TEACHING INSTRUCTIONAL DESIGN (BRP)

COURSE

SEMINAR

by

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UNIVERSITAS INDONESIA
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
PHYSICS UNDERGRADUATE STUDY PROGRAM

TEACHING INSTRUCTIONAL DESIGN

Course Name	Seminar	**Credit(s)**	**Prerequisite course(s)**	**Requisite for course(s)**	**Integration Between Other Courses**
Course Code	SCPH603166	2	>64 Credits	None	Undergraduate Thesis
Relation to Curriculum	Compulsory				
Semester	5				
Lecturer(s)	Thesis Advisor				
Course Description	This course will teach about the correct way of writing a thesis and presenting the research result in accordance with University of Indonesia guideline. The course will be taught in Indonesian.				

Program Learning Outcome (PLO)	
PLO 1	Formulating problems and solving physics and its application, as well as interdisciplinary problems related to science and mathematics clusters critically, creatively, and innovatively.
PLO 2	Summarizing the basic knowledge in science and technology.
PLO 3	Applying the basic concepts of physics in the community and practical life, as well as identifying and adapting to new things.
PLO 4	Practicing attitudes and skills that support success at work and in participating in community advice.

PLO 5	Having the knowledge of the basic elements of Bahasa Indonesia and English in the field of physics in particular and science and technology in general.
PLO 6	Solving simple scientific problems and presenting them orally and in writing.
Course Learning Outcome (CLO)	
CLO 1	After completing this course, physics students will be able to write scientific paper and present their research findings.
Sub-CLO(s)	
Sub-CLO 1	Able to write a thesis in accordance with University of Indonesia guideline.
Sub-CLO 2	Able to write a scientific paper applicable to publication.
Sub-CLO 3	Able to make a presentation from research results.
Sub-CLO 4	Able to present the research results well.
Study Materials	• Thesis writing according to UI guideline (chapter 1 & 2) • Thesis writing according to UI guideline (chapter 3, 4, 5, abstract, references, and attachment) • Writing scientific paper that is applicable to publication • Make presentation from research results • Present research results
Reading List	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.

I. Teaching Plan

Week	Sub-CLO	Study Materials [with reference]	Teaching Method [with est. time]	Learning Experiences (*O-E-F)	Sub-CLO Achievement Indicator		Sub-CLO Weight on Course (%)
					General	Specific	
1	1	Thesis writing according to UI guideline (chapter 1 & 2)	Discussion, scientific writing	70% O, 20% E, 10% F	Able to discuss thesis with advisor	Able to write introduction and literature review.	5
2	1	Thesis writing according to UI guideline (chapter 3, 4, 5, abstract, references, and attachment)	Discussion, scientific writing	70% O, 20% E, 10% F	Able to discuss thesis with advisor	Able to write experiment method, data processing, discussion, conclusion, references, abstract, and attachment.	5
3	2	Writing scientific paper that is applicable to publication	Discussion, scientific writing	70% O, 20% E, 10% F	Able to write a thesis	Able to write introduction, experiment method, discussion, data processing, conclusion, abstract, and references.	5
4	3	Make presentation from research results	Discussion, scientific writing	70% O, 20% E, 10% F	Able to prepare a presentation	Able to make PowerPoint or poster in accordance to the guideline (structure, time, font size, picture, color, etc)	5
5-14	4	Present research results	Presentation	10% O, 80% E, 10% F	Able to present a presentation	Able to present research results with PowerPoint or poster correctly.	80

II. 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

III. Assessment Criteria (Learning Outcome Evaluation)

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

IV. Rubric(s)

This rubric is used as a guideline for assessing or giving levels of student performance results. a rubric usually consists of assessment criteria that include the dimensions / aspects that are assessed based on indicators of learning achievement. This assessment rubric is useful for clarifying the basics and aspects of the assessment so that students and lecturers can be guided by the same thing regarding the expected performance demands. Lecturers can choose the type of rubric according to the assessment given.

A. Conversion of the student's final score

Score	Grade	Equivalent
85 - 100	A	4.00
80 - < 85	A-	3.70
75 - < 80	B+	3.30
70 - < 75	B	3.00
65 - < 70	B-	2.70
60 - < 65	C+	2.30
55 - < 60	C	2.00
40 - < 50	D	1.00
< 40	E	0.00

B. Criteria of Thesis Defense

Thesis Defense Rubric							
Faculty of Mathematics and Natural Science University of 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 arent peer-reviewed or from official websites),	references used are less relevant and less credible (most arent 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 doesnt establish the problem,	Background information doesnt establish the problem vaguely,	Background information establish the problem,	Background information establish the problem clearly,	
			objectives does not solve problem and hypothesis isnt relevant to the problem.	objectives only address the problem partially and hypothesis isnt relevant to the problem.	objectives address the problem but hypothesis isnt 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 werent 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 isnt 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 isnt made according to research result and discussion.	Conclusion isnt 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,	

		isnt 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.	

C. 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.