

PRACTICAL WORK GUIDEBOOK



**BACHELOR OF PHYSICS PROGRAM
DEPARTMENT OF PHYSICS
FACULTY OF SCIENCE AND MATHEMATICS,
UNIVERSITAS
DIPONEGORO 2020**

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FOREWORD

Practical Work (PW) is an important part of the compulsory courses for students at the Undergraduate level of education at the Department of Physics, Faculty of Science and Mathematics, Universitas Diponegoro. Therefore, guidelines or guidelines are needed that regulate the procedures for the implementation of Practical Work.

This Practical Work Handbook is a revision of the previous guide, which was prepared to accommodate several changes in the PW implementation process. It is hoped that this guidebook can be the main reference and guideline for students of the Bachelor of Physics Program, Department of Physics, Faculty of Science and Mathematics, Universitas Diponegoro in carrying out PW. In addition, this book also aims to be a guide for supervisors in directing and guiding students during PW.

Furthermore, we express our gratitude and appreciation to all parties who have contributed and provided support for the publication of this guidebook. Hopefully this book can provide benefits and be a valuable reference in facilitating the implementation of Practical Work for students of the Bachelor of Physics Program, Department of Physics, Faculty of Science and Mathematics, Universitas Diponegoro.

Semarang, January 2021
Practical Work Coordinator
Evi Setiawati, MSi

CHAPTER I

INTRODUCTION

This chapter explains the limitations, objectives, requirements and procedures of Practical Work (PW) students of the Bachelor of Physics Program, Faculty of Science and Mathematics, Universitas Diponegoro.

1.1 Limitations of Practice Work

The implementation of Practical Work (PW) is carried out based on several provisions:

- a. Practical Work (PW) is one of the provided compulsory courses, as one of the requirements for obtaining a Bachelor of Science degree.
- b. PW is carried out in a certain institution and gets special tasks (projects) in accordance with the field of Physics.
- c. The implementation time of the PW depends on the institution where the PW is located with a minimum duration of 20 working days, in accordance with the approval of the PW place.

1.2 Practical Work Objectives

The purpose of PW is to provide opportunities for students to see and come into contact with the world of campus and try to apply the knowledge that has been obtained on campus. With this touch, it is hoped that students will be able to know the needs of the outside world and make them always motivated and develop their knowledge.

1.3 Practical Work Conditions

The requirements for proposing Practical Work are as follows:

1. Enrolled as active students.
2. Studying at the 6th or 7th semester.

1.4 Practical Work Procedures

The procedure for implementing the PW is as follows

1. Students must register for PW as stipulated by the Study Program until the issuance of the PW Place Application Letter. The registration requirements that must be met are:
 1. Application Letter

2. Transcript of grades
3. Course Registration Form (*IRS*)
2. The Application Letter for the PW Place is submitted to the Agency/Company. The delivery of this letter is adjusted to the needs, it can be sent directly by the Study Program, but it can also be through *the* student concerned.
3. Regarding the PW application, the Study Program appointed a PW supervisor for the students.
4. Based on the application letter as per the procedure in point 2, the agency/company sends a reply letter, the reply letter from the agency/company is immediately sent to the Study Program.
5. If approved, students are required to go to the PW to the company and meet all the terms and requirements.
6. If rejected, based on the rejection letter, students can apply for PW at another company.
8. Students are not allowed to apply for PW to other companies before there is clarity from the company.
9. Before leaving for the company, students are required to consult with the PW supervisor regarding the PW's special task plan. Students are also required to fill out the PW consultation sheet to record all developments in the PW guidance process.
10. Students must also fill out the PW Control Card.
11. Students must also fill out the PW Log Book every day during PW at the Company.
12. Students are required to complete PW activities at the institution properly as evidenced by an endorsement sheet from the institution/company affixed with the company's stamp.
12. After the PW process in the field is completed, students prepare a PW report with the guidance and approval of the PW supervisor.

1.5 Special Tasks Work Practice

In the implementation of PW, students are required to discuss a special task with the approval of the PW supervisor, The results of the discussion are contained in the PW Report. The recommended forms of PW Special Tasks are:

- a. Eksperimen
- b. Analysis
- c. Simulation
- d. Planning

All forms of PW proposed must be with the approval of the supervisor to be assessed as the material of a PW.

1.6 Practical Work Supervisor.

The PW supervisor is a lecturer appointed by the PW Coordinator. Every issue related to the preparation and implementation of the PW is consulted with the supervisor.

CHAPTER II

SYSTEMATICS OF WRITING PRACTICAL WORK REPORTS

The PW report is a written form of the implementation of student PW in companies/institutions. The systematics of writing PW reports refer to the rules in this guide.

