



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

Document  
Code

## SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date
Sdal Conservation	8420402173	Compulsory Study Program Subjects	T=2	P=0	ECTS=3.18	2	January 9, 2023
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator	
	Dr. Mitarlis, S.Pd., M.Si.		Dr. Mitarlis, S.Pd., M.Si.			Prof. Dr. Utiya Azizah, M.Pd.	

<b>Learning model</b>	<b>Project Based Learning</b>
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<b>Program Learning Outcomes (PLO)</b>	<b>PLO study program which is charged to the course</b>
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<b>PLO-6</b>	Able to adapt to various developments in chemical science, continue to develop and learn throughout life to continue education, both formal and informal (CPL 8)
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<b>PLO-8</b>	Mastering the basics of scientific methods, designing and carrying out research, compiling scientific reports and communicating them both orally and in writing by utilizing information and communication technology in the field of education (CPL 6)
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<b>PLO-11</b>	Able to demonstrate knowledge related to theoretical concepts about structure, dynamics and energy, as well as basic principles of separation, analysis, synthesis and characterization of chemicals (CPL 1)
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<b>Program Objectives (PO)</b>	
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<b>PO - 1</b>	- Explain the meaning of the scope of conservation which includes: background, meaning and objectives of natural resource conservation.
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<b>PO - 2</b>	Analyzing the management and problems of natural resources and the environment which includes: problems and management of natural resources and the environment.
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<b>PO - 3</b>	- Analyzing local wisdom which includes: Understanding, approaches, challenges and local wisdom in community life in the future.
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<b>PLO-PO Matrix</b>	
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	P.O	PLO-6	PLO-8	PLO-11															
	PO-1																		
	PO-2																		
	PO-3																		

<b>PO Matrix at the end of each learning stage (Sub-PO)</b>	
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	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																		

<b>Short Course Description</b>	Discusses: natural resources and the environment, biological natural resource problems at local, national and global levels, conservation and management of biological and non-biological natural resources at local, national and global levels, environmental paradigms and ethics, urban natural resource management through observation, discussion and presentation.
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<b>References</b>	<b>Main :</b>
	<ol style="list-style-type: none"> <li>Cluras, D. D. and Reganold, J.P. 2010. Natural Resources Conservation Future . Washington: Washington State University.</li> <li>Indrawan, Mochamad., Primack, Richard B., Supriatna, Jatna. 2007. Biologi Konservasi . Jakarta : Yayasan Obor Indonesia</li> <li>Rachmadiarti, F., Faizah, U., Kuntjoro, S. 2017. Buku Ajar Mahasiswa Konservasi Sumber Daya Alam dan Lingkungan. Surabaya: Unesa University Press.</li> <li>Faizah, U., Rachmadiarti,F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. Buku Ajar Konservasi Sumber Daya Alam dan Lingkungan berbasis Problem Based Learning untuk melatih Sadar Konservasi. Surabaya: Airlangga University Press.</li> </ol>

		<b>Supporters:</b>					
<b>Supporting lecturer</b>		Dr. Prima Retno Wikandari, M.Si. Dr. Tarzan Purnomo, M.Si. Dr. Mitarlis, S.Pd., M.Si. Nur Qomariyah, S.Pd., M.Sc. Dr. Pramita Yakub, S.Pd., M.Pd. Firas Khaleyla, S.Si., 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	Students are able to explain natural resources and the environment (SDAL)	· Explain the meaning of SDA and L · Identify SDAL in the environment · Explain the benefits of SDAL	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Participatory Activities	Reference study, discussion and presentation 2 X 50		<b>Material:</b> 1. Definition of conservation of natural resources and the environment 2. Describe the meaning, objectives and benefits of conservation 3. Describe efforts to conserve natural resources and the environment <b>References:</b> Cluras, DD and Reganold, JP 2010. <i>Natural Resources Conservation Future.</i> Washington: Washington State University.	5%
2	Students are able to explain the various types of biological natural resources	· Identify the various types of biological SDAL. Explain the benefits of each biological SDAL	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Participatory Activities	Reference studies, observations, discussions and presentations 2 X 50		<b>Material:</b> 1. Definition of conservation of natural resources and the environment 2. Describe the meaning, objectives and benefits of conservation 3. Describe efforts to conserve natural resources and the environment <b>References:</b> Rachmadiarti, F., Faizah, U., Kuntjoro, S. 2017. <i>Book Teach Students Conservation of Natural Resources and the Environment.</i> Surabaya: Unesa University Press.	2%
3	Students are able to explain the various types of non-biological natural resources	· Identify the various types of non-biological SDAL (material, energy, space) · Explain the benefits of each non-biological biological SDAL	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Participatory Activities	Reference studies, observations, discussions and presentations 2 X 50		<b>Material:</b> 1. Definition of conservation of natural resources and the environment 2. Describe the meaning, objectives and benefits of conservation 3. Describe efforts to conserve natural resources and the environment <b>References:</b> Rachmadiarti, F., Faizah, U., Kuntjoro, S. 2017. <i>Book Teach Students Conservation of Natural Resources and the Environment.</i> Surabaya: Unesa University Press.	2%

