



**Universitas Negeri Surabaya**  
**Faculty of Mathematics and Natural Sciences**  
**Science Education Doctoral Study Program**

Document  
Code

**SEMESTER LEARNING PLAN**

<b>Courses</b>	<b>CODE</b>	<b>Course Family</b>	<b>Credit Weight</b>			<b>SEMESTER</b>	<b>Compilation Date</b>																																																																																																														
Science Learning Based on Local Wisdom	8400102044	Study Program Elective Courses	T=2	P=0	ECTS=5.04	2	January 10, 2023																																																																																																														
<b>AUTHORIZATION</b>		<b>SP Developer</b>	<b>Course Cluster Coordinator</b>			<b>Study Program Coordinator</b>																																																																																																															
		Prof. Dr. Erman, M.Pd.	Prof. Dr. Erman, M.Pd.			Prof. Dr. Suyatno, M.Si.																																																																																																															
<b>Learning model</b>	Case Studies																																																																																																																				
<b>Program Learning Outcomes (PLO)</b>	<b>PLO study program which is charged to the course</b>																																																																																																																				
	<b>PLO-12</b>	2. Master the latest theories related to scientific knowledge and science education																																																																																																																			
	<b>Program Objectives (PO)</b>																																																																																																																				
	<b>PO - 1</b>	Analyzing the results of science learning research based on local wisdom																																																																																																																			
	<b>PO - 2</b>	Designing science learning strategies/methods based on local wisdom																																																																																																																			
	<b>PO - 3</b>	Determining the suitability of local wisdom as a science learning context																																																																																																																			
	<b>PO - 4</b>	Designing a science learning strategy based on local wisdom as a dissertation research idea																																																																																																																			
	<b>PLO-PO Matrix</b>																																																																																																																				
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>P.O</td> <td colspan="6">PLO-12</td> </tr> <tr> <td>PO-1</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> </tr> <tr> <td>PO-3</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> </tr> </table>						P.O	PLO-12						PO-1							PO-2							PO-3							PO-4																																																																																	
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<b>PO Matrix at the end of each learning stage (Sub-PO)</b>																																																																																																																					
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="2">P.O</td> <td colspan="16">Week</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td> </tr> <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> </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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<b>Short Course Description</b>	Facilitate students to study research results on science learning based on local wisdom (indigenous science), explore local wisdom for science learning, and design science learning strategies based on local wisdom. Lectures are carried out through seminar, workshop and project methods. The assessment includes study results and design products.																																																																																																																				
<b>References</b>	<b>Main :</b>																																																																																																																				
	<ol style="list-style-type: none"> <li>1. Albuquerque, U.P., et al., 2017. Ethnobotany for Beginners. Springer International Publisher AG.</li> <li>2. Slikkerveer, L.J., Baourakis, G., &amp; Saefullh, K., 2019. Integrated Community-Managed Development: Strategizing Indigenous Knowledge and Institution for Poverty Reduction and Sustainability Community Development in Indonesia. Springer International Publisher AG</li> <li>3. Semali, L.M. &amp; Kinchoeloe, J.L. 1999. What is indigenous knowledge. New York: Falmer Press.</li> <li>4. Commettee on How People Learn II &amp; Board on Science Education, 2018. How People Learn II: Learners, Contexts, and Cultures, Washington: The National Academic Press</li> </ol>																																																																																																																				
<b>Supporters:</b>																																																																																																																					

<ol style="list-style-type: none"> <li>1. Jockens, W.M.G, &amp; Van Driel, J.H. 2012. Science Teachers Designing context-based curriculum materials: Developing context-based teacher competence. Uitgeverij Boxpress</li> <li>2. Branch, J. &amp; Oberg, D. 2004. Focus on inquiry. Canada: Alberta</li> <li>3. Nuangchalerm, P. 2007. Development of indigenous science instruction model. Paper presented at International Conference on educational reform (ICER). (1st Khonkaen Thailand, Nov, 1-11, 2007).</li> <li>4. Sudarmin. 2014. Konten dan konteks pendekatan ilmiah pada pembelajaran sains berbasis etnosience Indigenous science dan kearifan local). Semarang: Unnes.</li> <li>5. Referensi lain dari berbagai sumber atau internet</li> </ol>							
<b>Supporting lecturer</b>		Dr. Elok Sudibyo, S.Pd.,M.Pd. Prof. Dr. Erman, M.Pd.					
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	Explain the historical, cultural and scientific aspects of local wisdom in published research articles	<ol style="list-style-type: none"> <li>1.Explain the characteristics of local wisdom</li> <li>2.Describe the historical aspects of local wisdom</li> <li>3.Describe the cultural aspects of local wisdom</li> <li>4.Describe the scientific aspects of local wisdom</li> </ol>	<p><b>Criteria:</b> Points are awarded according to the questions and ideas submitted</p> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Presentation, question and answer, discussion, case study 2 X 50 minutes	Assignment: <ol style="list-style-type: none"> <li>1. Exploration and analysis of research articles on science learning based on local wisdom</li> <li>2. Analysis of local wisdom according to research ideas</li> </ol> 2 x 50 minutes	<p><b>Material:</b> Main library no. 1-3 &amp; supporting library no. 3-5</p> <p><b>Bibliography:</b></p>	5%
2	Students are able to analyze the results of science learning research based on local wisdom	Identifying scientific, historical and cultural aspects in community science in the results of research on local wisdom-based science learning	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.Assessment of study assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Assignments, presentations and discussions 2 X 50		<p><b>Material:</b> Main library no. 1-3 &amp; supporting library no. 3-5</p> <p><b>Bibliography:</b></p>	5%