2.1 Writing Systematics

The systematics of writing PW reports are arranged in three parts, namely the opening part, the main part, and the closing part.

2.1.1 *Opening section*

The opening section is the front part of the PW report. The opening section consists of:

a. PW Title Sheet

The title of the PW report must be short. and accurately describe the content of the report.

b. Company attestation sheet

The company endorsement sheet is proof that the student has completed the PW properly and received endorsement from the institution where the PW is located, as evidenced by the existence of a company stamp.

c. Verification sheet

The endorsement sheet is proof that the PW report has been approved.

d. Foreword

The preface may contain:

- a. An expression of gratitude for the completion of the preparation of the report.
- b. The purpose of writing the report.
- c. If there are difficulties in the implementation of PW and writing, it needs to be stated.
- d. Thank you to all parties who have assisted in the implementation of the DG.
- e. Expectations for the PW report made.

f. Table of contents

The table of contents contains all the chapters/subchapters/subchapters in the report and followed by the page number where the chapters/subchapters/subchapters are located in the report.

g. List of tables

The table list contains the table title and the page number where the table is located in the report.

h. List of images

The list of images contains the title of the image along with the page number where the image is in the report.

2.1.2 *Staple parts*

The main part is the main part of the PW Report that reports on student PW activities, including about the PW location company and the special tasks discussed. The outline of the main section consists of five chapters, namely:

- Chapter I Introduction;
- Chapter II Company Agency Profile;
- Chapter III Implementation of Practical Work;
- Chapter IV Practical Work Results;
- Chapter V Conclusions and suggestions.

The content of each chapter is described in detail as follows.

a. Chapter I Introduction

The content of the introductory chapter is to provide an overview for the reader to understand and be able to assess the results of other writings in the report book. The introduction is written without a heading (article) and the number of pages of writing this Chapter I is between 2-3 sheets.

The main content of this chapter consists of at least several paragraphs which are as follows:

1. Background

The Background contains the information that caused the problem. It is also necessary to state the importance of this problem.

2. Practical Work Materials

This section contains general PW materials provided by the institution and must be completed by students.

3. Research Benefits

This section provides a description of the benefits of developing problem solving as revealed in the background.

b. Chapter II Profile of the Company's Agency

The company profile aims to provide an overview of the Institution/Company where the PW is located. These information can include a brief history of the institution, business field, and others. It also includes the organizational structure of PW institutions. The organizational part (department/division) of the practice workplace is reviewed in more detail, including its relationship with other departments, and its tasks as well as the unit where the student DG is located which is the location of the PW special task application.

c. Chapter III Implementation of Practical Work

The Implementation of Practical Work contains a report on activities during practical work, which includes the time of implementation, place of implementation, materials of practical work activities that are detailed within a certain period of time such as every few days or weeks which are conveyed clearly.

d. Chapter IV Practical Work Results.

The review of this chapter is to reveal the results of the Special Task and relate it to the content of Chapter II and Chapter III so that a discussion is obtained. The number of pages of writing chapter IV is between 10-25 sheets. The main contents include the following.

1. The initial data that is the basis of the analysis of specific tasks.
2. Methodology on how to solve problems related to PW special tasks in institutions.
3. The results obtained include how those results are achieved.
4. The discussion, which contains a discussion of the results of special tasks obtained during PW. The discussion can be in the form of a description of why the results were obtained, the advantages and disadvantages of the implementation of PW

results for the institution.

5. The results and discussion of special tasks are presented in the form of descriptions (narratives) which are complemented by tables or pictures/graphs.
6. The results and discussion are expressed in measurable units that are easy to understand.
7. Present results and data in a logical order.
8. In the discussion section, the principle of the relationship between variables and the results obtained is expressed.

e. Chapter V Conclusions and Suggestions

This section contains a conclusion which is a summary of the results of the analysis of the special assignment in the previous section. In addition, in this section, suggestions that need to be considered can also be written based on the limitations found and assumptions made during the PW.

2.1.3 Closing

The cover section consists of:

a. Bibliography

The bibliography contains all literature sources used in the implementation and production of PW reports, both in the form of books, magazines, and other literature sources.

- b. Attachments, including: supporting figures, supporting tables, *PW Log Book* and calculations. Contains descriptions, tables, supporting figures, calculations and other things that need to be attached to clarify the description in the report. If a user manual or technical instructions of the resulting task are created, the document is also attached.

2.2 Language Use

The use of Indonesian/English language in writing reports must meet the standard report language criteria that show in the use of spelling. Things that need to be considered in the use of this language are as follows.

- a. The sentence is not too long but complete and easy for the reader to understand.
- b. Language determination is foresight in choosing words to compose sentences and paragraphs that do not overlap.