4	Students are able to communicate natural resource and environmental issues at global and national levels	<ul style="list-style-type: none"> <li>· Identify SDAL at the global and national levels</li> <li>· Explain the factors that influence and impact SDAL exploration at the global and national levels.</li> </ul>	<p><b>Criteria:</b> attached</p> <p><b>Form of Assessment :</b> Participatory Activities</p>	Reference studies, observations, discussions and presentations 2 X 50		<p><b>Material:</b> 1. Definition of conservation of natural resources and the environment 2. Describe the meaning, objectives and benefits of conservation 3. Describe efforts to conserve natural resources and the environment</p> <p><b>References:</b> <i>Rachmadiarti, F., Faizah, U., Kuntjoro, S. 2017. Book Teach Students Conservation of Natural Resources and the Environment. Surabaya: Unesa University Press.</i></p>	3%
5	Students are able to communicate natural resource and environmental issues at the local level, on campus and in the surrounding environment.	<ul style="list-style-type: none"> <li>· Identify local level SDAL</li> <li>· Explain the factors that influence and impact SDAL exploration at the local level</li> </ul>	<p><b>Criteria:</b> attached</p> <p><b>Form of Assessment :</b> Portfolio Assessment</p>	Reference studies, observations, discussions and presentations 2 X 50		<p><b>Material:</b> 1. Definition of conservation of natural resources and the environment 2. Describe the meaning, objectives and benefits of conservation 3. Describe efforts to conserve natural resources and the environment</p> <p><b>References:</b> <i>Rachmadiarti, F., Faizah, U., Kuntjoro, S. 2017. Book Teach Students Conservation of Natural Resources and the Environment. Surabaya: Unesa University Press.</i></p>	3%

6	Students are able to explain the what, why and how of conservation of natural resources and the environment	· explain the objectives, benefits and conservation efforts	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Participatory Activities	Reference studies, observations, discussions and presentations 2 X 50		<b>Material:</b> • definition of natural resources • classification of types of natural resources <b>References:</b> <i>Rachmadiarti, F., Faizah, U., Kuntjoro, S. 2017. Student Textbook on Conservation of Natural Resources and the Environment. Surabaya: Unesa University Press.</i>  <b>Material:</b> - Definition, approaches and challenges of local wisdom - Analysis of Indonesian culture and local wisdom that supports conservation <b>References:</b> <i>Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. Textbook of Natural Resources Conservation and Environment based on Problem Based Learning to train Conservation Awareness. Surabaya: Airlangga University Press.</i>	5%
7	Students are able to implement conservation of natural resources and the environment at the local level, on campus and in the surrounding environment.	· Identify SDAL at the local, campus and surrounding environment · Explain the factors that influence and impact SDAL exploration on the local, campus and surrounding environment	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Participatory Activities, Portfolio Assessment	Reference studies, observations, discussions and presentations 2 X 50		<b>Material:</b> - Definition, approaches and challenges of local wisdom - Analysis of Indonesian culture and local wisdom that supports conservation <b>References:</b> <i>Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. Textbook of Natural Resources Conservation and Environment based on Problem Based Learning to train Conservation Awareness. Surabaya: Airlangga University Press.</i>	5%
8	UTS	UTS	<b>Criteria:</b> UTS  <b>Form of Assessment :</b> Test	UTS 2 X 50		<b>Material:</b> Material from meeting 1 to meeting 7 <b>References:</b> <i>Rachmadiarti, F., Faizah, U., Kuntjoro, S. 2017. Student Textbook on Natural Resources and Environmental Conservation. Surabaya: Unesa University Press.</i>	20%

