMIPA Final Project Writing Guidelines)	5		
	c. Language (adherence to standard Indonesian / EYD)	5		
	Subtotal 2			
3	COMPREHENSIVE EXAMINATION (<i>assessed by supervisors and examiners</i>)			
	a. Mastery of research subject matter and foundational knowledge studied	15		
	b. Discussion ability	20		
	Subtotal 3			
	TOTAL (Subtotal 2 + Subtotal 3)			

Notes:

- a. Scores shall be entered as numerals from 0–100.
- b. A student shall be declared to have passed if the average numerical score falls within the B category or above.
- d. The standard deviation (SD) of scores among the examiners must be ≤ 5 . Where the SD deviates, the assessment must be repeated.
- e. Grade categories: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$.

Banda Aceh,
Assessor,

.....
NIP.

Form PEN-14: Minutes of the Undergraduate/Master's Defence

MINUTES OF THE UNDERGRADUATE/MASTER'S DEFENCE*

On this day,, the of,, at Western Indonesian Time (WIB), the Undergraduate/Master's* Defence was held at the Study Programme of.....FMIPA Universitas Syiah Kuala, for the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Department/Study Programme	:
Final Project/Thesis Title	:

Based on the average score of the Examination Committee, the above-named student is hereby declared:

PASS / FAIL*

With a letter grade category of: **A / AB / B / BC*** Assessment components:

Assessment	Assessor / Employee ID (NIP)	Score	Weighting	Weighted Score	Signature
Research Implementation (Subtotal 1)	Supervisor I Name, NIP				
	Supervisor II Name, NIP				
	TOTAL				
	AVERAGE				
Report Writing and Oral Presentation (Subtotal 2 + 3)	Chairperson Name, NIP				
	Secretary Name, NIP				
	Member Name, NIP				
	Member Name, NIP				
	TOTAL				
	AVERAGE	× 0.75			
Results Seminar	AVERAGE	× 0.25			
	OVERALL AVERAGE				

Notes:

Banda Aceh,
Chairperson of the Examination Committee,

.....
NIP.

*Delete as appropriate.

Letter grade: $A \geq 87$; $78 \leq AB < 87$; $69 \leq B < 78$; $60 \leq BC < 69$.

Form PEN-13B_S1: Assessment of Undergraduate Final Project Recognition

ASSESSMENT OF UNDERGRADUATE FINAL PROJECT RECOGNITION

Field	Details
Student Name	:
Student ID Number (NPM)	:
Study Programme	:
Defence Date	:
Examiner	:
Publication Title	:
Journal Index	: SINTA (1/2) / Quartile (1/2/3/4)

No.	Assessment Criteria	Weighting (%)	Score	Weighted Score (Weighting × Score)
1	Publication type	30		
2	Content of the article	40		
3	Novelty and innovation	30		
	TOTAL			

Notes:

- Scores shall be entered as numerals from 0–100.
- A student shall be declared to have passed if the average numerical score falls within the AB category or above.
- The standard deviation (SD) of scores among the examiners must be ≤ 5 . Where the SD deviates, the assessment must be repeated.
- Grade categories: $A \geq 87$; $78 \leq AB < 86$; $C \leq 60$.

Banda Aceh,
Assessor,

.....
NIP.

Form PEN-13B_S2: Assessment of Master's Thesis Recognition

ASSESSMENT OF MASTER'S THESIS RECOGNITION

Field	Details
Student Name	:
Student ID Number (NPM)	:
Study Programme	:
Defence Date	:
Examiner	:
Publication Title	:
Journal Index	: Quartile (1/2)

No.	Assessment Criteria	Weighting (%)	Score	Weighted Score (Weighting × Score)
1	Publication type	30		
2	Content of the article	40		
3	Novelty and innovation	30		
	TOTAL			

Notes:

- a. Scores shall be entered as numerals from 0–100.
- b. A student shall be declared to have passed if the average numerical score falls within the AB category or above.
- c. The standard deviation (SD) of scores among the examiners must be ≤ 5 . Where the SD deviates, the assessment must be repeated.
- d. Grade categories: $A \geq 87$; $78 \leq AB < 86$; $C \leq 60$.

Banda Aceh,
Assessor,

.....
NIP.

Form PEN-14B: Minutes of the Final Project/Thesis Recognition Assessment

MINUTES OF THE FINAL PROJECT/THESIS RECOGNITION ASSESSMENT*

On this day,, the of,, at Western Indonesian Time (WIB), the Final Project/Thesis* Recognition Assessment was held at the Study Programme of.....FMIPA Universitas Syiah Kuala, for the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Department/Study Programme	:
Publication Title	:
Indexed in	: SINTA (1/2) or Quartile (1/2/3/4)*

Based on the average score of the Examination Committee, the above-named student is hereby declared:

PASS / FAIL*

With a letter grade category of: **A / AB / C***

Assessment components:

No.	Name / Employee ID (NIP) / Rank	Examiner Status	Signature	Score
1		Chairperson	1.	
2		Secretary	2.	
3		Member	3.	
4		Member	4.	
		TOTAL		
		AVERAGE		

Notes:

Banda Aceh,
Chairperson of the Examination Committee,

.....
NIP.

*Delete as appropriate.

Letter grade: $A \geq 87$; $78 \leq AB < 86$; $C \leq 60$.

Appendix 2. Assessment Rubric for the Research Proposal

RESEARCH PROPOSAL ASSESSMENT RUBRIC

The rubric below serves as a guide for assigning scores to each assessment component of the proposal. However, the combination of criteria within a given grade category may not always accommodate actual conditions. Accordingly, the expert judgement of the assessor plays a role in determining the appropriate grade category.

1. Research Problem and Methodology

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Research problem	Meets all of the following criteria: (1) clear, focused, and concise; (2) supported by a highly adequate background.	Meets two of the following criteria: (1) clear, focused, and concise; (2) supported by an adequate background.	Meets only one of the following criteria: (1) clear, focused, and concise; (2) supported by a reasonably adequate background.	Does not yet meet the following criteria: (1) clear, focused, and concise; (2) background is insufficiently adequate.	The research has no identifiable problem to investigate.
Research methodology	(1) Highly appropriate for addressing the research problem; (2) written with great clarity and coherence.	(1) Appropriate for addressing the research problem; (2) written with clarity and coherence. The methodology requires minor additions.	(1) Partially appropriate for addressing the research problem; (2) written with reasonable clarity. The methodology requires corrections and additional explanation.	The methodology employed is of limited utility in addressing the research problem. The methodology needs to be revised.	The methodology employed does not contribute to addressing the research problem.

2. Relevance and Currency of the Literature

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Quantity	Highly adequate to support: (1) problem background, (2) theoretical foundations, (3) research methodology. No additional literature required.	Adequate to support: (1) problem background, (2) theoretical foundations, (3) research methodology. However, some additional literature is still required.	Adequate to support two of the three components. Additional literature is still required.	Adequate to support only one of the three components. A substantial amount of additional literature is still required.	Inadequate to support the problem background, theoretical foundations, and research methodology.
Relevance /	Highly relevant to	Highly relevant to	Relevant to the	Of limited	Not relevant to

Currency	the research topic; the majority constitutes current literature.	the research topic; a substantial proportion constitutes current literature.	research topic; however, only a small proportion constitutes current literature.	relevance to the research topic; only a small proportion constitutes current literature.	the research topic; the majority is outdated.
Quality	All sources are primary literature (journals, reviews, and monographs) of good quality.	The majority of sources are primary literature (journals, reviews, and monographs), with only a small proportion being secondary sources (textbooks, theses/dissertations, proceedings).	The majority of the literature comprises textbooks, theses/dissertations, and proceedings, with only a small proportion being primary sources.	A proportion of the literature comprises textbooks, theses/dissertations, and proceedings, with additional sources from magazines, newspapers, and websites (without identified authors).	Nearly all literature is sourced from magazines, newspapers, and websites (without identified authors).

