



**FINAL PROJECT
GUIDELINES AND REGULATIONS
SV191801
EDITION 2-2022**

**UNDERGRADUATE PROGRAM OF APPLIED STATISTICS
DEPARTMENT OF BUSINESS STATISTICS
FACULTY OF VOCATIONAL STUDIES
INSTITUT TEKNOLOGI SEPULUH NOPEMBER
SURABAYA
2022**



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PREFACE

Praise be to Allah, the Lord of all creation. All gratitude is due to Allah, the Most High, for His abundant blessings and favors, which have resulted in the completion of the Final Project Handbook, carrying a weightage of 6 (six) credit hours in the 2019 curriculum for students of the Applied Statistics Study Program at the Department of Business Statistics, Faculty of Vocation, ITS.

The Final Project serves as a course that provides students of the Department of Business Statistics with practical experience in applying statistical methods in the fields of Business Analytics (related to business statistics, social economics, and governance), Quality and Productivity Engineering (related to industrial statistics, quality control, productivity, and the environment), as well as statistical modeling and computation.

Within this course, students are trained to identify issues in various fields, translate these issues into statistical problems, and subsequently determine the appropriate statistical methods to solve said problems.

The Final Project Handbook encompasses the process of developing the project proposal and report, the procedure for selecting the Final Project, the evaluation methods, and the documentation for the implementation of the Final Project.

May the completion of this Final Project Handbook prove beneficial to both students and mentors, thereby facilitating the smooth execution of the Final Project course and ensuring its timely completion.

Surabaya, February 2022

Head of the Department of Business Statistics

Dr. Wahyu Wibowo, S.Si, M.Si

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I. Introduction

A. The definition of the Final Project.

Final Assignment or Final Project is a scholarly work composed by students in accordance with the principles and ethics of academia, under the guidance of competent professors, and is the outcome of their learning achievements in the application of knowledge, technology, and art in a specific academic domain. (Quality Assurance Center of ITS, 2017) Every student who is about to complete their studies in the Applied Statistics program is required to compose a scientific Project known as the Final Project, with a weight of 6 credits, which is carried out in the eighth semester. The prerequisites for enrolling in this Final Project course are the completion of 110 credits, and the target completion time for the Final Project is one semester.

The form of the Final Project in the Applied Statistics program is the application of statistics to solve societal problems, particularly in the field of Business Analytics (related to business, economics, social governance), as well as Quality and Productivity Engineering (related to industrial statistics, quality control, productivity, and the environment), and statistical modeling and computation using appropriate statistical methods. Here, students observe, select suitable methods, analyze them, and document their findings in a report, which they present before the examining professor. The Final Project course can also be a continuation of the Internship course undertaken in the preceding semester. The emphasis of the Final Project lies in a report presenting the analytical results of the problem addressed using appropriate statistical methods.

B. Learning outcomes

The Learning Outcomes of graduates encompass their disposition, aptitude, and erudition. Elaborated Course Performance for the Final Project course is as follows:

I.	Aspect of Attitude
S1	Devote oneself to the worship of the Supreme Being and exhibit a pious demeanor;
S6	Collaborate and possess social awareness as well as concern for both society and the environment.
S7	The observance of law and discipline in communal and national existence;
S8	To internalize the values, norms, and academic ethics.
S9	Demonstrating a sense of responsibility towards one's work in their respective field independently.
S10	To internalize the spirit of autonomy, perseverance, and entrepreneurship.
S11	Strive to achieve optimal outcomes; and collaborate harmoniously to fully harness the potential at hand.
II	Aspect of General Skills
KU1	Capable of applying logical, critical, innovative, high-quality, and measurable thinking in the execution of specific tasks within one's field of expertise, aligned with the competence standards of the respective domain of work.
KU3	Capable of implementing the principles of sustainability in the development of knowledge.
KU4	Capable of implementing information and communication technology within the framework of one's professional endeavors.
KU6	Capable of demonstrating autonomous, commendable, and quantifiable performance.
KU9	Capable of making precise decisions based on standardized procedures, design specifications, safety requirements, and job security while conducting supervision and evaluation in one's tasks.
KU10	Capable of fostering and enhancing networks of collaboration and their outcomes both within and beyond its institutional framework.
KU13	Proficient in the art of documenting, preserving, safeguarding, and retrieving data, thereby ensuring its veracity and averting the perils of plagiarism.