9	Students are able to explain paradigms and apply environmental ethics	· explain the environmental ethics paradigm · apply environmental ethics	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Reference study, practice, discussion and presentation 2 X 50		<b>Material:</b> Local wisdom which includes: Definition, approach, challenges and local wisdom in community life in the future. <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. <i>Textbook of Resource Conservation Nature and the Environment based on Problem Based Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.	5%
10	Students are able to explain paradigms and apply environmental ethics	· explain the environmental ethics paradigm · apply environmental ethics	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Reference studies, practices, discussions and presentations Project-based group assignments with the Project Based Learning (PjBL) model regarding natural resource conservation. 2 X 50		<b>Material:</b> Management and problems of natural resources and the environment which includes: problems and management of natural resources and the environment <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. <i>Conservation Textbook Natural Resources and Environment based on Problem Based Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.	5%
11	Students are able to explain paradigms and apply environmental ethics	· explain the environmental ethics paradigm · apply environmental ethics	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Reference studies, practices, discussions and presentations Project-based group assignments with the Project Based Learning (PjBL) model regarding natural resource conservation. 2 X 50		<b>Material:</b> Management and problems of natural resources and the environment which includes: problems and management of natural resources and the environment <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. <i>Conservation Textbook Natural Resources and Environment based on Problem Based Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.	5%

12	Students are able to explain the management of biological natural resources	· Explain the management of biological SDALS · Propose ideas for managing biological SDALS	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Reference studies, discussions and presentations Project-based group assignments with the Project Based Learning (PjBL) model regarding natural resource conservation. 2 X 50		<b>Material:</b> Principles of local, regional, national and global SDAL conservation <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. <i>Problem Based Textbook of Natural Resources and Environmental Conservation Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.	5%
13	Students are able to explain the management of biological natural resources	· Explain the management of biological SDALS · Propose ideas for managing biological SDALS	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Reference studies, discussions and presentations Project-based group assignments with the Project Based Learning (PjBL) model regarding natural resource conservation. 2 X 50		<b>Material:</b> Principles of local, regional, national and global SDAL conservation <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. <i>Problem Based Textbook of Natural Resources and Environmental Conservation Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.	10%
14	Students are able to design urban natural resource management	1.· Designing urban SDAL management (or campus environment) 2.Analyze the implementation of eco campus and provide input for improving eco campus activities.	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Reference studies, discussions, observations and presentations Conservation project assignments (around campus) with Project Based Learning (PjBL) 2 X 50		<b>Material:</b> Level of biodiversity (community/habitat, species, genetic) and conservation efforts <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. <i>Textbook of Natural Resources and Environmental Conservation based Problem Based Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.  <b>Material:</b> Environmentally friendly campus movement and conservation campus <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiwi, Muji Sri., Kuntjoro, S. 2017. <i>Textbook on Natural Resources and Environmental Conservation based on Problem Based Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.	10%

15	Students are able to design urban natural resource management	<ol style="list-style-type: none"> <li>1. Designing urban SDAL management (or campus environment)</li> <li>2. Analyze the implementation of eco campus and provide input for improving eco campus activities.</li> </ol>	<b>Criteria:</b> attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Reference studies, discussions, observations and presentations Conservation project assignments (around campus) with Project Based Learning (PjBL) 2 X 50	<b>Material:</b> Level of biodiversity (community/habitat, species, genetic) and conservation efforts <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiw, Muji Sri., Kuntjoro, S. 2017. <i>Textbook of Natural Resources and Environmental Conservation based Problem Based Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.  <b>Material:</b> Environmentally friendly campus movement and conservation campus <b>Reference:</b> Faizah, U., Rachmadiarti, F., Prastiw, Muji Sri., Kuntjoro, S. 2017. <i>Textbook on Natural Resources and Environmental Conservation based on Problem Based Learning to train Conservation Awareness.</i> Surabaya: Airlangga University Press.	10%
16			<b>Form of Assessment :</b> Project Results Assessment / Product Assessment, Test			5%

#### Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	19.5%
2.	Project Results Assessment / Product Assessment	52.5%
3.	Portfolio Assessment	5.5%
4.	Test	22.5%
		100%

#### Notes

1. **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.
2. **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.
5. **Indicators for assessing** ability in the process and student learning outcomes are specific and measurable statements that identify the ability 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.