- c. Accuracy is meant as meticulousness in compiling sentences or paragraphs that are concise, firm, and clear. Explanations of a problem or statements are not repetitive.
- d. The completeness of the elements is intended to be complete with the grammatical elements and language powers needed to keep from causing misinterpretation in reading them. So, a sentence is at least clear about the arrangement of subjects, predicates, and objects.

In every report writing, the principles of efficiency need to be considered.

The use of language will describe the author's insight and level of reasoning.

2.3 Typing

Typing or photocopying of the report is done on 80 grams of white HVS paper. The Final report book, after being printed is quarto-sized (21.25 x 28.50 cm). All paper used must be of the same quality and white.

2.3.1 Letters

The report was written on a computer using *Times New Roman* letters. Letter size 12. The typed letters must be clearly visible and sharp (high quality printing).

2.3.2 Margin and spacing size

The typing of the report must be done in the margin as shown in Appendix 6 with the following provisions.

- a. Margin kiri = 4cm
- b. Margin kanan = 3cm
- c. Top margin = 4cm (if there is a chapter title, 5cm)
- d. Bottom margin = 3cm

These margin provisions also apply to tables, drawings or other illustrations including all their appendices. Line spacing varies by position and report.

- a. The distance between the content and the chapter title is 4.5 spaces (6 spaces = 1 inch)
- b. The spacing between the lines of text is 1.5 spaces.
- c. The distance between the contents of the chapter and the title of Article 3 space.
- d. The distance between the title of the article and the content of the article is 3 spaces.
- e. The distance between the content of the article and the title of the table is 3 spaces.
- f. The distance between the table and the table source text is 1.5 spaces.

- g. The distance between the beginning of typing a paragraph and a new paragraph with the left margin is 7 taps (letters).

2.3.3 Page numbering

Numbering starts from the page of the attestation sheet with a small Roman numeral number that corresponds to the page to which the sheet is located at the bottom in the middle of the page. This numbering is calculated from the title sheet page.

All the main and closing sections of the report are numbered pages using Arabic numerals. These page numbers are placed in the upper right, 3 spaces above the top margin and the right margin flat. The opening page numbers/chapters are placed in the bottom center, 3 spaces below the bottom margin.

2.3.4 Chapter

The titles of each chapter, including the titles of the opening and closing sheets, are all capitalized and placed in the middle of the top with a tyre 5 cm from the top end of the paper. Chapter numbers are written in large Roman numerals. Each chapter should be preceded by an introduction (without heading) that summarizes chronologically about the content discussed in the chapter.

A chapter can be divided into articles to facilitate the systematics of discussion. Each subsequent article can only be divided once more into sub-articles.

2.3.5 Article

Each first letter of the article words, except the hyphen and the clue word, is typed in capital letters. The second letter and so on remain in lowercase letters.

Writing articles begins with writing article numbers. The article number begins with the chapter number and is followed by the sequential number of the articles in that chapter. Between the chapter number and the article number are given a period. Behind the final number, no points are given. Articles are written without underscores, and do not end with periods. The article number starts in the left margin and if the article title is more linear, the next line is typed one and a half spaces away from the first letter above it.

Example :

2.3 Vehicle Operating Costs

In this case: 2 shows chapter II, 3 shows the article, and "Vehicle Operating Costs" shows the title of the article.

2.3.6 Sub-article

The numbering of sub-articles begins with the chapter number followed by the

article number and continues with the sequential number of the sub-articles. Each number is delimited by a point. Behind the final number, no points are given. All words in the sub-article except the initial letter, are written in lowercase letters, and are not underlined and not periodically marked at the end of the sub-section. Other provisions are the same as those described in the article above.

Example :

2.3.1 Fuel costs

In this case, 2 shows chapter II, 3 shows the article in order 2.3, 1 shows the subarticle in order 2.3.1, and "Fuel costs" shows the title of the subsection.

Description :

It is not permissible to use Roman numerals or alphabets in the numbering of articles and sub-articles.

2.3.7 New paragraphs or paragraphs

A new alenia or new paragraph is typed after the seventh beat of the left margin (the first letter on the eighth beat). Avoid writing a paragraph that consists of only one sentence. The typing of this paragraph must be left-aligned and right-aligned (*justify*).

2.3.8 Citations and references

Literature citations are recommended using the Harvard system, which is the author's name and year system, and mentions on the page how many citations were taken. The way to write it is to start by writing the author's last name, then in parentheses, written the year of the publisher followed by the colon and the page number from which the citation is taken, then write the content of the citation.

Example 1 : (reference at the beginning)

Holman ¹ mentions

$$Q = h \cdot A \cdot \Delta t \dots\dots\dots (2.1)$$

where : Q = the amount of heat absorbed (cal)

h = heat transfer coefficient (... ..)