III	Aspect of Special Skills
KK1	I am capable of applying Statistical methods to procedures in order to resolve business challenges.
KK2	Capable of utilizing software to carry out the task of data analysis.
KK3	Capable of resolving business predicaments by employing Statistical analysis tools while considering industrial, economic, and societal factors;
KK4	Capable of developing a program that supports data analysis.
KK5	Capable of enhancing the performance and quality of a process through the examination, gathering of measurement data on the work object, analysis, management, and interpretation of data in accordance with procedures and standards.
KK6	Capable of scrutinizing comprehensive operational procedures in resolving Business predicaments that have been or are currently implemented, and adeptly transcribing them into the form of a scholarly document.
IV	Aspect of Knowledge
PP1	The principles of ethics and personality.
PP2	Theoretical concepts of natural sciences and mathematics in general;
PP3	The art of programming and computational statistics; and
PP4 PP5	Principles of management and quality assurance, techniques of effective oral and written communication.
PP6	Comprehensive statistical methodology.
PP7	Principles of business

The purpose of this Final Project implementation guide is to ensure that the implementation of the Final Project at ITS is academically and administratively compliant.

Academically, it encompasses the attainment of the Program's Learning Outcomes (CPL), fulfillment of the minimum requirements for taking the Final Project courses, and meeting the minimum requirements for supervisors and examiners (SKPI) during the execution.

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II. The stage of the final project.

A. The Stages of Final Project Acquisition

As the culmination of academic activities in the Applied Statistics Program, students are required to undertake a Final Project (FP) carrying a weightage of 6 credit hours, following the prescribed procedure outlined below:

1. The drafting of the PA proposal.

- a. At the onset of the seventh semester, the department head estimated the number of students who would enroll in the Final Project in the current year.
- b. The department shall determine the number of students who will undertake the Practical Assignment for each Laboratory in proportion to the count of faculty members overseeing the respective laboratories.
- c. The Laboratory Head (Kalab) conducted a dissemination of the research topic on PA in the eighth week of the seventh semester.
- d. The students determine the Research Project topic, which can originate from either the students themselves, the professors, or as a continuation of the Internship Course.

2. Final Project Registration.

Registration for the PA program commences during the thirteenth week of the seventh semester, accompanied by the following stipulations:

- You have successfully completed a minimum of 110 credit hours of coursework, as evidenced by the submission of your transcript.
- Submitting a comprehensive proposal encompassing the domains, subjects, background, issues, and methodological framework of the Final Project plan.
- Submitting Form P1 – A (Certificate of Attendance for Final Project Seminar).
- Submitting grades for Foreign Language
- I have participated in extracurricular activities with a minimum GPA of 2.1.

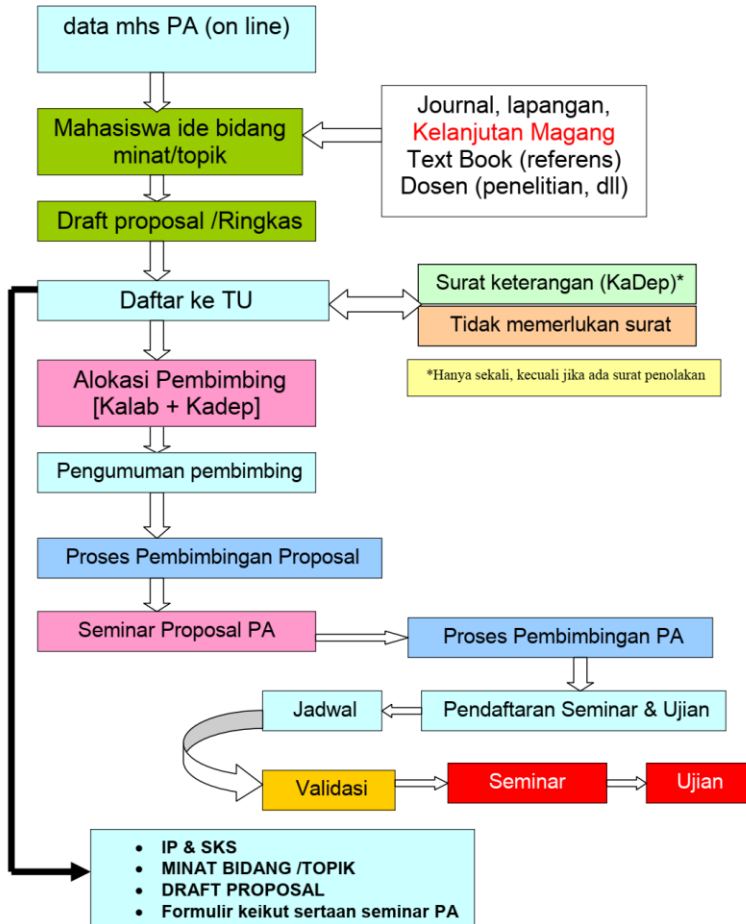
- Selecting two potential supervising professors from the same laboratory.
- 3. The appointment of the academic supervisor for the Final Project**
 - a. After the student proposed two prospective mentors, the Head of the Department decided on the supervising lecturer, taking into account the suitability of the lecturers' competencies, their capacity, the students' preferences, and maintaining proportionality.
 - b. The student acquires a mentor in the 18th week of their seventh semester.
 - 4. Guidance in the creation of a proposal.**
 - a. The student has crafted a proposition of academic endeavor under the guidance of a designated academic mentor, encompassing the time span from the onset of the eighth academic term, commencing from week zero and continuing through week two.
 - b. The approved proposal is to be submitted by the end of the second week, as agreed upon by the supervisor.
 - 5. Proposal for an Academic Symposium:**

