



TEACHING INSTRUCTIONAL DESIGN (BRP)
COURSE
SEMINAR

by

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PREFACE

The Seminar course was intended for 7th semester physics student that had at least completed 112 credits. On the first four weeks, students are taught about thesis writing, scientific papers, and presentation skills. Students are given task to find a certain topic, prepare scientific paper and its corresponding presentation. From the 5th week until the 14th week, students present their paper. Students are given 20 minutes to present, 10 minutes to have Q&A, and another 10 minutes for feedback from lecturer and students. At the end of the course, students submit their papers.

After completing this course, students are expected to be able to write their undergraduate thesis in accordance with Universitas Indonesia guideline. Students are also expected to be able to write a scientific paper that are applicable to publication in accordance with DIKTI and present it in national or international forum.

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I. General Information

1. Name of Program / Study Level : Physics / Undergraduate
2. Course Name : Seminar
3. Course Code : SCFI604101
4. Semester : 7
5. Credit(s) : 2 Credits
6. Teaching Methods(s) : Discussion, scientific writings, and presentation
7. Prerequisite Course(s) : >112 Credits
8. Requisite Course(s) : Undergraduate Thesis
9. Integration Between Other Courses : Undergraduate Thesis
10. Lecturer(s) : Thesis Advisor
11. Course Description : This course will teach about the correct way of writing a thesis and presenting the research result in accordance with Universitas Indonesia guideline. The course will be taught in Indonesian.

II. Course Learning Outcome (CLO) and Sub-CLOs

A. CLO

After completing this course, 7th semester physics students will be able to write scientific paper and present their research findings.

B. Sub-CLOs

1. Able to write a thesis in accordance with Universitas Indonesia guideline.
2. Able to write a scientific paper applicable to publication.
3. Able to make a presentation from research results.
4. Able to present the research results well.

III. Teaching Plan

Week	Sub-CLO	Study Materials	Teaching Method	Time Required	Learning Experiences (*O-E-F)	Sub-CLO Weight on Course (%)	Sub-CLO Achievement Indicator	References
1	1	<ul style="list-style-type: none"> Thesis writing according to UI guideline (chapter 1 & 2) 	Discussion, scientific writing	100 minutes	70% O, 20% E, 10% F	5	Able to write introduction and literature review.	[1], [2], [3], and [4]
2	1	<ul style="list-style-type: none"> Thesis writing according to UI guideline (chapter 3, 4, 5, abstract, references, and attachment) 	Discussion, scientific writing	100 minutes	70% O, 20% E, 10% F	5	Able to write experiment method, data processing, discussion, conclusion, references, abstract, and attachment.	[3] and [4]
3	2	<ul style="list-style-type: none"> Writing scientific paper that is applicable to publication 	Discussion, scientific writing	100 minutes	70% O, 20% E, 10% F	5	Able to write introduction, experiment method, discussion, data processing, conclusion, abstract, and references.	[3], [4] and [5]
4	3	<ul style="list-style-type: none"> Make presentation from research results 	Discussion, scientific writing	100 minutes	70% O, 20% E, 10% F	5	Able to make PowerPoint or poster in accordance to the guideline (structure, time, font size, picture, color, etc)	[4], [5], and [6]

5-14	4	<ul style="list-style-type: none"> Present research results 	Presentatio n	100 minutes per week	10% O, 80% E, 10% F	80	Able to present research results with PowerPoint or poster correctly.	[5] and [6]
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*) O : Orientation
E : Exercise
F : Feedback

References:

1. Surat Keputusan Rektor UI nomor 628/SK/R/UI/2008, tentang Pedoman Teknis Penulisan Tugas Akhir Mahasiswa Universitas Indonesia, 16 June 2008.
2. Format dokumen Naskah Ringkas Tugas Akhir, Perpustakaan Universitas Indonesia, Desember 2012
3. R. Weissberg dan S. Buker, Writing Up Research; Experimental Research, Report Writing for Students of English, Prentice-Hall, Inc, 1990.
4. R. A. Day, How to Write and Publish a Scientific Paper, 3rd ed., Cambridge Univeristy Press, 1991.
5. Examples of scientific paper and the procedures
6. Various source from internet about scientific presentation technique.