A = heat transfer surface area (m²)

Δt = temperature difference (°C)

Note: Holman ¹ (meaning from Holman's number one literature)

Example 2 : (reference in the middle part)

Iron when carburized (Grace ³) will become hard.

Note: Rahmat ³ (meaning from literature number three by Rahmat)

Example 3 : (reference at the end)

The Vehicle Operating Costs (BOK) incurred consist of fixed costs and non-fixed costs. Fixed costs consist of capital interest costs, depreciation/depreciation, licensing and administration, vehicle insurance, vehicle operator salaries and allowances. Meanwhile, non-fixed costs consist of fuel costs, the use of lubricating oil, the use of tires, vehicle maintenance and repair, and the cost of terminal levies (Tamin ⁵, Warpani, ⁷).

Note: Tamin ⁵, Warpani ⁷ (meaning from literature number five and number 7 by Tamin and Warpani)

If there are two authors of the book, then the last names of the two authors are also written. If there are more than 2 authors, write only the last name of the first author, and then follow by writing the word "et al".

2.4 Bibliography

A bibliography is a list of sources for reading a report or scientific paper that is usually included at the end of a scientific work, a report/paper is very dependent on the author's insight. The breadth of the author's insight is colored by the breadth and selection of reading materials used.

The bibliography is arranged alphabetically by the author's name. How to write a bibliography is based on the following order.

Author's name, year of publication of the book, "book title", volume, print, name of book publisher, name of city, publisher and page number.

Page numbers are used only for journals, while for books may not be listed because citations may be in more than one place.

Example of a bibliography:

BIBLIOGRAPHY

1. Anonymous, 1993, Guidelines for Writing Scientific Papers for the Undergraduate Education Program (S1) at Universitas Diponegoro, Universitas Diponegoro, Semarang Semarang.
2. Anonymous , xxxx, Guidelines for Writing Final Project for the Undergraduate Education Program (S1) Department of Civil Engineering, Faculty of Science and Mathematics, Universitas Diponegoro, Department

of Civil Engineering, Semarang Semarang.

3. **Articles in journals, magazines, seminars, or groups of articles :**
Cary, A. M., Weinstein, L. M. & Bushnell, D. M., 1980, "Drag Reduction Characteristics of Small Amplitude Rigid Surface Waves", in *Progress in Astronautics and Aeronautics*, (Ed.: G. R. Haugh), Vol. 72, hlm 143-167.

Mochizuki, S. & Osaka, H., 1998, "Drag Reduction with Submerged Ribs and its Mechanism in a Turbulent Boundary Layer Over *D*-Type Roughness", *Proc Int Symp on Seawater Drag Reduction*, Newport, Rhode Island, 22-23 July, hlm 121-126.

Moffat, R. J., 1982, "Contributions to The Theory of Single Sample Uncertainty Analysis", *J Fluids Engg.*, Vol. 104, hlm 250-260.
4. **Thesis, Thesis, Dissertation, Research Report :**
Yuli, T. S., 2003, Experimental Study of Cavitation Identification at Elbow 90o Based on Vibration Spectrum and Noise Level, *Final Project of Physics*, IST AKPRIND, Yogyakarta.
5. **Books, Translated books :**
Ary, D., Jacobs, L.C. & Razavieh, A., 1976, *Introduction to Educational Research*. Translated by Arief Furchan, 1982, National Business, Surabaya.

White, F. M., 1994, *Fluid Mechanics*, 3rd edition, McGraw-Hill, Inc., New York.
6. **Internet (karya individual) :**
Rahmeyer, W. J. & Chain, F., 2005, "Calibration and Verification of Cavitation Testing Facilities using an Orifice", termuat di: www.engineering.usu.edu/cee/, diakses 21 Juli 2005.

2.5 Table Preparation

To compile the table, it is necessary to pay attention to the following things.

1. Each table is assigned a table number and the name/title of the table written above the table in question as in the following example:

Table 2.1 Price of friction coefficient in pipe joints

No.	Components	Coeficin Secrecy
1	Elbow Regular 90o, flanged	0.3
	Regular 90o, treated	1.5
2	Ties Line flow, flanged	0.2

Source : Monon ¹⁰
Description : Table 2.1

In this case: 2 is the chapter number
1 is the sequence number in that chapter.

- 2. Ideally, the table can be made as concise as possible, not more than one page.
- 3. If a table has to be written on more than one page, the following conditions must be followed.
 - a. When written in loose pages, each page is numbered and titled a table in the form of:

Table x.y Table Title (advanced u/v) In this
case : u = table sheet number;
v = number of table sheets.

