



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

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date																																																																																																				
Thesis	4720106167		T=6 P=0 ECTS=9.54	7	June 20, 2022																																																																																																				
AUTHORIZATION	SP Developer		Course Cluster Coordinator		Study Program Coordinator																																																																																																				
	Dr. Amaria, M.Si.		Dr. Nuniek Herdyastuti, M.Si.		Dr. Amaria, M.Si.																																																																																																				
Learning model	Case Studies																																																																																																								
Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																																																																																								
	Program Objectives (PO)																																																																																																								
	PO - 1	Able to apply chemistry, research methodology, and statistics to solve problems related to chemistry																																																																																																							
	PO - 2	Master the basic concepts of chemistry, research methodology, and data analysis techniques to develop written ideas for solving chemical problems and prove them in research activities																																																																																																							
	PO - 3	Make decisions based on the results of scientific reasoning analysis of chemical problem solving efforts and write them in the form of a thesis																																																																																																							
	PO - 4	Have a responsible attitude in applying written ideas in solving chemical problems and be able to account for them in academic forums																																																																																																							
	PLO-PO Matrix																																																																																																								
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>P.O</td></tr> <tr><td>PO-1</td></tr> <tr><td>PO-2</td></tr> <tr><td>PO-3</td></tr> <tr><td>PO-4</td></tr> </table>				P.O	PO-1	PO-2	PO-3	PO-4																																																																																															
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PO Matrix at the end of each learning stage (Sub-PO)																																																																																																									
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">P.O</th> <th colspan="16">Week</th> </tr> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th><th>15</th><th>16</th> </tr> </thead> <tbody> <tr><td>PO-1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PO-2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PO-3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>PO-4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>				P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	PO-1																	PO-2																	PO-3																	PO-4																
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Short Course Description	Training develops scientific reasoning power through library/field/laboratory studies on chemical topics, searching, systematizing, then writing them in the form of papers and presenting them orally and conducting research based on scientific studies to solve chemical problems.																																																																																																								
References	Main :																																																																																																								
	1. Tim. (2011). Panduan Penulisan Proposal dan Skripsi Program Studi Kimia. Surabaya: Unesa University Press. 2. Tim (2006). Panduan Penulisan dan Penilaian Skripsi. Surabaya: Unesa University Press.																																																																																																								
	Supporters:																																																																																																								

	1. jurnal ilmiah terkait						
Supporting lecturer	Dr. Amaria, M.Si.						
Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (offline)	Online (online)		
(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	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 a scientific work Reference: <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i> Material: techniques for preparing scientific papers. Reference: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i> Material: related research journals Library: <i>related research journals</i> Material: related scientific journals Library: <i>related scientific journals</i>	0%

2	Able to search library materials and present them in the form of a thesis proposal	<ol style="list-style-type: none"> 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 	<p>Criteria: assignments and participation</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Presentation and discussion 6 X 50		<p>Material: Techniques for searching library materials and preparing a thesis proposal Reader : <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: preparation of a thesis proposal References: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: related research journals Library: <i>related research journals</i></p> <hr/> <p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%
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3	Able to search library materials and present them in the form of a thesis proposal	<ol style="list-style-type: none"> 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 	<p>Criteria: assignments and participation</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Presentation and discussion 6 X 50		<p>Material: Techniques for searching library materials and preparing a thesis proposal Reader : <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: preparation of a thesis proposal References: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: related research journals Library: <i>related research journals</i></p> <hr/> <p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%
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4	Able to search library materials and present them in the form of a thesis proposal	<ol style="list-style-type: none"> 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 	<p>Criteria: assignments and participation</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Presentation and discussion 6 X 50		<p>Material: Techniques for searching library materials and preparing a thesis proposal Reader : <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: preparation of a thesis proposal References: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%
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5	Able to search library materials and present them in the form of a thesis proposal	<ol style="list-style-type: none"> 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 	<p>Criteria: assignments and participation</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Presentation and discussion 6 X 50		<p>Material: Techniques for searching library materials and preparing a thesis proposal Reader : <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: preparation of a thesis proposal References: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%
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6	Able to search library materials and present them in the form of a thesis proposal	<ol style="list-style-type: none"> 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 	<p>Criteria: assignments and participation</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Presentation and discussion 6 X 50		<p>Material: Techniques for searching library materials and preparing a thesis proposal Reader : <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: preparation of a thesis proposal References: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: related research journals Library: <i>related research journals</i></p> <hr/> <p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%
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7	Able to search library materials and present them in the form of a thesis proposal	<ol style="list-style-type: none"> 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 	<p>Criteria: assignments and participation</p> <p>Form of Assessment : Participatory Activities, Project Results Assessment / Product Assessment</p>	Presentation and discussion 6 X 50		<p>Material: Techniques for searching library materials and preparing a thesis proposal Reader : <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: preparation of a thesis proposal References: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i></p> <hr/> <p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%
8	be accountable for the proposal prepared before the proposal examiner	<ol style="list-style-type: none"> 1. Present the thesis proposal smoothly 2. answer the proposal examiner's questions correctly 	<p>Form of Assessment : Project Results Assessment / Product Assessment</p>	presentation and question and answer 6 X 50			0%
9	carry out research in the laboratory based on the proposal that has been prepared			6 X 50		<p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%
10	carry out research in the laboratory based on the proposal that has been prepared			6 X 50		<p>Material: related research journals Library: <i>related research journals</i></p> <hr/> <p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%

11	carry out research in the laboratory based on the proposal that has been prepared			6 X 50		Material: related scientific journals Library: <i>related scientific journals</i>	0%
12	carry out research in the laboratory based on the proposal that has been prepared			6 X 50		Material: related scientific journals Library: <i>related scientific journals</i>	0%
13	carry out research in the laboratory based on the proposal that has been prepared			6 X 50		Material: related scientific journals Library: <i>related scientific journals</i>	0%
14	compose a thesis based on research results			6 X 50		Material: thesis writing Reference: <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i> ----- Material: thesis writing Reference: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i> ----- Material: related scientific journals Library: <i>related scientific journals</i>	0%

15	compose a thesis based on research results			6 X 50		<p>Material: thesis writing Reference: <i>Team (2006). Thesis Writing and Grading Guide. Surabaya: Unesa University Press.</i></p> <p>Material: thesis writing Reference: <i>Team. (2011). Guide to Writing Proposals and Theses for the Chemistry Study Program. Surabaya: Unesa University Press.</i></p> <p>Material: related research journals Library: <i>related research journals</i></p> <p>Material: related scientific journals Library: <i>related scientific journals</i></p>	0%
16	<p>1. present the results of the thesis in front of the examiners</p> <p>2. defend the thesis in front of the examiner</p>	<p>1. present the results of the thesis well and correctly</p> <p>2. answer the examiner's questions</p>	<p>Criteria: thesis exam scores</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	presentation and question and answer 6 X 50			0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
		0%

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.
- 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.
- 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.

5. **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.