3. Writing Quality

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Content	(1) Very well organised and coherent; ideas are very easily understood. (2) Broad coverage of material, explained concisely and sharply. (3) Research methodology is highly adequate for achieving the research objectives.	(1) Well organised and coherent; ideas are easily understood. (2) Adequate coverage of material. (3) Research methodology is adequate for achieving the research objectives; only minor corrections needed.	(1) Reasonably well organised; ideas require oral explanation to be understood. (2) Reasonably adequate coverage; needs further development with additional literature. (3) Research methodology is adequate but requires minor corrections.	(1) Reasonably well organised; however, ideas are difficult to understand even with oral explanation. (2) Inadequate coverage; needs further development with additional literature. (3) Research methodology is inadequate and requires corrections.	(1) Poorly organised; ideas are difficult to understand. (2) Inadequate material coverage; needs to be supplemented. (3) Research methodology is inadequate for achieving the research objectives.

Language <i>(Referring to Chapter 5 of the FMIPA Final Project Guidelines)</i>	Fully meets all three criteria: (1) uses standard, direct, efficient, and effective written language; (2) uses correct spelling, capitalisation, and punctuation; (3) selects words and terminology appropriately. No corrections required.	Largely meets all three criteria (as above). A few errors remain that do not significantly disturb the reader. Minor corrections required.	Demonstrates effort to meet all three criteria (as above). However, many errors remain that disturb the reader. Moderately significant corrections required.	Many sections do not yet meet the prescribed criteria. Substantial corrections required.	Does not adequately meet the prescribed criteria. Comprehensive revision required.
Format <i>(Referring to Chapter 5 of the FMIPA Final Project Guidelines)</i>	Fully complies with the provisions of the FMIPA Final Project Writing Guidelines. No corrections required.	Largely complies with the provisions of the FMIPA Final Project Writing Guidelines; minor corrections required.	Partially complies with the provisions of the FMIPA Final Project Writing Guidelines. Moderately significant corrections required.	Many sections do not yet comply with the provisions of the FMIPA Final Project Writing Guidelines. Substantial corrections required.	Does not adequately comply with the provisions of the FMIPA Final Project Writing Guidelines. Complete rewriting required.

4. Mastery of Subject Matter and Foundational Knowledge

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Subject mastery	Able to explain all of the following directly, concisely, and correctly: (1) research problem background; (2) rationale for selecting the research methodology; (3) foundational theories related to the research.	Able to explain all of the following correctly, with guidance from the supervisors: (1) research problem background; (2) rationale for selecting the research methodology; (3) foundational theories related to the research.	Able to explain the majority of the following correctly, with guidance from the supervisors: (1) research problem background; (2) rationale for selecting the research methodology; (3) foundational theories related to the research.	Able to explain only a portion of the following, despite having received guidance from the supervisors: (1) research problem background; (2) rationale for selecting the research methodology; (3) foundational theories related to the research.	Has difficulty explaining: (1) research problem background; (2) rationale for selecting the research methodology; (3) foundational theories related to the research, despite having received guidance from the supervisors.

5. Presentation Technique and Communication Skills

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Organisation	Presentation is: (1) very well organised and coherent; (2) supported by excellent visual aids; (3) presents all facts within the allotted time.	Presentation is: (1) well organised and coherent; (2) supported by good and easily understandable visual aids; (3) presents most facts within the allotted time.	Presentation is: (1) reasonably well organised and coherent; (2) supported by adequate visual aids; (3) presents most facts; allotted time exceeded.	Presentation: (1) demonstrates effort to be well organised and coherent; (2) visual aids are reasonably good; (3) presents only some facts; allotted time exceeded.	No clear organisation. Facts are not well presented. Visual aids need improvement.
Content	(1) Highly accurate and comprehensive; (2) very easily understood; (3) generates new ideas.	(1) Accurate and comprehensive; (2) easily understood; (3) adds to the audience's knowledge.	(1) Accurate but incomplete; (2) facts are implicit, making it difficult for the audience to understand; (3) does not add new insight on the topic.	(1) Insufficiently accurate owing to incompleteness; (2) difficult to understand; (3) does not enhance the audience's understanding.	(1) Inaccurate and overly general; (2) difficult to understand; (3) information is occasionally misleading.
Communication skills	(1) Speaks enthusiastically and confidently without referring to notes; (2) attends to questioners and directs answers to them; (3) polite.	(1) Speaks calmly without referring to notes; (2) attends to questioners and directs answers to them; (3) polite.	(1) Speaks calmly, occasionally referring to notes; (2) attends to questioners and directs answers to them; (3) polite.	(1) Speaks in a flat, monotonous manner, frequently referring to notes; (2) gives limited attention to questioners; (3) reasonably polite.	(1) Nervous and heavily reliant on notes; (2) gives limited attention to questioners; (3) reasonably polite.

Appendix 3. Revision Sheet for the Final Project/Thesis Research Proposal



MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
UNIVERSITAS SYIAH KUALA
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STUDY PROGRAMME OF
Jl. Tgk. Syech Abdurrauf No. 3, USK Campus, Darussalam, Banda Aceh 23111

REVISION SHEET — FINAL PROJECT/THESIS RESEARCH PROPOSAL

Hereby, the Research Proposal Seminar Committee for the Final Project (TA)/Thesis of the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Academic Adviser	:
Seminar Date	:
Proposal Title	:

declares its approval of the revisions to the Final Project/Thesis Research Proposal, which may now proceed to the writing of the Final Project/Thesis.

No.	Name of Supervisor/Examiner*	Suggestions/Comments	Remarks	Signature
1				
2				
3				
4				

*Delete as appropriate.

Appendix 4. Assessment Rubric for the Results Seminar

RESULTS SEMINAR ASSESSMENT RUBRIC

The rubric below serves as a guide for assigning scores to each assessment component of the Results Seminar. However, the combination of criteria may not always fall within a single grade category. Accordingly, the expert judgement of the assessor plays a role in determining the appropriate grade category.

1. Consistency of the Final Project Report with the Research Proposal

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Consistency with the Proposal	Research is conducted consistently with what was proposed in the Research Proposal.	There are minor changes to the objectives and/or methodology; the reason for the changes can be satisfactorily explained.	There are changes to the objectives and methodology; however, the research objectives remain unchanged. The reason for the changes can be well explained.	There are changes to the objectives and methodology with significant deviations. The reason for the changes can be explained acceptably.	The research was conducted without reference to the Final Project Proposal, without a satisfactory explanation.

2. Ability to Explain Research Data

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Mastery of research methodology	Able to explain all of the following directly, concisely, and correctly: (1) the implementation stages of the research; (2) the theoretical basis underlying the research methodology.	Able to explain all of the above correctly, with guidance from the supervisors.	Able to explain the majority of the above correctly, with guidance from the supervisors.	Able to explain only a portion of the above, despite having received guidance from the supervisors.	Unable to explain: (1) the implementation stages of the research; (2) the theoretical basis underlying the research methodology, despite having received guidance from the supervisors.
Data/results integrity	(1) Research methodology is applied correctly, yielding consistent data/results. (2) All calculations and data presentations are performed accurately and precisely.	(1) Research methodology is applied correctly; the majority of data/results obtained are consistent. (2) Most calculations and data	(1) Most research methodology is applied correctly; some data/results are inconsistent. (2) Some calculations and data presentations are	(1) Most research methodology is not applied correctly, resulting in inconsistent data/results. (2) Most calculations and data	Indication of data fabrication.

		presentations are performed accurately and precisely.	performed with insufficient accuracy and precision. Corrections needed.	presentations lack accuracy and precision. Corrections needed.	
Relationship between data/results and objectives	All data/results obtained explain the research objectives very well.	All data/results obtained explain the research objectives well.	Most data/results obtained explain the research objectives well.	Data/results obtained are of limited utility in explaining the research objectives.	Data/results obtained cannot be used to explain the research objectives.
Ability to explain and analyse data relationships	Able to explain all of the following directly, concisely, and correctly: (1) trends in the data/results; (2) rationale for the data/results; (3) inter-relationships among the data/results.	Able to explain all of the above correctly, with guidance from the supervisors.	Able to explain the majority of the above correctly, with guidance from the supervisors.	Able to explain only a portion of the above, despite having received guidance from the supervisors.	Has difficulty explaining: (1) trends in the data/results; (2) rationale for the data/results; (3) inter-relationships among the data/results, despite having received guidance from the supervisors.