- b. If the size of the table in a horizontal direction exceeds one page, it can extend to the right with Size multiples Round against 21.50cm. The folds are only parallel to the volume and the book (no creases that cross the middle straight).
Description:
All the rows in the table are aligned with the regular text so that to read the table there is no need to rotate the book.

- 4. Photocopied tables and other books/sources, must be numbered and titled tables that correspond to the sequence number in the TGA book itself (in accordance with paragraph 1 above).
- 5. All tables that are not processed by the students themselves (including those that are photocopied), must be named the source at the bottom left of the table. In the table processed by the author himself, there is no need to include "author source".

2.6 Drafting Images and Graphics

The following description contains several things that need to be considered in compiling images and graphics in TGA.

1. Each image or graph listed in a paragraph/chapter is numbered and named at the bottom in the form of:

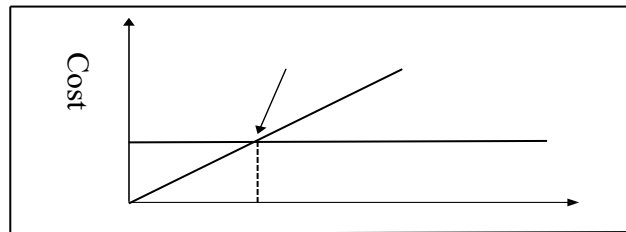


Figure 2.1 Image Title Source :
Pujawan ¹¹

Note : Figure 2.1

In this case: 2 = chapter number

1 = the sequence number of the images in that chapter.

2. The location of the image must be after the mention in the writing.
3. An image should be able to help clarify the material being discussed.
4. An image should not begin and end a paragraph or page, except for a full-page image. The size of the image does not exceed one page (except for the image in the appendix).
5. Parts of the image (including the number and name) must be clearly separated from the description in the paragraph.
6. Images that are quoted (including photocopies) from other sources, must be numbered and the name of the image itself at the bottom in accordance with point 1 above, below which must be the source (there is no need to write "author's source" for self-processed images).
7. In the writing section (chapter content), pictures with the full size of one page should not be placed in a row (there must be a page of writing between two pages of images).
8. Image placement must be within the image frame

2.7 Preparation of Attachments

Several things need to be considered to compile attachments in the PW report, such as the following description:

1. The appendix or appendix consists of: pictures/graphs, tables, *log books*, or calculations that are too large in format, are not included in the paragraph/chapter section. The page numbers of the appendices are continuations of the previous pages.

2. Appendages are separated into three groups:

a = Image/graphic

b = table

c = Calculation

Example:

Appendix C. 1 Road speed calculation In this

case: c = calculation group

1 = the first attachment to the calculation.

Appendix C. Calculation

C.1 Road speed calculation

The average road speed of public transportation buses per route can be calculated using equation 2.1 page 5 as follows:

$$V_p = s/T_t \dots\dots\dots(\text{km/h})$$

where :

s = average mileage (km)

= 608 km (data on page 34 Table L.4.1)

T_t = average travel time (hours)

= 8.49 hours (data page 36 Table L.4.4)

throw :

$$V_p = 608 / 8.49$$

$$= 71.61 \text{ km/h}$$

2.8 Cover Color

The cover color of the practice work report is yellow.

CHAPTER III

EVALUATION OF PRACTICAL WORK RESULTS

The evaluation of the results of the PW is an evaluation of the implementation and report of the student's Practical Work (PW) carried out by the Practical Work supervisor as a determination of the feasibility of the student's graduation of the Practical Work course.

3.1 Requirements for Evaluation of Practical Work Results

The requirements to apply for the evaluation of PW results are:

1. Registered As Student on semester The bersangkutan, by showing proof of tuition payment,
2. Have filled out the Course Registration Form (*IRS*) by listing PW courses,
3. Studying at the 6th or 7th semester, with a GPA of > 2 and a D grade of $10\% <$ distributed in the group of courses according to the curriculum,
5. Have completed the PW at the appointed company.
6. Have completed the writing of the PW report, in accordance with the special tasks given, and have been approved by the supervisor.
7. Attach the *Log Book* to the Attachment section of the PW Report.

3.2 Rating

The assessment of the results of student practical work is carried out by paying attention to the following things:

1. The PW score is given by the PW supervisor.
2. The quality of PW reports is the responsibility of students and PW supervisors; and
3. The PW supervisor makes the final decision to determine the results of the PW evaluation in accordance with the Academic Administration Guidelines for Undergraduate and Diploma Programs at Universitas Diponegoro.
4. Students submit the PW Report to the PW supervisor.
5. Students submit the PW Report and PW control card to the study program.
6. The supervisor submits the results of the PW evaluation to the Study Program.

7. The study program submits the final score of the practical work to the Faculty Education Sub-Division.
8. The PW score is given by the PW supervisor based on the mastery of the Practical Work CPMK.