3	Students are able to analyze the results of science learning research based on local wisdom	Explain the relationship between science, history and culture in local community science	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of study assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Assignments, presentations and discussions 2 X 50		<p><b>Material:</b> Main library no. 1-3 &amp; supporting library no. 3-5</p> <p><b>Bibliography:</b></p>	5%
4	Students are able to analyze the results of science learning research based on local wisdom	Explains learning theories that support science learning based on local wisdom	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of study assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Assignments, presentations and discussions 2 X 50		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	5%
5	Students are able to analyze the results of science learning research based on local wisdom	Principles of science learning based on local wisdom	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of study assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Assignments, presentations and discussions 2 X 50		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	7%

6	Students are able to analyze the results of science learning research based on local wisdom	Identify models, approaches and methods used in local wisdom-based science learning research	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of study assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Assignments, presentations and discussions 2 X 50		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	7%
7	Students are able to analyze the results of science learning research based on local wisdom	Explain the factors that influence science learning based on local wisdom	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of study assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Presentation and discussion 2 X 50		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	7%
8	Final capabilities from TM-1 to TM-7	Indicators from TM-1 to TM-7	<p><b>Criteria:</b> Attached</p> <p><b>Form of Assessment :</b> Project Results Assessment / Product Assessment</p>	Written test or assignment as a substitute for UTS 2 X 50		<p><b>Material:</b> Learning topics from TM-1 to TM-7</p> <p><b>Library:</b></p>	5%

9	Students are able to design science learning strategies/methods based on local wisdom	Determining models, approaches and methods for learning science based on local wisdom	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of draft assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities</p>	Workshops and Presentations and discussions, 2 X 50		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	7%
10	Students are able to design science learning strategies/methods based on local wisdom	Designing science learning strategies based on local wisdom	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of draft assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Workshop and discussion, 2 X 50		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	7%
11	Students are able to design science learning strategies/methods based on local wisdom	Designing science learning strategies based on local wisdom	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of draft assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	2 X 50 Workshops and Seminars		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	7%

12	Students are able to design science learning strategies/methods based on local wisdom	Designing teaching materials (PCK) for science learning based on local wisdom	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of draft assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Workshop and seminar on designing 2 X 50 teaching materials		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	7%
13	Students are able to design science learning strategies/methods based on local wisdom	Designing teaching materials (PCK) for science learning based on local wisdom	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1. Assessment of draft assignments according to the rubric:</li> <li>2.4: correct study</li> <li>3.3: the study is generally correct, there is one aspect where the explanation is incorrect</li> <li>4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect</li> <li>5.1: the study is wrong</li> </ol> <p><b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment</p>	Workshop and seminar on designing 2 X 50 teaching materials		<p><b>Material:</b> Main library no. 1-4 &amp; supporting library no. 1-5</p> <p><b>Library:</b></p>	7%

14	Students are able to design science learning strategies/methods based on local wisdom	Designing teaching materials (PCK) for science learning based on local wisdom	<b>Criteria:</b> 1. Assessment of draft assignments according to the rubric: 2.4: correct study 3.3: the study is generally correct, there is one aspect where the explanation is incorrect 4.2: the study is generally correct, there is more than one aspect where the explanation is incorrect 5.1: the study is wrong  <b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment	Workshop and seminar on designing 2 X 50 teaching materials		<b>Material:</b> Main library no. 1-4 & supporting library no. 1-5 <b>Library:</b>	7%
15	Students are able to design science learning strategies/methods based on local wisdom	Reflection, reinforcement, and follow-up	<b>Criteria:</b> Identify what has and has not been mastered, as well as follow-up actions  <b>Form of Assessment :</b> Participatory Activities, Project Results Assessment / Product Assessment	Reflection 2 X 50		<b>Material:</b> Main library no. 1-4 & supporting library no. 1-5 <b>Library:</b>	7%
16	Final capabilities from TM-9 to TM-15	Indicators from TM-9 to TM-15	<b>Criteria:</b> Attached  <b>Form of Assessment :</b> Project Results Assessment / Product Assessment	Written test or assignment as a substitute for UAS 2 X 50		<b>Material:</b> Learning topics from TM-9 to TM-15 <b>Library:</b>	5%

#### Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	54.5%
2.	Project Results Assessment / Product Assessment	45.5%
		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.
- 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.
- 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.
- 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.
- Forms of assessment:** test and non-test.
- 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.
- 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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.