IV. Assignment Design

Week	Assignment Name	Sub-CLOs	Assignment	Scope	Working Procedure	Deadline	Outcome
1	Thesis writing 1	1	Thesis writing	Introduction and literature review	Discussion in class with group or independent	100 minutes	Assignment report
2	Thesis writing 2	1	Thesis writing	Experiment method, data processing, discussion, conclusion, references, abstract, and attachment	Discussion in class with group or independent	100 minutes	Assignment report
3	Scientific paper writing	2	Scientific writing	Introduction, experiment method, discussion, data processing, conclusion, abstract, and references.	Discussion in class with group or independent	100 minutes	Assignment report
4	Making PowerPoint or poster	3	Preparing presentation	Research results	Discussion in class with group or independent	100 minutes	PowerPoint, Assignment report
5-14	Presentation	4	PowerPoint or poster presentation	Research results	Presentation in front of class and lecturer	100 minutes each week	Presentation

V. Assessment Criteria (Learning Outcome Evaluation)

Evaluation Type	Sub-CLOs	Assessment Type	Frequency	Evaluation Weight (%)
Papers	1-3	Scientific paper scoring rubric	1	50
Presentation	4	Presentation rubric	1	50
Total				100

VI. Rubric(s)

A. Criteria of Thesis Defense

Thesis Defense Rubric							
Faculty of Mathematics and Natural Science Universitas Indonesia							
Average:							
No	Aspects	INADEQUATE (<70)	LACKING (70 - 74.9)	ADEQUATE (75 - 79.9)	SATISFACTORY (80 - 84.9)	EXCELLENT (85 - 100)	SCORE
1	Writings structure and technique	Does not contain most of the required structures.	Unsystematic writings,	Systematic writings according to guideline,	Systematic writings according to guideline,	Systematic writings according to guideline,	
			introduction lacks background information,	introduction contains background information,	introduction contains background information,	introduction contains background information,	
			literature review, theory, and concepts are irrelevant to the research problem,	literature review, theory, and concepts are relevant to the research problem,	literature review, theory, and concepts are relevant to the research problem,	literature review, theory, and concepts are relevant to the research problem,	
			research method is not in accordance with the objectives,	research method is not in accordance with the objectives,	research method support the thesis objectives,	research method support the thesis objectives,	
			references used are less relevant and less credible (most are not peer-reviewed or from official websites),	references used are less relevant and less credible (most are not peer-reviewed or from official websites),	references used are less relevant but credible (peer-reviewed or from official websites),	references used are relevant and credible (peer-reviewed or from official websites),	
			language and terminology can be understood but are not relevant and inconsistent.	language and terminology can be understood and consistent.	language and terminology used are clear and consistent	language and terminology used are clear, easy to understand and consistent	

2	Introduction (title, problem formulation, objectives) and hypothesis	No connection between each item.	Background information doesn't establish the problem,	Background information doesn't establish the problem vaguely,	Background information establish the problem,	Background information establish the problem clearly,	
			objectives does not solve problem and hypothesis isn't relevant to the problem.	objectives only address the problem partially and hypothesis isn't relevant to the problem.	objectives address the problem but hypothesis isn't relevant to the problem.	objectives address the problem and hypothesis is relevant to the problem.	
3	Substance	No innovation (Master/Doctor),	Little innovation (Master/Doctor),	Innovative but less contribution to science (Master/Doctor),	Innovative but less contribution to science (Master/Doctor),	innovative and contribute to science (Master/Doctor),	
		problems are discussed superficially,	problems are discussed superficially,	problem are discussed shallowly,	problems are discussed at depth but less comprehensive,	problems are discussed at depth and comprehensively,	
		concepts used are not accurate and inadequate,	concepts used are not accurate and inadequate,	concepts used are accurate but not comprehensive enough,	concepts used are accurate and comprehensive,	concepts used are accurate and comprehensive,	
		research objective weren't achieved.	research objective achieved partially.	research objective achieved partially.	research objective achieved.	research objective achieved.	
4	Method and data analysis	Discussion is vague,	Discussion contain vague connection between data and analysis,	Discussion contain clear connection between data and analysis,	Discussion contain very clear connection between data and analysis,	Discussion contain very clear connection between data and analysis,	
		data are hard to understand, doesn't support research objectives, and not original.	data comparison isn't supported by the theory,	data comparison is supported slightly by the theory,	data comparison is supported adequately by the theory,	data comparison is supported by the theory,	