The seminar proposal will be conducted during the eighth semester, with the detailed schedule outlined as follows:

 - a. The committee has appointed an examination team comprising of a mentor and two examiners in the first week.
 - b. The department head crafted the schedule for the proposal seminar in the second week.
 - c. The seminar proposal will be conducted in the third and fourth week.
 - d. The revised proposal, which has been approved by the examining committee, shall be submitted to the program administration in the fifth week.
 - 6. Supervision of Final Project:**
 - a. The guidance process for the final thesis extends until the 15th week.
 - b. The process of guidance may encompass survey/data collection, data analysis, writing techniques, and other aspects.
 - c. The guidance for the Probationary Period Assessment (PA) should be conducted a minimum of 7 times.

- d. The data was collected in the 16th week.
- 7. The examination of Performance Assessment.:**
- a. The student registered to take the final examination on the 16th week.
- b. The requirements to participate in the PA examination involve the collection of:
- The signed guidance form for the undergraduate final project, endorsed by the supervising professor.
 - The certificate has successfully attained a minimum TOEFL score of 477.
 - The required minimum score for SKEM is 900 (2017) or at least 2.1 (2018 onwards).
 - The Final Project Report for my fourth experience.
- c. The schedule for the PA examination is announced in the 17th week.
- d. The PA examination is conducted in the 18th week.
- e. The research report has been bound and signed by the Head of Department two weeks following the completion of the PA examination.

ALUR PELAKSANAAN PROYEK AKHIR (PA)



B. Evaluation of the Final Project

To participate in the Final Project Examination, students are required to register and submit the following prerequisites:

1. The validated form that has been signed by the validator.
2. The signed guidance form by the mentoring team.
3. Final Project Report

As a note, prior to proceeding with the examination, students are required to undergo validation with the validator. The validation process encompasses the verification of filled-in data/questionnaires, outputs, and other relevant aspects.

The breakdown of the assessment components is as follows:

The components of assessment.	Bobot
Guidance	30%
Proposal	10%
Report	30%
Oral examination.	30%

Here is the explanation of each assessment component.

1. Guidance (bobot 30%)

The value of guidance represents the value bestowed upon students by their mentors throughout the course of their Final Project execution, encompassing demeanor, knowledge, and skills.

Guidance		Bobot
Select one of the options)		
a.	Guide(*)	100%
b.	Advisor (60%)	60%
	Co. Advisor(40%)	40%

2. Proposal (bobot 10%)

The proposal signifies the preliminary concept of the Final Project research to be conducted and presented prior to the implementation of the Final Project. The proposal is an integral component inseparable from the Final Project Report.

Components of Proposal Assessment	Bobot
Grammar and writing techniques	20%
Introduction (Background, Issue, Objectives)	30%
Literature review.	25%
Methodology	25%

3. Final Project Report(bobot 30%)

The Final Project Report is a report presenting the research findings of the Final Project, adhering to the established standard format set by ITS. The assessment encompasses components of grammar and writing techniques, introduction, literature review and the utilized references, methodology, results and discussion, conclusion, and recommendations.

Components of Writing Evaluation	Bobot
Grammar and writing techniques.	10%
Introduction.	10%
Literature Review	25%
Methodology	15%
Findings and Discussions	30%
Conclusion and recommendations.	10%

4. Oral Examination(bobot 30%)

The evaluation of the oral examination entails the assessment of the oral examination on the subject matter of the Final Project by the examining team (Supervising Lecturer, Co-Supervisor, and Non-Supervising Examiner). The oral examination takes place over a duration of 90

minutes, with 20 minutes allocated for presentation and 70 minutes for question and answer session.