3. Presentation Technique and Communication Skills

(The rubric for this section is identical to that described in Appendix 2a, Section 5: Presentation Technique and Communication Skills. The same five-grade descriptors for Organisation, Content, and Communication Skills apply.)

Appendix 5. Assessment Rubric for the Undergraduate/Master's Defence

UNDERGRADUATE DEFENCE ASSESSMENT RUBRIC

The rubric below serves as a guide for assigning scores to each assessment component of the Undergraduate Defence. However, the combination of criteria may not always fall within a single grade category. Accordingly, the expert judgement of the assessor plays a role in determining the appropriate grade category.

1. Research Implementation (Assessed by supervisors only)

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Discipline	Always punctual and completes all assigned tasks on time.	Mostly punctual; completes most tasks on time with minor delays.	Sometimes punctual; several tasks completed with delays.	Frequently late; many tasks completed with significant delays.	Rarely punctual; most tasks not completed on time.
Diligence	Demonstrates exceptional persistence and consistent effort throughout the research.	Demonstrates good persistence and effort with occasional lapses.	Demonstrates adequate persistence and effort.	Demonstrates limited persistence; requires frequent reminders.	Demonstrates insufficient persistence; minimal effort shown.
Thoroughness	Research work is conducted with exceptional care and precision; no significant errors.	Research work is conducted with good care and precision; minor errors present.	Research work is conducted with adequate care; some errors present.	Research work shows limited care; many errors present.	Research work shows insufficient care; numerous significant errors present.
Technical skills	Demonstrates exceptional technical skills in conducting the research.	Demonstrates good technical skills in conducting the research.	Demonstrates adequate technical skills in conducting the research.	Demonstrates limited technical skills; requires frequent guidance.	Demonstrates insufficient technical skills for conducting the research.

2. Final Project/Thesis Report Writing (Assessed by supervisors and examiners)

(The rubric for Content, Language, and Format follows the same structure as Appendix 2a, Section 3: Writing Quality, with the same five-grade descriptors.)

3. Comprehensive Examination (Assessed by supervisors and examiners)

Component	A (≥87)	AB (78–86)	B (69–77)	BC (60–68)	C (<60)
Mastery of research subject matter and foundational	Demonstrates exceptional mastery of the research topic and foundational	Demonstrates good mastery; able to answer all questions correctly with	Demonstrates adequate mastery; able to answer most questions	Demonstrates limited mastery; able to answer only some questions, even	Demonstrates insufficient mastery; unable to answer questions

knowledge	knowledge; able to answer all questions directly, concisely, and correctly.	minimal guidance.	correctly with some guidance.	with guidance.	adequately despite guidance.
Discussion ability	Engages in discussion with exceptional depth, clarity, and critical thinking.	Engages in discussion with good depth and clarity.	Engages in discussion with adequate depth.	Engages in discussion with limited depth; arguments are superficial.	Unable to engage meaningfully in discussion.

Appendix 6. Assessment Rubric for Undergraduate Final Project Recognition

UNDERGRADUATE FINAL PROJECT RECOGNITION ASSESSMENT RUBRIC

The rubric below serves as a guide for assigning scores to each assessment component of the Undergraduate Final Project Recognition. However, the combination of criteria may not always fall within a single grade category. Accordingly, the expert judgement of the assessor plays a role in determining the appropriate grade category.

Publication Writing

Component	A (≥87)	AB (78–86)	C (<60)
Publication type	Meets the required journal qualifications (SINTA 1/2 or Q4).	Meets the required journal qualifications (SINTA 1/2 or Q4).	Meets the required journal qualifications (SINTA 1/2 or Q4) but academic ethics violations have been discovered.
Content of the article	(1) Organised comprehensively and coherently. (2) Excellent data presentation; in-depth, concise, and sharp discussion that is easy to understand, supported by highly adequate and up-to-date literature. (3) Research conclusions are highly consistent with the research problem and objectives.	(1) Organised comprehensively and coherently. (2) Good data presentation; good discussion that is easy to understand, supported by adequate yet somewhat outdated literature. (3) Research conclusions are consistent with the research problem and objectives.	(1) Poorly organised; ideas are difficult to understand. (2) Poor data presentation; inadequate discussion; comprehensive revision of the content is required. (3) Research conclusions are inconsistent with the research problem and objectives.
Novelty and innovation	Possesses excellent novelty and contribution to the field of study.	Possesses good novelty and contribution to the field of study.	Possesses novelty but does not contribute to the field of study.

Appendix 7. Assessment Rubric for Master's Thesis Recognition

MASTER'S THESIS RECOGNITION ASSESSMENT RUBRIC

The rubric below serves as a guide for assigning scores to each assessment component of the Master's Thesis Recognition. However, the combination of criteria may not always fall within a single grade category. Accordingly, the expert judgement of the assessor plays a role in determining the appropriate grade category.

Publication Writing

Component	A (≥ 87)	AB (78–86)	C (< 60)
Publication type	Meets the required journal qualifications (Q2).	Meets the required journal qualifications (Q2).	Meets the required journal qualifications (Q2) but academic ethics violations have been discovered.
Content of the article	(1) Organised comprehensively and coherently. (2) Excellent data presentation; in-depth, concise, and sharp discussion that is easy to understand, supported by highly adequate and up-to-date literature. (3) Research conclusions are highly consistent with the research problem and objectives.	(1) Organised comprehensively and coherently. (2) Good data presentation; good discussion that is easy to understand, supported by adequate yet somewhat outdated literature. (3) Research conclusions are consistent with the research problem and objectives.	(1) Poorly organised; ideas are difficult to understand. (2) Poor data presentation; inadequate discussion; comprehensive revision of the content is required. (3) Research conclusions are inconsistent with the research problem and objectives.
Novelty and innovation	Possesses excellent novelty and contribution to the field of study.	Possesses good novelty and contribution to the field of study.	Possesses novelty but does not contribute to the field of study.

Appendix 8. Cover and Title Page Format for the Proposal/Final Project Report/Thesis/Recognition Report

TITLE

(Times New Roman 18–20 pt, centre-aligned, bold, uppercase, 4 spaces from the top margin)

\<RESEARCH PROPOSAL\> / \<FINAL PROJECT\> / \<THESIS\> / RECOGNITION

(Times New Roman 16 pt, centre-aligned, bold, uppercase, 3 spaces after the last line of the title)

Submitted in partial fulfilment of the requirements for \<conducting the Final Project/Thesis research\> / \<the degree of Sarjana Sains/Magister Sains\>

(Times New Roman 12 pt, centre-aligned, 3 spaces after "Research Proposal/Final Project/Thesis")

By:

(Times New Roman 14 pt, centre-aligned, 3 spaces after the last line of "Submitted in partial fulfilment...")