PLO 6	Understand the right research methods in the field of physics for the preparation of final projects, writing scientific papers for seminars and competitions national and international levels.
(CLO 17)	Able to apply research methods for the creation of final projects and writing scientific papers as well as the dissemination of results
PLO 7	Equipping Indonesian and English language skills, entrepreneurship, computing (IT), experimental and field practices who have superior competencies to work independently or in a team
(CLO 20)	Able to apply experimental and field principles both independently and teamwork

CHAPTER IV

EQUIVALENCE OF PRACTICE WORK

Students who participate in national and international competitions relevant to the field of Physics can apply for PW equivalence, where the activity of participating in the competition can be recognized as PW. It is required that those who take part in the competition are Physics students and carry the name of Universitas Diponegoro. The decision on the eligibility of PW equivalence is determined by the Study Program Coordinator.

4.1 Practical Work Equivalency Requirements

For students who have participated in the competition, they can apply for PW equivalence, with the following requirements:

1. Students submit an application for PW equivalence to the Study Program Coordinator by attaching proof of membership (certificate)
2. If the study program coordinator approves the equivalence, the PW Coordinator will appoint a PW supervisor for the student concerned.
3. The student is required to make a PW report in accordance with the guidelines, with Special Tasks related to the competition to be followed, in accordance with the direction of the PW supervisor.
4. In terms of participation in the form of a team, each student is guided by a supervisor, and each student is required to make their own report with their own special tasks.

4.2 Requirements for Evaluation of Practical Work Equivalency Results

The student's PW report is evaluated like other PW reports, with the requirements as described in article 3.1.

4.3 Rating

The assessment of PW equivalence results also follows the PW results assessment guidelines as explained in sub-chapter 3.2.

PRACTICAL WORK IMPLEMENTATION CONTROL CARD
BACHELOR OF PHYSICS PROGRAM 14 pt, bold, uppercase

DEPARTMENT OF PHYSICS
FACULTY OF SCIENCE AND MATHEMATICS
UNIVERSITAS DIPONEGORO



1 hook spaced 1.5

Student Name :
 NIM : 1.5 spaces
 PW Location :

Yes	Departments	Verification Description	Signature
1	Practice Work Coordinator	<input type="checkbox"/> Appointment of DG Supervisor:	
2	Practice Work Supervisor	<input type="checkbox"/> PW special task consultation <input type="checkbox"/> Report before leaving for the company	
3	Practice Work Coordinator	<input type="checkbox"/> PW Acceptance Letter from the Company	
4	Supervisor/Mentor from the Company	<input type="checkbox"/> Report after completion of the PW at company.	
5	Practice Work Supervisor	<input type="checkbox"/> Report after completion of PW in the company.	
6	Practice Work Supervisor	<input type="checkbox"/> The Practice Work Report has been completed.	

