Document Code



## Universitas Negeri Surabaya Faculty of Mathematics and Natural Sciences Undergraduate Chemistry Education Study Program

		SEI	ME	ST	ER	LE	EAF	RN	INC	G F	PLA	١N							
Courses		CODE				Cour	se Fa	mily			Cred	lit W	eight		SEM	ESTER	Co	mpilati te	ion
Thesis		842040625	9								T=6	P=0	EC	ΓS=9.54	l l	7	Jur 202	ie 20, 22	
AUTHORIZA <sup>*</sup>	ΓΙΟΝ	SP Develo	P Developer				Co	ourse	Clu	ster (	Coord	inator	Stud	Study Program Coordinator					
		Prof. Dr. Ut	Prof. Dr. Utiya Azizah, M.Pd.					Dr	·. Mita	arlis, :	S.Pd.	, M.Si		Prof. Dr. Utiya Azizah, M.Pd.			,		
Learning model	Case Studies																		
Program Learning	PLO study pro	gram which is c	harge	ed to	the	cour	se												
Outcomes (PLO)	PLO-6	Able to adapt to v continue education																	
	PLO-8	Mastering the bas communicating th of education (CPI	sics of em bo	scier oth or	ntific r ally a	netho nd in	ds, de writin	esign g by	ing a utilizi	nd ca ng inf	ırrying forma	g out ition a	resea and co	rch, coi mmuni	npiling cation t	scientif echnolo	ic rep ogy in	orts an the fie	d ld
	PLO-9	Mastering the prir well as how to op								ity), n	าลทลดู	ging t	he lab	oratory	and us	ing its	equipr	nent as	6
	PLO-11	Able to demonstrate basic principles of	ate kn f sepa	owled ration	lge re n, ana	elated alysis,	to the	eoreti nesis	ical co	once <sub>l</sub> chara	ots al cteriz	out station	structu of ch	re, dyn emicals	amics a (CPL :	and ene 1)	rgy, a	s well	as
	Program Obje	ctives (PO)																	
	PO - 1	Able to apply chemistry education		ry, re	seard	ch me	ethod	ology	, and	d sta	tistics	to	solve	problei	ems related to chemistry and				and
	PO - 2	Master the basic ideas for solving of												nalysis	s techniques to develop written				
	PO - 3	Make decisions be them in the form of			e resu	ılts of	scier	itific r	easo	ning	analy	sis o	f chen	nical pro	blem s	solving	efforts	and w	rite
	PO - 4	Have a responsible them in academic			in ap	plyin	g writ	ten id	deas	in so	lving	cher	nical <sub> </sub>	oroblen	s and	be able	e to a	ccount	for
	PLO-PO Matrix	X																	
		P.O		PL	.O-6			PLO-	8		PL	O-9		PL	0-11				
		PO-1																	
		PO-2																	
		PO-3																	
		PO-4																	
	PO Matrix at ti	ne end of each le	earnır	ng sta	age (	Sub-	PO)												
		P.O	Ī								We	ek							
			1	2	3	4	5	6	7	8	9	10	11	. 12	13	14	15	16	
		PO-1												+	1				
		PO-2																	
		PO-3																	
		PO-4																	

Short Course Description	systematizing, then wr	raining develops scientific reasoning power through library/school/field studies regarding chemistry education topics, searching, systematizing, then writing them in the form of papers and presenting them orally and conducting research based on scientific studies to solve chemistry education problems.								
References	Main :									
		<ol> <li>Tim (2006). Panduan Penulisan dan Penilaian Skripsi. Surabaya: Unesa University Press.</li> <li>Tim. (2011). Panduan Penulisan Proposal dan Skripsi Program Studi Pendidikan Kimia. Surabaya: Unesa University Press.</li> </ol>								
	Supporters:									
	1. Jurnal ilmiah te	erkait								
Supporting lecturer	Prof. Dr. Utiya Azizah,	M.Pd.								