Components of Examination Evaluation.		Bobot
a.	The technique of presentation	25%
b.	The Precision of Methodology.	25%
c.	The ability to defend.	50%

Furthermore, in order for the examination results to be released, students are required to:

1. Submitting the signed Final Project report to the Supervisor and Head of the Department.
2. Submitting evidence of publication for the final project, at the very least, providing proof of submission to a scholarly journal or seminar..

The publication manuscript constitutes a portion or entirety of the final project material that is obligatory to be disseminated in a journal or seminar, which may be at the national or international level. In addition to including the name of the respective student, the publication also necessitates the inclusion of the names of the supervisory team.

III. The procedure for composing a proposal and report.

A. Final Project Proposal

The initial step in creating the Final Project is for the students to compose a proposal beforehand. Herein lies the structure of the proposal as follows:

1. Title of the proposal.

The title should be concise, clear, and depict the main theme (a good title is derived from the issue).

2. Brief Description

A concise exposition encompasses the background behind the selection of the research issue or a brief rationale for the chosen Research Title, the Research Problem seeking answers, the Methodology undertaken, and the anticipated Results.

3. Introduction:

The introduction encapsulates the underlying factors and motivations that underscore the significance of conducting research. The constituents present within the introduction comprise...

a. Background

Every research should possess a contextual backdrop (of actuality) necessitating resolution, expounded upon lucidly, and ideally accompanied by substantiation in the form of preceding studies, wherein the backdrop encapsulates a concise account of the prevailing conditions and issues encountered in the field, as well as the rationale behind the imperative exploration of each specific quandary.

b. Problem Formulation (Issue)

- Contains the primary issues to be discussed and their corresponding solutions; it represents the formulation of the disparity between the current state and the existing problems, juxtaposed with the state to be attained.

- The issue should be presented in a comprehensive manner, specifically as a breakdown of the problems that need to be resolved.
- A detailed elaboration of the issues will facilitate the resolution of the main problem.

c. The objective of the study

- Tujuan Penelitian memuat pemecahan permasalahan penelitian (dan menjawab pertanyaan dari penelitian)
- The objective of the study entails the clarification of research quandaries (as well as the resolution of inquiries derived from the research). The purpose of the study can be stated in a general manner, which is to solve the main issues of the research.
- The research objective can also be expressed in greater detail, namely, to resolve the intricacies or intricately analyze the specific issues.

d. Scope/Limitations of the Problem.

- The problem statement can narrow the discussion from what is explicitly stated in the issue. For example, within the given problem, there are actually five underlying causal factors that need to be examined. However, this study simplifies it by only focusing on the analysis of three causal factors.
- The delineation of issues is superfluous in the absence of matters that necessitate restriction or simplification.

e. The benefits of research.

The benefits of research encompass the advantages or benefits that will be obtained for society, at least for the researchers themselves, upon the attainment of research objectives. This occurs when research problems have been successfully resolved.

4. Literature Review

The literature review comprises the latest, authentic, and pertinent references.

- The theories that will be required for discussion are Statistics and Non-Statistics, wherein the direct non-statistical review shall

mention the names of the non-statistical aspects, such as production systems, sexually transmitted diseases, and so forth.

- The research/findings/opinions of others closely related to the research topic, wherein the theory, findings, and research materials need to be expounded upon in order to formulate a conceptual framework or concept utilized in the research.

5. Methodology

The methodologies employed encompass:

- The source of data (primary or secondary)
- Research unit, research variables, and operational variable definitions.
- The population and sample (sampling design)
- The steps of analysis and flowchart.
- Research activity plan.

6. The Schedule of Activities.

The schedule of implementation is detailed for each research activity in accordance with the activity details outlined in the Research Implementation Procedure (Research Methodology). The Implementation Schedule is created on a weekly basis.

7. Bibliography

The bibliography encompasses all the references cited in the proposal.

8. List of Appendices

B. Final Project Report

The final report comprises three major sections, namely the 'Preliminary' section, the 'Core' or 'Body' section, and the 'Conclusion' section, with the following details:

1. The "Initial" section comprises:

- a. Title of Final Project in Indonesian and English on the surface and interior of the skin.
- b. Verification page.
- c. Abstract or concise description in the Indonesian and English languages.

- d. Preface
- e. Table of Contents
- f. List of images, graphics, and diagrams.
- g. List of tables.
- h. List of symbols.

2. The section titled 'Core/Essence' or 'Main Body' comprises

BAB I Introduction.

- 1.1 The background of the issue.
- 1.2 Formulation of the issue
- 1.3 Problem statement
- 1.4 The objective
- 1.5 The benefits

BAB II Literature Review

- 2.1 The findings of previous relevant research.
- 2.2 The theory that will be employed to resolve both statistical and non-statistical issues.