FULL NAME

STUDENT ID NUMBER (NPM)

(Times New Roman 14 pt, centre-aligned, bold, uppercase, underlined, commencing 3 spaces after "By:")

(USK Logo, black, centre-aligned, positioned exactly between the student's name/NPM and the Study Programme/Department name)

STUDY PROGRAMME OF DEPARTMENT OF

FACULTY OF MATHEMATICS AND NATURAL SCIENCES

UNIVERSITAS SYIAH KUALA, BANDA ACEH

MONTH, YEAR

(Times New Roman 14 pt, centre-aligned, bold, uppercase, last line at the bottom margin)

Appendix 9. Endorsement Page Format

ENDORSEMENT

(Times New Roman 16 pt, centre-aligned, bold, uppercase, commencing 2 spaces from the top margin)

TITLE (in Indonesian)

(Times New Roman 16–18 pt, centre-aligned, bold, uppercase, 3 spaces after "ENDORSEMENT")

TITLE (in English)

(Times New Roman 16–18 pt, centre-aligned, bold, uppercase, 2 spaces after the last line of the Indonesian title; the English title is required only for the Final Project/Thesis Report)

By

(Times New Roman 14 pt, centre-aligned, commencing 3 spaces after the last line of the English title)

Name	:
Student ID Number (NPM)	:
Study Programme	:

(Times New Roman 12 pt, indented 3.5 cm, commencing 2 spaces after "By")

Approved by:	
Supervisor I,	Supervisor II,
Name — NIP.	Name — NIP.
Dean of FMIPA, Universitas Syiah Kuala	Acknowledge by, Study Programme Coordinator of, FMIPA Universitas Syiah Kuala
Name — NIP.	Name — NIP.

Passed the Research Proposal/Undergraduate Defence/Master's Defence on

\<date\>, \<month\>, \<year\>

Final Project/Thesis endorsed on \<date\>, \<month\>, \<year\>

(Times New Roman 12 pt, centre-aligned, at the bottom margin)

Note: The Dean's signature is not required for the proposal (the Study Programme Coordinator's signature is placed at the centre of the page).

Appendix 10. Plagiarism-Free Declaration

PLAGIARISM-FREE DECLARATION

I, the undersigned:

Field	Details
Full name	:
Place/date of birth	:
Student ID Number (NPM)	:
Study Programme	:
Faculty	:
Final Project/Thesis Title*	:

hereby declare truthfully that my Final Project/Thesis* Report bearing the title stated above is the original work of myself in collaboration with my supervisors and is free from plagiarism.

Should it subsequently be proven that this Final Project/Thesis* Report constitutes plagiarism, I am willing to accept the applicable sanctions at Universitas Syiah Kuala.

Banda Aceh,
Declarant,

Student Name
NPM.

Note: Delete as appropriate.

Appendix 11. Declaration

DECLARATION

The Declaration Page must be included for Thesis/Final Project research that forms part of a lecturer's research grant or where the research concept originates entirely from the lecturer. The declaration is prepared to prevent conflicts of interest regarding intellectual property rights. The statement in the Declaration may follow or be adapted from the example below.

The research for the completion of this Thesis/Final Project was fully/partially funded by the research grant under the name ofThe research data obtained are the property of

Banda Aceh,
Declarant,

Student Name
NPM

Appendix 12. Abstract Format (Indonesian)

ABSTRAK

(Times New Roman 14, centre-aligned, bold, uppercase, commencing 2 spaces from the top margin)

\[Abstract text — body of the abstract\]

(Times New Roman 12, justified, commencing 3 spaces below "ABSTRAK", maximum 250 words)

Kata kunci: keyword, keyword, keyword, keyword, keyword

(Times New Roman 12, justified, commencing 1 space after the last line of the abstract)

Notes:

1. The abstract shall be written in Indonesian, with a maximum of 250 words, providing a concise description of the research conducted, the methods employed, the significant results obtained, and the benefits of the research findings.
2. Keywords shall comprise 4–6 significant words to facilitate searching.

Appendix 13. Abstract Format (English)

ABSTRACT

(Times New Roman 14, centre-aligned, bold, uppercase, commencing 6 spaces below the keywords of the Indonesian abstract)

\[Abstract text — body of the abstract\]

(Times New Roman 12, justified, commencing 3 spaces below "ABSTRACT", maximum 250 words)

Keywords: keyword, keyword, keyword, keyword, keyword

(Times New Roman 12, justified, commencing 1 space after the last line of the abstract)

Notes:

1. The abstract shall be written in English, with a maximum of 250 words, providing a concise description of the research conducted, the methods employed, the significant results obtained, and the benefits of the research findings.
2. Keywords shall comprise 4–6 significant words to facilitate searching.

Appendix 14. Sample Acknowledgements

ACKNOWLEDGEMENTS

(Times New Roman 14, centre-aligned, bold, uppercase, 2 spaces from the top margin)

Praise be to Allah SWT, who has bestowed His blessings so that this Final Project/Thesis entitled "....." could be completed. Blessings and peace be upon the Prophet Muhammad SAW.

This Final Project/Thesis constitutes one of the requirements for the award of the Sarjana/Magister degree at the Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Syiah Kuala. The completion of this Final Project/Thesis would not have been possible without the assistance and encouragement of various parties, both morally and materially. On this occasion, gratitude is extended to:

1. Mr/Mrs A, as Dean of FMIPA *(Not required for the Proposal)*.
2. Mr/Mrs B, as Head of the Department of
3. Mr/Mrs C, as Coordinator of the Study Programme of
4. Mr/Mrs X, as Supervisor I, and Mr/Mrs Y, as Supervisor II, who have provided guidance and direction to the author in completing this Final Project/Thesis.
5. Mr/Mrs D and E, as members of the Examination Committee, who have provided valuable input and suggestions to the author in completing this Final Project/Thesis.
6. My father and mother, who have supported the author in completing studies at the Faculty of Mathematics and Natural Sciences, Universitas Syiah Kuala.
7. *(State other parties who directly contributed to the completion of the Final Project/Thesis.)*

It is hoped that this work may benefit the advancement of knowledge.

Banda Aceh,

Student Name
NPM.

Appendix 15. Table of Contents Format

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Appendix 16. Estimated Research Budget

ESTIMATED FINAL PROJECT/THESIS RESEARCH BUDGET

(Forms part of Chapter III: Research Methodology in the Research Proposal)

No.	Type of Expenditure*	Unit	Unit Price (Rp)	Total Price (Rp)
1.	Administration			
	- Stationery	ream, sheet, etc.		
	- Typing			
	- Photocopying			
	- Printing	bound copies, items, etc.		
	- Postage and correspondence			
2.	Materials and equipment (itemise)			
	- Consumable materials	g, kg, L, items, sets, specimens, etc.		
	- Equipment			
3.	Research operations			
	- Data analysis	samples, days, hours, etc.		
	- Laboratory			
	- Data processing and editing			
	- Literature searching			
4.	Field survey (if applicable)			
	- Travel	days, trips, return trips, etc.		
	- Meals			
	- Accommodation			
	TOTAL COST			

*Add items as required.

Appendix 17. Student Biodata

BIODATA

Field	Details
Name	:
Place, date of birth	:
Address	:
Father's name	:
Father's occupation	:
Mother's name	:
Mother's occupation	:
Parents' address	:

Educational History:

Level	School Name	Field of Study	Location	Year of Graduation
Primary School (SD)				
Lower Secondary School (SLTP)				
Upper Secondary School (SLTA)				
Diploma				

Publications:

No.	Title	Year	Publisher

Banda Aceh,

Student Name
NPM.