Space 1

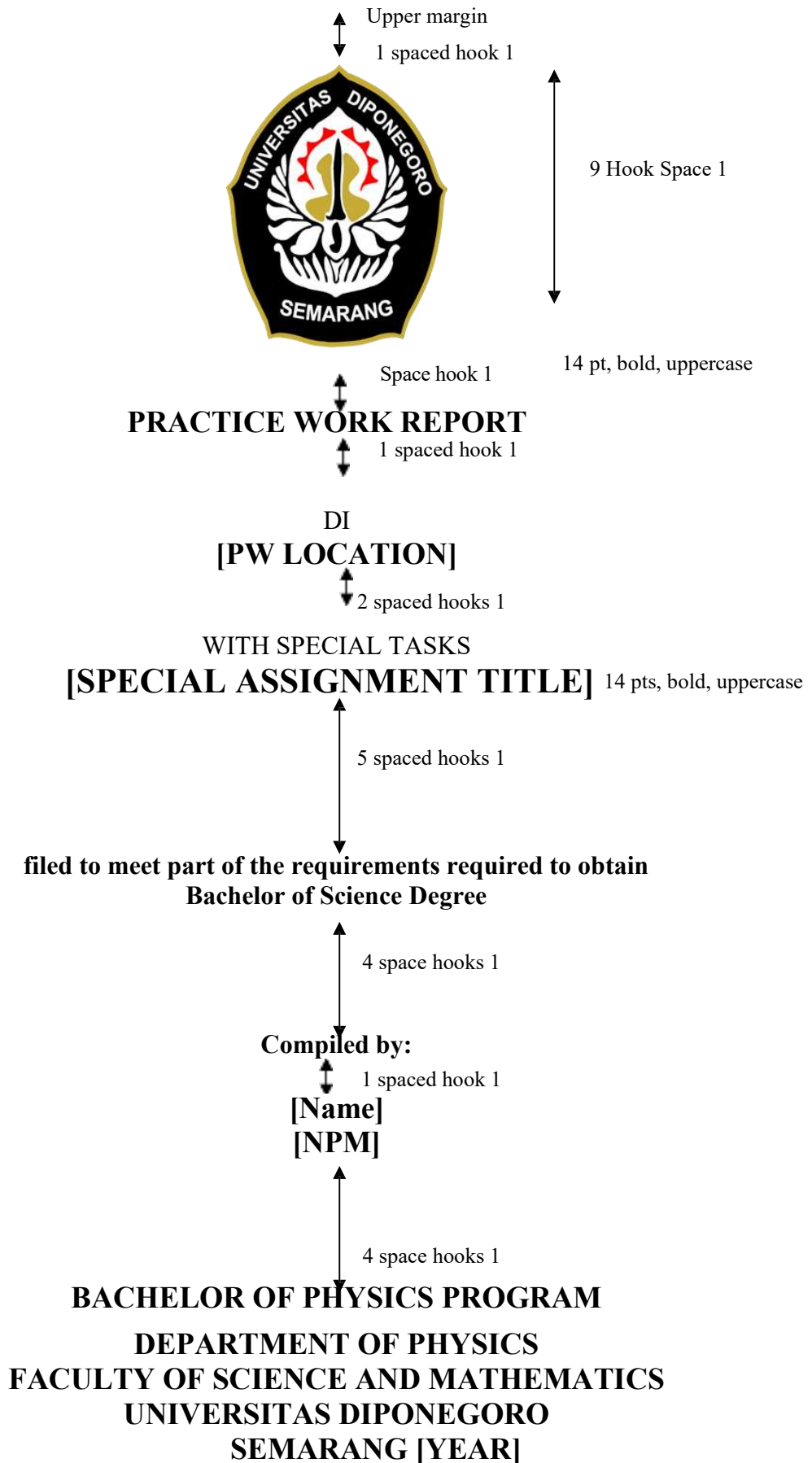
Semarang,

Supervisor

.....

NIP.

Appendix 2 Example Title Sheet



VERIFICATION SHEET

5 mm

2 hooks spaced 1.5

←→ Reports Work Practice di
with the title ".....",

Compiled by:

Name :

NPM :

Majors :

Study Programs :

The Practical Work has been carried out from the date of up to
..... as a requirement to complete studies in the Bachelor of Physics Program,
Department of Physics, Faculty of Engineering, Universitas Diponegoro.

Semarang,

Approved/Verified :

1 hook space 1.5

1 hook space 1.5

Practice Work Coordinator

Supervisor

1 Hook Space 1.5
14 pt, bold, uppercase

.....
NIP.

.....
NIP.