Week-	Final abilities of each learning stage	Ev	/aluation	Lear Stude	elp Learning, rning methods, nt Assignments, stimated time]	Learning materials [ References	Assessment Weight (%)
	(Sub-PO)	Indicator	Criteria & Form	Offline ( offline )	Online ( online )	1	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Understand the techniques for preparing a scientific work	1.Explain the meaning of scientific work 2.Explain the components of scientific work  work  1.Explain the components of scientific work  1.Explain the components of scientific work  1.Explain the meaning to scientific work	Criteria:     assignments and participation  Form of Assessment:     Participatory Activities,     Project Results     Assessment / Product     Assessment	discussion and question and answer 6 X 50		Material: Techniques for preparing scientific work Reference: Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press. Material: Techniques for preparing scientific work Reader: Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Education Study Program. Surabaya: Unesa University Press. Material: Related scientific journals Library: Related scientific journals	5%

			T		, ,		
2	Able to search library materials and present them in the form of a thesis proposal	1.Able to compile the background of the problem 2.Able to formulate problem formulations 3.Able to formulate research objectives 4.Able to formulate the benefits of research 5.Able to compile operational definitions 6.Able to formulate research assumptions and limitations 7.Able to develop research methods 8.Able to compile a bibliography	Criteria:     assignments and participation  Forms of Assessment:     Participatory Activities, Project Results     Assessment / Product     Assessment, Practices / Performance	Presentation and discussion 6 X 50		Material: Techniques for searching library materials and preparing a thesis proposal Reader: Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.  Material: Techniques for searching library materials and preparing a thesis proposal. Reader: Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Education Study Program. Surabaya: Unesa University Press.	5%

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3	Able to search library materials and present them in the form of a thesis proposal	1.Able to compile the background of the problem 2.Able to formulate problem formulations 3.Able to formulate research objectives 4.Able to formulate the benefits of research 5.Able to compile operational definitions 6.Able to formulate research assumptions and limitations 7.Able to develop research methods 8.Able to compile a bibliography	Criteria:     assignments and participation  Forms of Assessment:     Participatory Activities, Project Results     Assessment / Product     Assessment, Practices / Performance	Presentation and discussion 6 X 50	Material: Techniques for searching library materials and preparing a thesis proposal Reader: Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.  Material: Techniques for searching library materials and preparing a thesis proposal. Reader: Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Education Study Program. Surabaya: Unesa University Press.  Material: Related scientific journals Library: Related scientific	5%

4	Able to search	1.Able to	Criteria:	Presentation	l Ma	aterial:	5%
1							370
	library materials and present them	compile the	assignments and	and .		chniques	
	in the form of a	background	participation	discussion	for		
	thesis proposal	of the	Forms of Assessment	6 X 50		arching	
		problem	. Assessment			rary	
		2.Able to	Participatory Activities,			aterials	
		formulate	Project Results		and		
		problem	Assessment / Product			eparing a	
		formulations	Assessment, Practices /			esis	
		3.Able to	Performance			oposal	
		formulate	1 chomiance			eader	
		research				eam	
		objectives				006).	
		4.Able to				esis riting and	
		formulate				ading	
						iide.	
		the benefits				ırabaya:	
		of research				nesa	
		5.Able to				niversity	
		compile				ess.	
		operational			7.6	-33.	
		definitions			Mo	torial.	
		6.Able to				aterial:	
		formulate			for	chniques	
		research				arching	
		assumptions				rary	
		and				aterials	
		limitations			and		
		7.Able to				eparing a	
		develop				esis	
		research				oposal.	
		methods				ader:	
		8.Able to				am.	
		compile a				011).	
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5 Able to sea library mate and present in the form thesis prop	erials t them of a compile the background	Criteria:     assignments and participation  Forms of Assessment:     Participatory Activities, Project Results     Assessment / Product     Assessment, Practices / Performance	Presentation and discussion 6 X 50	Material: Techniques for searching library materials and preparing a thesis proposal Reader: Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.  Material: Techniques for searching library materials and preparing a thesis proposal. Reader: Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Education Study Program. Surabaya: Unesa University Press.  Material: Related scientific	10%
				Related	

c	Able to gearch	1	Cuitouio	Dua a a mata si - :-	Matarial	100/
6	Able to search library materials	1.Able to	Criteria: assignments and	Presentation	Material: Techniques	10%
	and present them	compile the	participation	and	•	
	in the form of a	background	participation	discussion	for	
	thesis proposal	of the	Forms of Assessment	6 X 50	searching	
		problem	·		library	
		2.Able to	Participatory Activities,		materials	
		formulate	Project Results		and .	
		problem	Assessment / Product		preparing a	
		formulations	Assessment, Practices /		thesis	
		3.Able to	Performance		proposal	
			Performance		Reader	
		formulate			: Team	
		research			(2006).	
		objectives			Thesis	
		4.Able to			Writing and	
		formulate			Grading	
		the benefits			Guide.	
		of research			Surabaya:	
		5.Able to			Unesa	
		compile			University	
		operational			Press.	
		definitions			,	
		6.Able to			Material:	
		formulate			Techniques	
					for	
		research 			searching	
		assumptions			library	
		and			materials	
		limitations			and	
		7.Able to			preparing a	
		develop			thesis	
		research			proposal.	
		methods			Reader:	
		8.Able to			Team.	
		compile a			(2011).	
		bibliography			Guidé to	
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					Material:	
					Related	
					scientific	
					journals	
					Library:	
					Related	
					scientific	
					journals	
				1	journais	