Appendix 18. Publication Consent and Embargo Declaration

PUBLICATION CONSENT AND EMBARGO DECLARATION FOR USK ACADEMIC COMMUNITY WORKS

I, the undersigned:

Field	Details
Name	:
NPM/NIP	:
Title	:
Faculty	:
Department	:
Study Programme	:

hereby consent to:

uploading the soft copy of my Final Project/Thesis in full (full-text) to the USK Library Repository, accessible via internet search engines for public access;

uploading the soft copy of my Final Project/Thesis partially — only certain sections (e.g., Cover, Endorsement Page, Abstract, Table of Contents, Introduction, and Conclusions) — to the USK Library Repository, accessible via internet search engines for public access;

not permitting any part of the Final Project/Thesis to be accessed online until (*write date, month, year; or indefinitely*) for the following reason:

and agree to provide or upload the full soft copy of the Final Project/Thesis to the USK Library in PDF format for private storage in a repository that is not accessible by search engines (e.g., Google).

This declaration is made for use as appropriate.

Banda Aceh,
Declarant,

(.....)

Acknowledged by:	
Supervisor	Study Programme Coordinator
(.....)	(.....)

*Tick (✓) one option.

Appendix 19. Sample Distribution Form for the Final Project/Thesis Report

MINISTRY OF HIGHER EDUCATION, SCIENCE, AND TECHNOLOGY
UNIVERSITAS SYIAH KUALA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
STUDY PROGRAMME OF

Jl. Tgk. Syech Abdurrauf No. 3, USK Campus, Darussalam, Banda Aceh 23111

**ACKNOWLEDGEMENT OF RECEIPT
FINAL PROJECT/THESIS/RECOGNITION REPORT**

We, the undersigned, hereby acknowledge receipt of the Thesis/Final Project/Recognition Report from the following student:

Field	Details
Name	:
Student ID Number (NPM)	:
Study Programme	:
Final Project/Thesis Title	:

Recipient	Quantity	Signature	Date of Receipt
Supervisor I Name, NIP			
Supervisor II Name, NIP			
Study Programme Coordinator of			
Name, NIP			

Appendix 20. Writing Conventions

Note: This appendix is a condensed reference guide to Indonesian spelling and writing conventions, based on the Pedoman Umum Ejaan Bahasa Indonesia (PUEBI — General Guidelines for Indonesian Spelling). The rules below govern the formal written Indonesian used in final projects, theses, and other academic documents submitted to FMIPA USK.

I. LETTER USAGE

A. Capital Letters

1. A capital letter is used as the first letter at the beginning of a sentence.
 - *Examples: Apa maksudnya? — Dia membaca buku. — Pekerjaan itu akan selesai dalam satu jam.*
1. A capital letter is used as the first letter of each element in a person's name, including epithets.
 - *Examples: Amir Hamzah — Jenderal Kancil — Alessandro Volta*
 - **Note:** A capital letter is *not* used for the first letter of a person's name that has become a common noun denoting a type or unit of measurement (e.g., *ikan mujair, mesin diesel, 5 ampere*). Likewise, a capital letter is not used for the first letter of words meaning 'son/daughter of' (such as *bin, binti, boru, van*) or for function words (e.g., *Abdul Rahman bin Zaini, Charles Adriaan van Ophuijsen, Mutiara dari Selatan*).
1. A capital letter is used at the beginning of a sentence within a direct quotation.
 - *Example: Adik bertanya, "Kapan kita pulang?"*
1. A capital letter is used as the first letter of each word in the names of religions, holy scriptures, and God, including references and pronouns for God.
 - *Examples: Islam — Alquran — Kristen — Alkitab — Hindu — Weda — Allah — Tuhan*
 - *Allah akan menunjukkan jalan kepada hamba-Nya. (Allah will show the way to His servant.)*
1. Capital letters in titles and honorifics:
 - a. A capital letter is used as the first letter of each element in an honorary, hereditary, religious, or academic title that precedes a person's name, including academic degrees that follow a person's name.
 - *Examples: Haji Agus Salim — Nabi Ibrahim — Doktor Mohammad Hatta — Agung Permana, Sarjana Hukum*
 - b. A capital letter is used as the first letter of each element in an honorary, hereditary, religious, or professional title, as well as a position or rank title, when used as a form of address.
 - *Examples: Selamat datang, Yang Mulia. — Terima kasih, Kiai. — Selamat pagi, Dokter.*
1. A capital letter is used as the first letter of each element in a position or rank title that is followed by a person's name or used in place of a specific person's name, an institution's name, or a place name.
 - *Examples: Wakil Presiden Jusuf Kalla — Perdana Menteri Nehru — Profesor Supomo — Sekretaris*

1. A capital letter is used as the first letter of the names of nations, ethnic groups, and languages.

- *Examples:* bangsa Indonesia — suku Dani — bahasa Bali
- **Note:** Names of nations, ethnic groups, or languages used as the base form of a derived word are not written with an initial capital letter (e.g., *pengindonesiaan kata asing, keinggris-inggrisan*).

1. Capital letters in dates and historical events:

a. A capital letter is used as the first letter of names of years, months, days, and holidays or holy days.

- *Examples:* bulan Agustus — hari Jumat — hari Lebaran

b. A capital letter is used as the first letter of each element in the name of a historical event.

- *Examples:* Konferensi Asia Afrika — Perang Dunia II — Proklamasi Kemerdekaan Indonesia
- **Note:** The first letter of a historical event reference that is not used as a proper name is not capitalised (e.g., *Perlombaan senjata membawa risiko pecahnya perang dunia*).

1. A capital letter is used as the first letter of a geographical name.

- *Examples:* Jakarta — Pulau Miangas — Asia Tenggara — Amerika Serikat — Bukit Barisan — Jawa Barat
- **Notes:**

(1) The first letter of a geographical term that is not a proper name is not capitalised (e.g., *berlayar ke teluk, mandi di sungai*).

(2) The first letter of a geographical proper name used as a common noun denoting a type is not capitalised (e.g., *jeruk bali — Citrus maxima, kacang bogor — Voandzeia subterranea*).

1. A capital letter is used as the first letter of every word (including all elements of a full reduplication) in the names of countries, institutions, bodies, organisations, or documents, except for function words such as *di, ke, dari, dan, yang, and untuk*.

- *Examples:* Republik Indonesia — Kitab Undang-Undang Hukum Pidana — Peraturan Presiden Republik Indonesia Nomor 16 Tahun 2010 tentang Penggunaan Bahasa Indonesia dalam Pidato Presiden dan/atau Wakil Presiden

1. A capital letter is used as the first letter of every word (including full reduplication elements) in titles of books, essays, articles, and papers, as well as names of magazines and newspapers, except for function words (*di, ke, dari, dan, yang, untuk*) that do not appear in the initial position.

- *Examples:* *Saya telah membaca buku Dari Ave Maria ke Jalan Lain ke Roma.* — *Tulisan itu dimuat dalam majalah Bahasa dan Sastra.* — *Dia agen surat kabar Serambi Indonesia.*

1. A capital letter is used as the first letter of each element in the abbreviation of an academic degree, rank, or form of address.

- *Examples:* S.H. (sarjana hukum) — S.S. (sarjana sastra) — M.Si. (magister sains) — K.H. (kiai haji) — Dr. (dokter) — Prof. (profesor)

1. A capital letter is used as the first letter of a kinship term used as a form of address or reference, such

as *bapak, ibu, kakak, adik, paman*, as well as other words or expressions used in address or reference.

- *Examples: "Kapan Bapak berangkat?" tanya Hasan. — Surat Saudara telah kami terima dengan baik.*

- **Notes:**

(1) Kinship terms that are not forms of address or reference are not capitalised (e.g., *Kita harus menghormati bapak dan ibu kita.*).

(2) The pronoun *Anda* (you, formal) is always written with an initial capital letter.

B. Italics

1. Italics are used to write the titles of books, names of magazines, or names of newspapers cited in writing, including in reference lists.