Knowing/Approving, Practical

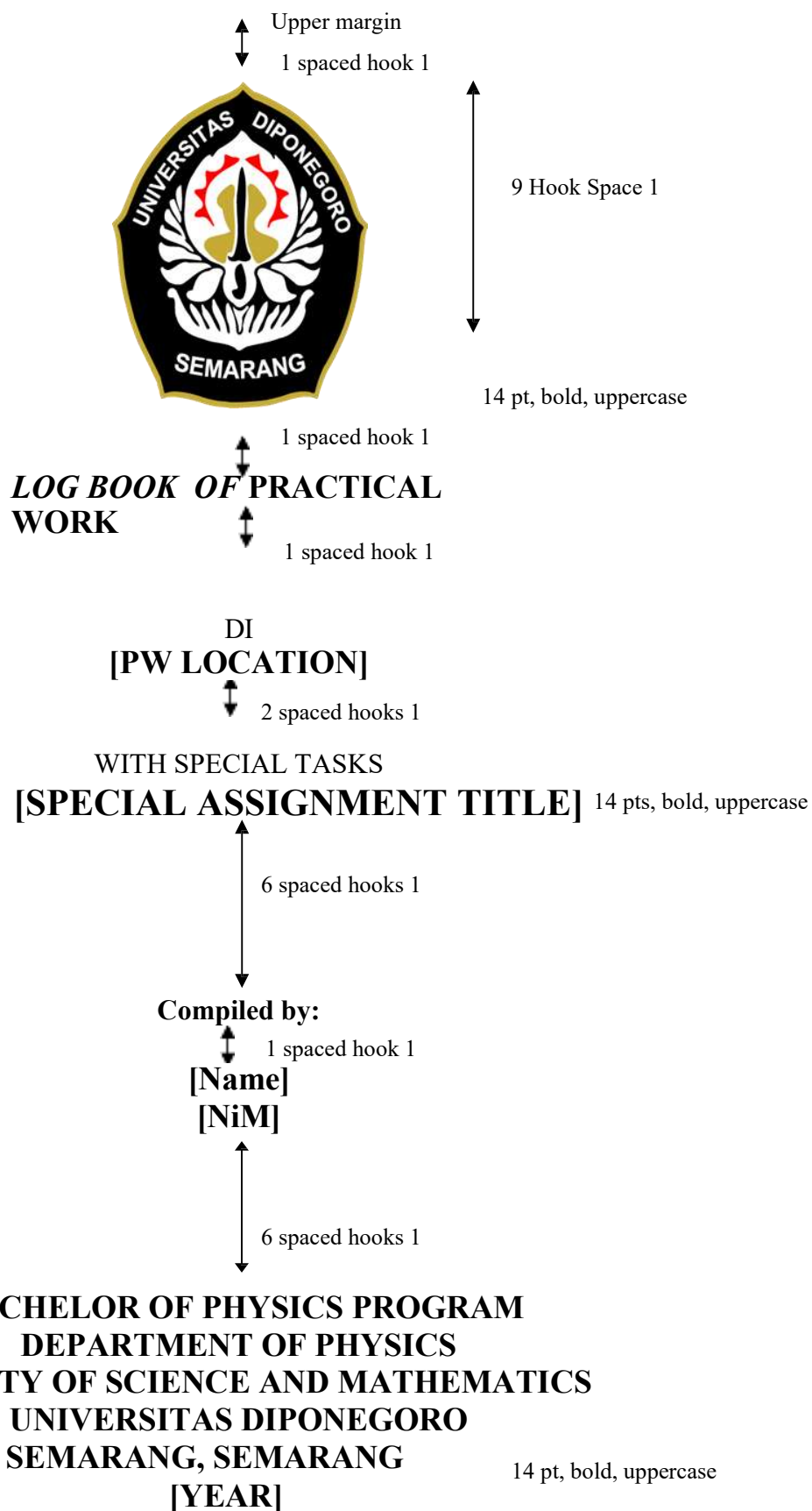
1 hook space 1.5

Work Coordinator

3 hook space 1.5

.....
NIP.

Appendix 4 Log Book title sheet *example*



Appendix 4 Examples of *Log Book Contents*

RECORD OF PRACTICAL WORK ACTIVITIES

Name :
 NIM :
 Practice Work Location :
 Special Task Title :

Day	Date	Activities	Notes
1			
2			
3			

Place, Date

Know :

Supervisor/Supervisor,

Students,

.....

.....

Appendix 6 PW Flowchart or Procedure

FLOWCHART

No	Activities	Parties Involved						Time Working Hours	Document
		Students	PW Cord	PW Spv	SP	FC	PW-Inst		
1	Students register for PW at the PW coordinator and complete the requirements/files							30 minutes	- copy IRS - copy Transcript
2	The PW Coordinator (PW Cord) determines the PW Supervisor							30 minutes	- copy IRS - copy Transcript
4	Students and PW Supervisor (PW Spv) discuss the institution where the PW							30 minutes	
5	The Study Program (SP) makes a letter of introduction for the application for PW to the Faculty							30 minutes	letter
6	The faculty (FC) makes a PW application letter to the intended institution (PW-inst).							60 minutes	letter
7	Students and PW Supervisors determine PW topics							1 day	layout proposal
8	Students make PW proposals							15 days	proposal
9	Students carry out PW							15 days	Decree of the Rector of UD Mhs.
10	Students make PW reports								Report
11	PW seminar students								Report
12	Students submit assessment sheets to the PW coordinator								Report



PRACTICAL WORK EXAM (PW) ASSESSMENT FORM
BACHELOR OF PHYSICS, DEPARTMENT OF PHYSICS

FACULTY OF SCIENCE AND MATHEMATICS, DIPONEGORO UNIVERSITY

NAME :
NIM :
TITLE/THEME :

CRITERIA	INDICATOR	Max Value	GRADES
Editorial		20	
a. Vocabulary and sentences	The use of good and correct vocabulary and sentences.	10	
b. Formulas, graphs, images, tables & error	Correct fulfillment of the rules of writing formulas, creating graphs, drawings, tables, calculation errors.	10	
Substance		40	
a. Topics	Relevance of the topic to instrumentation and electronics	10	
b. Background and purpose	Background and purpose accuracy	10	
c. Methods, results and discussion	The accuracy of the method used and the results as well as the discussion and conclusion.	20	
Presentation and Mastery		40	
a. Presentation	Punctuality and good use of presentation media.	10	
b. Mastery	Ability to deliver presentations and answer questions appropriately	30	
TOTAL VALUE		100	

Description :

THE \geq 80 = A
70 \leq TO \leq 79 = B
THE \leq 69 = C

Semarang ,
Supervisor

(.....)
NIP.