BAB III Metodologi

- 3.1 The source of data (primary/secondary, sample)
- 3.2 Research unit, research variables, and operational variable definitions.
- 3.3 The analytical steps in utilizing methodology and flowcharts.

BAB IV Findings and Discussion

- 4.1 Description of research variables (including descriptive statistics)
- 4.2 The results of data processing and analysis (wherein analysis is linked to substance, such as the correlation between specific ailments and the conditions of one's domicile or environment—pray, what might be the underlying causes?)

BAB V Kesimpulan dan Saran

- 5.1 The conclusion.
It is an outcome of research that addresses the issue.

5.2 Suggestions, encompassing matters that can be further refined and expanded upon, or encompassing predicaments encountered during the culmination of the Final Project's execution.

3. The concluding segment comprises:

a. Bibliography

b. Appendices

- The instrument utilized for data collection (such as questionnaires, etc.)
- The information (not displayed in an explicit manner)
- The generated sentence can be improved as follows:
- **"The output (program/syntax, data processing required)"**

c. The writer's biography

C. Writing Format

The format of the proposal.

The typing of the Final Project proposal shall adhere to the following provisions:

1. Types and dimensions of paper:
A4-sized high-quality paper, measuring 210 mm x 297 mm.
2. Spacing: 1 (one)
3. Margin :
 - Top : 3.0 cm
 - Bottom : 2.5 cm
 - Left : 3.0 cm
 - Right : 2.0 cm
4. Font:
 - *Times New Roman, Normal, size 12* (For the title, you can use the size.14).
 - Untranslated loanwords are written in italics.

The format of the Final Project Report

The final project's typewriting should adhere to the following provisions:

- a. Types and dimensions of paper:
High-quality paper HVS 80 gram MagnitudeA5 (148 mm x 210 mm)
- b. Spacing: 1 (satu)
- c. Margin :
 - Top : 2.5 cm
 - Bottom : 2.5 cm
 - Left : 2.5 cm
 - Right : 2.0 cm
- d. Font :
Times New Roman, Normal, size 11 (For the title, you can use the size.14).
- e. Tables and illustrations, if any, should ideally be presented on the same sheet of paper, if possible.
- f. Page number.

- The initial section is adorned with lowercase Roman numerals (i, ii, iii, iv, v, etc.) positioned at the lower center of the page.
 - The central portion or core, as well as the body stem and conclusion, are sequentially assigned with Arabic numerals, commencing with the number 1, commencing from the Preliminary Chapter through the appendices.
 - The page number is written on the upper right (header) for odd-numbered pages and on the upper left for even-numbered pages, except for the first page of a new chapter, which is written at the bottom right (footer) and begins with an odd page number.
 - Pages with odd numbers are placed on the right-hand side and even-numbered pages are placed on the left-hand side. If a chapter ends on an odd-numbered page, an empty page with an even page number is added (with the inscription "This page intentionally left blank").
 - The book's pages were adorned with blue interleaves, but they were not numbered.
- g. Table and picture
- The tables are sequentially numbered within each chapter using Arabic numerals, following the prescribed writing convention as follows:
- The number consists of two components, the first component indicating the chapter, while the second component signifies the table number (for instance: Table 2.1, Table 3.2, Table 3.3, and so forth).
 - The number and title of the table are positioned above the table, with each word commencing with a capital letter except for conjunctions..
 - The images are sequentially numbered in each chapter using Arabic numerals according to the following stipulations:
 - The number consists of two parts, the first part indicating the chapter while the second part indicates the figure number. (e.g., Figure 2.1, Figure 3.2, Figure 3.3, etc.).

- Nomor dan Judul Gambar diletakkan di bawah gambar.
- h. The thickness of the frontal and dorsal skin is no more than 1 mm (soft cover). The inscription on the frontal skin corresponds to the title page of the Final Project.
- i. Various hierarchical chapter titles.
- Chapter and Chapter Title: Typed in uppercase on a fresh page with balanced margins on the left and right (centered) and emboldened. The chapter number is expressed in Roman numerals, while the chapter title is written on the next line.
 - Subtitle: The initial letters of each word, excluding conjunctions, are written with bold capital letters and placed from the left edge.
 - Subtitle child: inscribed from the left periphery and embellished. The initial letter of the subtitle child is inscribed in capital letter..
 - If there are still titles of lower ranks, they should be written as exemplified in section c.
- j. References and Reference List
- All direct bibliographic sources must be cited. The method of referencing is by writing the author's name and the year of publication within parentheses. For citations taken indirectly from the original source, the name of the original author and the name of the editor should be written (example: Faqih in Sulistijono, 2006).