- *Examples: Salah Asuhan — Poedjangga Baroe — Cakrawala*

1. Italics are used to emphasise or specify a letter, part of a word, a word, or a group of words within a sentence.

- *Example: Huruf terakhir kata abad adalah d.*

1. Italics are used to write words or expressions in a regional language or a foreign language.

- *Examples: peusijuek (tepung tawar) — Garcinia mangostana — Weltanschauung*

- **Notes:**

(1) Proper names (such as names of persons, institutions, or organisations) in a foreign or regional language are not written in italics.

(2) In handwritten or typewritten manuscripts (not computer-processed), text to be printed in italics is indicated by underlining.

(3) A sentence or text in a foreign or regional language that is quoted directly within an Indonesian text is written in italics.

C. Bold Type

1. Bold type is used to emphasise a part of text that is already written in italics.

- *Example: Huruf **dh**, seperti pada kata **Ramadhan**, tidak terdapat dalam Ejaan Bahasa Indonesia yang Disempurnakan.*

1. Bold type may be used to emphasise parts of a composition, such as titles of books, chapters, or sub-chapters.

- *Example:*

1.1 Background and Problem Statement

1.1.1 Background

1.1.2 Problem Statement

1.2 Objectives

II. WORD FORMATION

A. Base Words

A base word is written as a single unit.

- *Examples: Kantor pajak penuh sesak. — Saya pergi ke sekolah. — Buku itu sangat tebal.*

B. Affixed Words

1. Affixes (prefixes, infixes, suffixes, and combinations of prefixes and suffixes) are written as one unit with their base forms.

- *Examples: berjalan — berkelanjutan — mempermudah — gemetar — lukisan*
- **Note:** Affixes borrowed from foreign elements, such as *-isme, -man, -wan, or -wi*, are written as one unit with their base forms (e.g., *sukuisme, seniman, kamerawan, gerejawi*).

1. Bound forms are written as one unit with the word that follows them.

- *Examples: adibusana — aerodinamika — antarkota — antibiotik — biokimia — infrastruktur — kontraindikasi — mancanegara — pascasarjana — proaktif — semiprofesional — tritunggal*
- **Notes:**

(1) A bound form followed by a word beginning with a capital letter or an abbreviation consisting of capital letters is joined with a hyphen (e.g., *non-Indonesia, pan-Afrikanisme, pro-Barat, anti-PKI*).

(2) The bound form *maha* followed by a derived word referring to a name or attribute of God is written separately with an initial capital letter (e.g., *Tuhan Yang Maha Pengasih — God the Most Compassionate*).

(3) The bound form *maha* followed by a base word referring to a name or attribute of God, except for the word *esa*, is written as one unit (e.g., *Tuhan Yang Mahakuasa — God the Almighty; but Tuhan Yang Maha Esa — God the One and Only*).

C. Reduplicated Forms

Reduplicated forms are written using a hyphen between their elements.

- *Examples: anak-anak — buku-buku — hati-hati — berjalan-jalan — terus-menerus — porak-poranda*
- **Note:** In the reduplication of compound words, only the first element is reduplicated (e.g., *surat kabar → surat-surat kabar; rak buku → rak-rak buku; kereta api cepat → kereta-kereta api cepat*).

D. Compound Words

1. The elements of a compound word (including specialised terms) are written separately.

- *Examples: duta besar — kambing hitam — orang tua — model linear — rumah sakit jiwa — persegi panjang*

1. A compound word that may cause ambiguity is written with a hyphen between its elements.

- *Examples: anak-istri pejabat (the official's wife and children) vs. anak istri-pejabat (the child of the official's wife)*

1. A compound word that is written separately remains written separately if it receives a prefix or a suffix alone.

- *Examples: bertepuk tangan — menganak sungai — garis bawah — sebar luaskan*

1. A compound word that receives both a prefix and a suffix simultaneously (a circumfix) is written as one unit.

- *Examples: dilipatgandakan — menggarisbawahi — menyebarluaskan — penghancurleburan — pertanggungjawaban*

1. A compound word that has become a fused unit is written as one unit.

- *Examples: acapkali — bagaimana — barangkali — beasiswa — bumiputra — kacamata — kilometer — matahari — olahraga — peribahasa — radioaktif — segitiga*

E. Syllabification (Word Division)

1. Syllabification of base words follows these rules:

a) If two consecutive vowels appear in the middle of a word, the division is made between the two vowels (e.g., *bu-ah, ma-in, ni-at, sa-at*).

b) The diphthongs *ai, au, ei, and oi* are not divided (e.g., *pan-dai, au-la, sur-vei, am-boi*).

c) If a consonant (including a consonant digraph) appears between two vowels in the middle of a base word, the division is made before the consonant (e.g., *ba-pak, la-wan, de-ngan, mu-ta-khir*).

d) If two consecutive consonants appear in the middle of a base word, the division is made between the two consonants (e.g., *Ap-ril, makh-luk, man-di, swas-ta*).

e) If three or more consonants appear in the middle of a base word, each representing a single sound, the division is made between the first and second consonants (e.g., *ul-tra, in-fra, ben-trok, in-stru-men*).

- **Note:** A consonant digraph representing a single sound is not divided (e.g., *bang-krut, ba-nyak, ikh-las*).

1. Syllabification of derived words is preferably done between the base form and its affixes.

- *Examples: ber-jalan — mem-bantu — ter-bawa — makan-an — letak-kan*

- **Notes:**

(1) Syllabification of affixed words whose base forms undergo a change is performed as with base words (e.g., *me-nu-tup, pe-no-long, pe-nye-but*).

(2) Syllabification of infix words is performed as with base words (e.g., *ge-lem-bung, ge-mu-ruh, te-lun-juk*).

(3) Syllabification that would leave a single letter at the beginning or end of a line is not permitted.

1. If a word consists of two or more elements and one of those elements can combine with another element, syllabification is done between the elements (e.g., *bio-grafi → bi-o-gra-fi; foto-kopi → fo-to-ko-pi; kilo-meter → ki-lo-me-ter; pasca-sarjana → pas-ca-sar-ja-na*).

-
1. A person's name consisting of two or more elements is divided between its elements at the end of a line. Abbreviations of proper names and titles consisting of two or more letters are not divided.

F. Prepositions

The prepositions *di*, *ke*, and *dari* are written separately from the word that follows them.

- *Examples: Di mana dia sekarang? — Mari kita berangkat ke kantor. — Ia berasal dari Pulau Penyengat.*

G. Particles

1. The particles *-lah*, *-kah*, and *-tah* are written as one unit with the word that precedes them.

- *Examples: Bacalah buku itu baik-baik! — Apakah yang tersirat dalam surat itu?*

1. The particle *pun* is written separately from the word that precedes it.

- *Example: Apa pun permasalahan yang muncul, dia dapat mengatasinya dengan bijaksana.*
- **Note:** The particle *pun* that forms part of a conjunction is written as one unit (e.g., *meskipun*, *walaupun*, *adapun*, *bagaimanapun*).

1. The particle *per*, meaning 'each', 'per', or 'starting from', is written separately from the word that follows it.

- *Examples: satu per satu — Rp50.000,00 per meter — per 1 Januari*

H. Abbreviations and Acronyms

1. Abbreviations of personal names, titles, forms of address, positions, or ranks are followed by a full stop after each element.

- *Examples: A.H. Nasution — W.R. Supratman — M.Si. — S.E. — Sdr. — Kol.*

1. Abbreviations and acronyms of institutional and organisational names:

a. An abbreviation consisting of the initial letters of each word in the name of a government or constitutional body, educational institution, organisation, or official document is written in capital letters without full stops.