			data are understandable (picture, table, and graphic are understandable), support the objectives, and original.	data are understandable (picture, table, and graphic are understandable), support the objectives, and original.	data are understandable (picture, table, and graphic are understandable), support the objectives, and original.	data are detailed (picture, table, and graphic are apparent), support the objectives, and original.	
5	Conclusion	Conclusion isn't made according to research result and discussion.	Conclusion isn't sufficient, doesn't address the problem or research objectives.	Conclusion is sufficient but doesn't address the problem or research objectives.	Conclusion is adequate but only address the problem or research objectives slightly.	Conclusion is good enough and address the problem as well as research objectives.	
6	Research result presentation	Presentation have no structure,	Presentation have disorganized structure,	Presentation have slight structure,	Presentation is structured,	Presentation is well structured,	
		isn't focused on the research done,	use poor sentence structure and language,	use adequate sentence structure and language,	use good sentence structure and language,	use good sentence structure and language,	
		presentation preparation are inadequate.	bad attitude,	good attitude,	good attitude,	good attitude,	
			less focus on the research done,	focus on the research done,	focus on the research done,	very focused on the research done,	
			presentation preparation are lacking.	presentation preparation are adequate.	presentation preparation are good.	presentation preparation are excellent.	
7	Research result discussion	Does not answer most if not all question asked,	Not able to answer the question clearly, straightforwardly, precisely, and politely,	Able to answer the question in a slightly clear, straightforward, polite, and precise manner,	Able to answer the question in a clear, straightforward, polite, and precise manner,	Able to answer the question in a clear, straightforward, polite, and precise manner,	
		does not give argument.	very little argument based on data.	argument based on data slightly.	argument based on data slightly.	argument based on data.	

8	Thesis completion and scientific attitude* (addition for advisor)	Thesis guidance didn't increase thesis quality	Thesis guidance didn't really increase thesis quality,	Thesis guidance increase thesis quality slightly,	Thesis guidance increase thesis quality,	Thesis guidance increase thesis quality greatly,	
			follows some of the guidance given by advisor,	follows some of the guidance given by advisor,	follows all guidance given by advisor,	follows all guidance given by advisor,	
			ineffective communication,	effective communication,	effective communication,	effective communication,	
			revision quality is lacking.	revision quality is good enough.	revision quality is good enough.	revision quality is very good.	

B. Criteria of Presentation Score

Criteria	A (90)	B (75)	C (60)	D (50)
Organization (Order, flow, and transition)	Information is presented in an effective order. The excellent structure of paragraphs and transitions improves readability and comprehension. The executive summary or abstract is presented first, allowing the reader to easily follow the rest of the report.	Information is logically ordered by paragraphs and transitions. Within sections, the order in which ideas are presented may be confusing at times.	Information is scattered and needs further development.	There is no clear sequence of paragraphs, so there is no progressive flow of ideas. The details and examples are disorganized, difficult to follow or understand.
Information Quality	Supporting details are specific to the topic and provide the necessary information.	Some details do not support the topic of the report.	Details are a bit vague.	No details on the information given.

Introduction	Paragraph is clearly stated, has a sharp focus, and increases the impact of the report.	Paragraph is clearly stated.	Paragraph is not structured correctly.	Paragraph is unclear and vague.
Conclusion	Paragraphs summarize concisely and draw a clear and effective conclusion that increase the impact of the report.	Paragraphs summarize the entire topic concisely.	Paragraphs does not draw the correct conclusion.	Paragraph is unclear and vague
Use of language: words choice, grammar, and sentence structure	Sentences are complete, grammatical, and flow together easily. The word is chosen for its proper meaning.	Most sentences are complete, grammatical, and flow together. Mistakes are minor and does not distract reader.	Minor mistakes in sentence structure and grammar are frequent. Unnecessary repetition of words and phrases.	Major mistakes in sentence structure and grammar. Frequent repetition of words and phrases.
Use of pictures: numbers, graphs & images	All numbers, graphics and images used are accurate, consistent with text, and of good quality. Appropriate and consistent labeling.	Most numbers, graphics, and images used are accurate. A few inconsistencies in labeling.	Some inaccurate graphics and images are used. Labeling is not consistent.	Numbers, graphs, and images used are not accurate, bad quality, and not properly labeled.