7	Able to search library materials and present them in the form of a thesis proposal	1.Able to compile the background of the problem 2.Able to formulate problem formulations 3.Able to formulate research objectives 4.Able to formulate the benefits of research 5.Able to compile operational definitions 6.Able to formulate research assumptions and limitations 7.Able to develop research methods 8.Able to compile a bibliography	Criteria:     assignments and participation  Forms of Assessment: Participatory Activities, Project Results Assessment / Product Assessment, Practices / Performance	Presentation and discussion 6 X 50	Material: Techniques for searching library materials and preparing a thesis proposal Reader: Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.  Material: Techniques for searching library materials and preparing a thesis proposal. Reader: Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Education Study Press.  Material: Related scientific journals Library: Related scientific journals	10%
8	be accountable for the proposal prepared before the proposal examiner	1.Present the thesis proposal smoothly 2.Answer the proposal examiner's questions correctly 3.Able to compile a bibliography	Criteria:     assignments and participation  Form of Assessment : Participatory Activities, Project Results     Assessment / Product Assessment	Presentation and questions and answers 6 X 50		10%
9	carry out research based on the proposal that has been prepared		Form of Assessment : Practice / Performance	6 X 50	Material: Related scientific journals Library: Related scientific journals	5%
10	carry out research based on the proposal that has been prepared		Form of Assessment : Practice / Performance	6 X 50	Material: Related scientific journals Library: Related scientific journals	5%

12	carry out research based on the proposal that has been prepared  carry out research based on the proposal that has been prepared	Form of Assessment : Practice / Performance  Form of Assessment : Practice / Performance	6 X 50 6 X 50	Material: Related scientific journals Library: Related scientific journals  Material: Related scientific journals  Library: Related scientific journals	5%
13	carry out research based on the proposal that has been prepared	Form of Assessment : Participatory Activities, Practice/Performance	6 X 50	scientific journals  Material: Related scientific journals Library: Related scientific journals	5%
14	compose a thesis based on research results	Form of Assessment : Practice / Performance	6 X 50	Material: thesis writing Reference: Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.  Material: thesis writing Reference: Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Education Study Program. Surabaya: Unesa University Press.	5%

15	compose a thesis based on research results		Form of Assessment : Participatory Activities, Practice/Performance	6 X 50	Material: thesis writing Reference: Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.  Material: thesis writing Reference: Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Education Study Program. Surabaya: Unesa University Press.  Material: Related scientific journals Library: Related scientific journals	5%
16	1.present the results of the thesis in front of the examiners     2.defend the thesis in front of the examiner	1.present the results of the thesis well and correctly 2.answer the examiner's questions	Criteria: thesis exam scores Form of Assessment : Project Results Assessment / Product Assessment	presentation and question and answer 6 X 50		5%

**Evaluation Percentage Recap: Case Study** 

No	Evaluation	Percentage
1.	Participatory Activities	27.5%
2.	Project Results Assessment / Product Assessment	27.5%
3.	Practice / Performance	45%
		100%

## Notes

- Learning Outcomes of Study Program Graduates (PLO Study Program) are the abilities possessed by each Study
  Program graduate which are the internalization of attitudes, mastery of knowledge and skills according to the level of
  their study program obtained through the learning process.
- The PLO imposed on courses are several learning outcomes of study program graduates (CPL-Study Program) which
  are used for the formation/development of a course consisting of aspects of attitude, general skills, special skills and
  knowledge.
- 3. **Program Objectives (PO)** are abilities that are specifically described from the PLO assigned to a course, and are specific to the study material or learning materials for that course.
- 4. Subject Sub-PO (Sub-PO) is a capability that is specifically described from the PO that can be measured or observed and is the final ability that is planned at each learning stage, and is specific to the learning material of the course.
- Indicators for assessing abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities or performance of student learning outcomes accompanied by evidence.
- 6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
- 7. Forms of assessment: test and non-test.
- 8. Forms of learning: Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.

- 9. Learning Methods: Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
- 10. Learning materials are details or descriptions of study materials which can be presented in the form of several main
- points and sub-topics.
  11. The assessment weight is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
  12. TM=Face to face, PT=Structured assignments, BM=Independent study.