- *Examples: NKRI — UI — PBB — WHO — PGRI*

b. An abbreviation consisting of the initial letters of each word that is not a proper name is written in capital letters without full stops.

- *Examples: PT (perseroan terbatas) — SD (sekolah dasar) — KTP (kartu tanda penduduk) — NIP (nomor induk pegawai)*

1. An abbreviation consisting of three or more letters (of common words) is followed by a full stop.

- *Examples: hlm. (halaman) — dll. (dan lain-lain) — dsb. (dan sebagainya) — dst. (dan seterusnya) — yth. (yang terhormat) — ttd. (tertanda)*

1. An abbreviation consisting of two letters commonly used in correspondence is followed by a full stop after each letter.

- *Examples:* a.n. (atas nama) — d.a. (dengan alamat) — u.b. (untuk beliau) — u.p. (untuk perhatian) — s.d. (sampai dengan)

1. Chemical symbols, abbreviations of units of measurement, weight, capacity, and currency are not followed by a full stop.

- *Examples:* Cu (kuprum) — cm (sentimeter) — kVA (kilovolt-ampere) — l (liter) — kg (kilogram) — Rp (rupiah)

1. Acronyms:

a. An acronym that is a proper name consisting of the initial letters of each word is written in capital letters without full stops (e.g., BIG, BIN, LIPI, PASI).

b. An acronym that is a proper name formed from a combination of syllables or of letters and syllables is written with an initial capital letter (e.g., *Bulog, Bappenas, Kowani*).

c. An acronym that is not a proper name formed from a combination of initial letters and syllables or of syllables is written in lowercase (e.g., *iptek, pemilu, puskesmas, rapim, rudal, tilang*).

III. NUMBERS AND NUMERALS

1. Arabic numerals and Roman numerals are commonly used as symbols for numbers or ordinal markers.

- Arabic numerals: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
- Roman numerals: I, II, III, IV, V, VI, VII, VIII, IX, X, L (50), C (100), D (500), M (1,000)

1. A number in the text that can be expressed in one or two words is written out in words, except when used sequentially in an enumeration.

- *Example:* Mereka menonton drama itu sampai tiga kali. (They watched that drama up to three times.)
- *Exception:* Di antara 72 anggota yang hadir, 52 orang setuju, 15 orang tidak setuju, dan 5 orang abstain.

1. Rules for numbers at the beginning of a sentence:

a. A number at the beginning of a sentence is written out in words (e.g., *Lima puluh siswa teladan mendapat beasiswa ...*).

b. If a number at the beginning of a sentence cannot be expressed in one or two words, the sentence structure is rearranged so that the number does not appear at the beginning.

1. Large numbers may be written partly in numerals and partly in words for ease of reading.

- *Examples:* 250 juta rupiah — 550 miliar rupiah — Rp10 triliun

1. Numerals are used to express (a) measurements of length, weight, area, volume, and time, and (b) monetary values.

- *Examples:* 0,5 sentimeter — 10 liter — 2 tahun 6 bulan 5 hari — Rp5.000,00 — US\$3,50

1. Numerals are used to number addresses, such as streets, houses, apartments, or rooms.

- *Examples:* Jalan Wijaya No. 14 — Hotel Mahameru, Kamar 169

1. Numerals are used to number parts of a composition or verses of a holy scripture.

- *Examples:* Bab X, Pasal 5, halaman 252 — Surah Yasin: 9

1. Writing numbers in words:

a. Whole numbers — *Examples:* dua belas (12), tiga puluh (30), lima ribu (5,000)

b. Fractions — *Examples:* setengah/seperdua (1/2), tiga dua-pertiga (3²/₃), satu persen (1%)

1. Writing ordinal numbers:

- *Examples:* abad XX / abad ke-20 / abad kedua puluh — Perang Dunia II / Perang Dunia Ke-2 / Perang Dunia Kedua

1. Writing numerals with the suffix *-an*:

- *Examples:* uang 1.000-an (one-thousand-denomination bills) — tahun 1950-an (the 1950s) — uang 5.000-an (five-thousand-denomination bills)

1. Writing numbers simultaneously in numerals and words is done in legislation, legal deeds, and receipts.

- *Example:* ... dipidana dengan pidana kurungan paling lama 1 (satu) tahun dan pidana denda paling banyak Rp200.000.000,00 (dua ratus juta rupiah).

1. Numbers used as elements of geographical names are written out in words.

- *Examples:* Kelapadua — Kotonanampek — Rajaampat — Simpanglima — Tigaraksa

J. Pronominal Clitics *ku-*, *kau-*, *-ku*, *-mu*, and *-nya*

The pronominal clitics *ku-* and *kau-* are written as one unit with the word that follows them, while *-ku*, *-mu*, and *-nya* are written as one unit with the word that precedes them.

- *Examples:* Rumah itu telah dijual. — Majalah ini boleh kaubaca. — Bukuku, bukumu, dan bukunya tersimpan di perpustakaan.

K. Articles *si* and *sang*

The articles *si* and *sang* are written separately from the word that follows them.

- *Examples:* Surat itu dikembalikan kepada si pengirim. — Ibu itu menghadiahi sang suami kemeja batik.

-
- **Note:** The initial letter of *sang* is capitalised when *sang* forms part of a name for God (e.g., *Sang Pencipta* — the Creator; *Sang Hyang Widhi Wasa*).

IV. PUNCTUATION MARKS

A. Full Stop / Period (.)

1. A full stop is used at the end of a declarative sentence.
 - *Examples: Mereka duduk di sana. — Dia akan datang pada pertemuan itu.*

1. A full stop is used after a number or letter in an outline, synopsis, or list.

- *Example:*

I. Kondisi Kebahasaan di Indonesia

A. Bahasa Indonesia

1. Kedudukan
2. Fungsi

- **Notes:**

(1) A full stop is not used after a number or letter that already has a closing parenthesis in an enumeration.

(2) A full stop is not used at the end of multi-level digital numbering (e.g., 1.1, 1.2.1).

(3) A full stop is not used after the number or the final digit in multi-level digital numbering in the title of a table, chart, graph, or figure (e.g., *Tabel 1 Kondisi Kebahasaan di Indonesia*, *Tabel 1.1 Kondisi Bahasa Daerah di Indonesia*).

1. A full stop is used to separate hours, minutes, and seconds indicating time or duration.

- *Example: Pukul 01.35.20* (1 hour, 35 minutes, 20 seconds past midnight)

1. A full stop is used in reference lists between the author's name, year, title of the work (if it does not end with a question mark or exclamation mark), and place of publication.

- *Example: Moeliono, Anton M. 1989. Kembara Bahasa. Jakarta: Gramedia.*

1. A full stop is used to separate groups of thousands or their multiples indicating quantity.

- *Examples: 13.000 pulau — 7.000.000 orang — Rp225.000.000.000,00*

- **Notes:**

(1) A full stop is not used to separate groups of thousands that do not indicate quantity (e.g., years: 1956; page numbers: halaman 1305).

(2) A full stop is not used at the end of a heading that serves as a title of a composition, illustration, or table.

(3) A full stop is not used after (a) the address of the recipient or sender of a letter, or (b) the date of a letter.

B. Comma (,)

1. A comma is used between elements in an enumeration or listing.
 - *Example: Telepon seluler, komputer, atau internet bukan barang asing lagi.*
1. A comma is used before coordinating conjunctions such as *tetapi* (but), *melainkan* (rather), and *sedangkan* (whereas) in compound sentences.
 - *Example: Saya ingin membeli kamera, tetapi uang saya belum cukup.*
1. A comma is used to separate a subordinate clause that precedes the main clause.
 - *Example: Kalau diundang, saya akan datang.*
 - **Note:** A comma is not used if the main clause precedes the subordinate clause (e.g., *Saya akan datang kalau diundang.*).
1. A comma is used after an inter-sentential connective word or expression, such as *oleh karena itu* (therefore), *jadi* (so), *dengan demikian* (thus), *sehubungan dengan itu* (in connection with that), and *meskipun demikian* (nevertheless).
1. A comma is used before and/or after an interjection (such as *o, ya, wah, aduh, hai*) and a word used as a form of address (such as *Bu, Dik, Nak*).
 - *Examples: O, begitu? — Siapa namamu, Dik?*
1. A comma is used to separate a direct quotation from the rest of the sentence.
 - *Example: Kata nenek saya, "Kita harus berbagi dalam hidup ini."*
 - **Note:** A comma is not used to separate a direct quotation that is an interrogative, imperative, or exclamatory sentence from the part that follows it (e.g., *"Di mana Saudara tinggal?" tanya Pak Lurah.*).
1. A comma is used between (a) a name and an address, (b) parts of an address, (c) a place and a date, and (d) a place name and a region or country written in sequence.
 - *Examples: Banda Aceh, 10 Mei 1980 — Tokyo, Jepang*
1. A comma is used to separate the inverted part of a name in a reference list.
 - *Example: Gunawan, Ilham. 1984. Kamus Politik Internasional. Jakarta: Restu Agung.*
1. A comma is used between parts of a footnote or endnote.
1. A comma is used between a person's name and the abbreviated academic degree that follows, to distinguish it from an abbreviation of a personal, family, or clan name.
 - *Example: B. Ratulangi, S.E. — Siti Aminah, S.H., M.H.*
1. A comma is used before a decimal numeral or between rupiah and sen expressed in numerals.
 - *Examples: 12,5 m — 27,3 kg — Rp500,50*

1. A comma is used to enclose supplementary or appositive information.

- *Example: Soekarno, Presiden I RI, merupakan salah seorang pendiri Gerakan Nonblok.*

1. A comma may be used after an adverbial phrase at the beginning of a sentence to prevent misreading.

- *Example: Dalam pengembangan bahasa, kita dapat memanfaatkan bahasa daerah.*

C. Semicolon (;)

1. A semicolon may be used in place of a conjunction to separate coordinate clauses in a compound sentence.

- *Example: Hari sudah malam; anak-anak masih membaca buku.*

1. A semicolon is used at the end of an enumeration item that takes the form of a clause.

- *Example:*

(1) berkewarganegaraan Indonesia;

(2) berijazah sarjana S-1;

(3) berbadan sehat; dan

(4) bersedia ditempatkan di seluruh wilayah NKRI.

1. A semicolon is used to separate parts of an enumeration within a sentence that already uses commas.

- *Example: Ibu membeli buku, pensil, dan tinta; baju, celana, dan kaus; pisang, apel, dan jeruk.*

D. Colon (:)

1. A colon is used at the end of a complete statement that is followed by an enumeration or explanation.

- *Example: Mereka memerlukan perabot rumah tangga: kursi, meja, dan lemari.*

1. A colon is *not* used if the enumeration or explanation is a complement that completes the statement.

- *Example: Kita memerlukan kursi, meja, dan lemari. (No colon before the list.)*

1. A colon is used after a word or expression that requires elaboration (e.g., in labelled lists).

- *Example: Ketua : Ahmad Wijaya / Sekretaris : Siti Aryani / Bendahara : Aulia Arimbi*

1. A colon is used in drama scripts after the word indicating the speaker in a dialogue.

- *Example: Ibu : "Bawa koper ini, Nak!" / Amir : "Baik, Bu."*

1. A colon is used between (a) a volume or issue number and a page number, (b) a surah and verse in a holy scripture, (c) a title and subtitle of a work, and (d) a city name and publisher in a reference list.

- *Examples: Horison, XLIII, No. 8/2008: 8 — Surah Albaqarah: 2–5 — Dari Pemburu ke Terapeutik: Antologi Cerpen Nusantara*

E. Hyphen (-)

1. A hyphen is used to mark the part of a word that is broken at the end of a line.

1. A hyphen is used to join the elements of a reduplicated word.

- *Examples: anak-anak — berulang-ulang — kemerah-merahan*

1. A hyphen is used to join a date, month, and year expressed in numerals, or to join letters in a word that is spelled out letter by letter.

- *Examples: 11-11-2013 — p-a-n-i-t-i-a*

1. A hyphen may be used to clarify the relationship between parts of a word or expression.

- *Examples: ber-evolusi — dua-puluh-lima ribuan (25 × 1,000)*

1. A hyphen is used to join:

a. *se-* with a following word that begins with a capital letter (*se-Indonesia, se-Jawa Barat*);

b. *ke-* with a numeral (*peringkat ke-2*);

c. a numeral with *-an* (*tahun 1950-an*);

d. a word or affix with an abbreviation consisting of capital letters (*hari-H, ber-KTP, di-SK-kan*);

e. a word with a pronoun for God (*ciptaan-Nya, atas rahmat-Mu*);

f. a letter and a numeral (*D-3, S-1, S-2*); and

g. a pronominal clitic (*-ku, -mu, -nya*) with an abbreviation consisting of capital letters (*KTP-mu, SIM-nya*).

- **Note:** A hyphen is not used between a letter and a numeral if the numeral represents the number of letters (e.g., BNP2TKI, LP3I, P3K).

1. A hyphen is used to join an Indonesian element with a regional or foreign language element.

- *Examples: di-sowan-i — di-back up — me-recall — pen-tackle-an*

1. A hyphen is used to mark a bound form that is the subject of discussion.

- *Example: Kata pasca- berasal dari bahasa Sanskerta.*

F. Dash (—)

1. A dash may be used to demarcate an inserted word or sentence that provides explanation outside the sentence structure.

- *Example: Kemerdekaan bangsa itu—saya yakin akan tercapai—diperjuangkan oleh bangsa itu sendiri.*

1. A dash may also be used to emphasise appositive or other supplementary information.

-
- *Example: Rangkaian temuan ini—evolusi, teori kenisbian, dan pembelahan atom—telah mengubah konsepsi kita tentang alam semesta.*

1. A dash is used between two numbers, dates, or places meaning 'up to' or 'to'.

- *Examples: Tahun 2010—2013 — Tanggal 5—10 April 2013 — Jakarta—Bandung*

G. Question Mark (?)

1. A question mark is used at the end of an interrogative sentence.

- *Example: Kapan Hari Pendidikan Nasional diperingati?*

1. A question mark is used within parentheses to indicate a part of a sentence that is doubted or cannot be fully verified.

- *Example: Di Indonesia terdapat 740 (?) bahasa daerah.*

H. Exclamation Mark (!)

An exclamation mark is used to end an expression or statement that is an exclamation or command conveying earnestness, disbelief, or strong emotion.

- *Examples: Alangkah indahny taman laut di Bunaken! — Bayarlah pajak tepat pada waktunya! — Merdeka!*

I. Ellipsis (...)

1. An ellipsis is used to indicate that part of a sentence or quotation has been omitted.

- *Example: Penyebab kemerosotan ... akan diteliti lebih lanjut.*

- **Notes:**

(1) The ellipsis is preceded and followed by a space.

(2) An ellipsis at the end of a sentence is followed by a full stop (making four dots in total).

1. An ellipsis is used to represent an unfinished utterance in dialogue.

- *Example: "Menurut saya ... seperti ... bagaimana, Bu?"*

J. Quotation Marks ("...")

1. Quotation marks are used to enclose a direct quotation from speech, a manuscript, or other written material.

- *Example: "Merdeka atau mati!" seru Bung Tomo dalam pidatonya.*

1. Quotation marks are used to enclose the title of a poem, song, film, television serial, article, manuscript, or book chapter used within a sentence.

— End of Appendix 18 —

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