



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

Document Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight	SEMESTER	Compilation Date
Developments in Biology Education Research	8420502195		T=2 P=0 ECTS=3.18	6	July 18, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Dr. Rinie Pratiwi Puspitawati, M.Si.

Learning model	Project Based Learning
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Program Learning Outcomes (PLO)	PLO study program that is charged to the course																																	
	Program Objectives (PO)																																	
	PLO-PO Matrix																																	
	<table border="1" style="margin: auto;"> <tr> <td style="width: 50px; height: 30px;">P.O</td> </tr> </table>	P.O																																
P.O																																		
	PO Matrix at the end of each learning stage (Sub-PO)																																	
	<table border="1" style="margin: auto;"> <tr> <td rowspan="2" style="width: 30px; height: 30px;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> <td style="width: 20px;">5</td> <td style="width: 20px;">6</td> <td style="width: 20px;">7</td> <td style="width: 20px;">8</td> <td style="width: 20px;">9</td> <td style="width: 20px;">10</td> <td style="width: 20px;">11</td> <td style="width: 20px;">12</td> <td style="width: 20px;">13</td> <td style="width: 20px;">14</td> <td style="width: 20px;">15</td> <td style="width: 20px;">16</td> </tr> </table>	P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																		

Short Course Description This course examines issues and trends in the development of educational research in general and biology education research in particular, including development directions, innovative products, the impact of biology education research results on the development of biology education through a review of the latest research results contained in various well-cited sources. national and international. Learning is presented through discussion forums, assignments and colloquiums

References	<p>Main :</p> <ol style="list-style-type: none"> 1. <ol style="list-style-type: none"> 1. Journal of Biological Education (JBE) Charles Darwin House, 12 Roger Street, London WC1N 2JU Registered Charity No. 277981, Incorporated by Royal CharterCano, R.J. and Colome, 2. International Journal of Biology Education (IJOBED) ISSN: 2147-4990 © International Journal of Biology Education Biology Education Journals and Education Research Journals 3. <i>Advances in Physiology Education</i> http://advan.physiology.org/ Published by the American Physiological Society 4. <i>American Biology Teacher</i> http://www.nabt.org/websites/institution/index.php?p=26 Published by the National Association of Science Teachers (NABT) 5. <i>Bioscene: Journal of College Biology Teaching</i> http://acube.org/?page_id=17 "The refereed, quarterly publication of the Association of College and University Biology Educators (ACUBE). 6. <i>Journal of Microbiology & Biology Education</i> http://jmbe.asm.org/ Published by the American Society for Microbiology 7. <i>Journal of Research in Science Teaching</i> http://www.narst.org/publications/jrst.cfm JRST, the official journal of the National Association for Research in Science Teaching <p>Supporters:</p>
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Supporting lecturer	MUSLIMIN IBRAHIM Dr. Muji Sri Prastiwi, S.Pd., M.Pd. Ahmad Bashri, S.Pd., M.Si.
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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 issues and trends in the development of biology education research independently and honestly	<p>1. Describe issues in the development of biology education research.</p> <p>2. Describe the development trend of biology education research.</p> <p>3. Demonstrate an independent and honest attitude in reviewing the results of the latest biology education research</p>	<p>Criteria:</p> <p>1. The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6. The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 grades together on USS and US</p>	Discussion, Presentation, Question and Answer 2 X 50			0%
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2	Understand issues and research trends in the development of biology teaching materials	<p>1. Give an example of research into the development of biology teaching materials.</p> <p>2. Describe research products for the development of biology teaching materials</p> <p>3. Analyzing the impact of research results on the development of biology teaching materials.</p>	<p>Criteria:</p> <p>1. The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6. The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 grades together on USS and US</p>	Discussion, Presentation, Question and answer, assignment 2 X 50			0%
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3	Understand issues and research trends in the development of biology teaching materials	<p>1. Give an example of research into the development of biology teaching materials.</p> <p>2. Describe research products for the development of biology teaching materials</p> <p>3. Analyzing the impact of research results on the development of biology teaching materials</p>	<p>Criteria:</p> <p>1. The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6. The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 grades together on USS and US</p>	Discussion, Presentation, Question and answer, assignment 2 X 50			0%
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4	Understand biology education research issues related to learning strategies	<p>1. Communicate biology education research issues related to learning strategies.</p> <p>2. Describe biology education research products related to learning strategies.</p> <p>3. Analyzing the impact of biology education research in relation to learning strategies</p>	<p>Criteria:</p> <p>1. Assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6. The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 grades together on USS and US</p>	Discussion, Presentation, Question and answer, assignment 2 X 50		0%
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5	Understand biology education research issues related to learning strategies	<p>1.Communicate biology education research issues related to learning strategies.</p> <p>2.Describe biology education research products related to learning strategies.</p> <p>3.Analyzing the impact of biology education research in relation to learning strategies.</p>	<p>Criteria:</p> <p>1.The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 grades together on USS and US</p>	Discussion, Presentation, Question and answer, assignment 2 X 50			0%
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6	Understand biology education research issues related to learning media and technology	<p>1.Communicate biology education research issues related to learning media and technology</p> <p>2.Describe biology education research products related to learning media and technology.</p> <p>3.Analyzing the impact of biology education research related to learning media and technology.</p>	<p>Criteria:</p> <p>1.The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 grades together on USS and US</p>	Discussion, Presentation, Question and answer, assignment 2 X 50			0%
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7	Understand biology education research issues related to learning media and technology	<p>1.Communicate biology education research issues related to learning media and technology</p> <p>2.Describe biology education research products related to learning media and technology.</p> <p>3.Analyzing the impact of biology education research related to learning media and technology.</p>	<p>Criteria:</p> <p>1.The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2</p>	Discussion, Presentation, Question and answer, assignment 2 X 50			0%
8	UTS	uts	<p>Criteria:</p> <p>uts</p>	uts 2 X 50			0%

9	Understand biology education research issues related to misconceptions	<p>1.Communicate biology education research issues related to misconceptions.</p> <p>2.Analyzing the impact of biology education research results related to misconceptions.</p>	<p>Criteria:</p> <p>1.The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 assessed jointly on USS and US</p>	Discussion, Presentation, Question and Answer 2 X 50			0%
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10	Understand biology education research issues related to misconceptions.	1. Communicate biology education research issues related to misconceptions. 2. Analyze the impact of biology education research results related to misconceptions.	Criteria: 1.The assessment is carried out on the following aspects: 2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2) 3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2) 4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3) 5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3) 6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 assessed jointly on USS and US	Discussion, Presentation, Question and Answer 2 X 50			0%
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11	Understand biology education research issues related to HOTS assessment	<p>1.Communicate biology education research issues related to HOTS assessment</p> <p>2.Describe biology education research products related to HOTS assessment</p> <p>3.Analyzing the impact of biology education research related to HOTS assessment</p>	<p>Criteria:</p> <p>1.The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 assessed jointly on USS and US</p>	Discussion, Presentation, Question and answer, assignment 2 X 50			0%
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12	Understand biology education research issues related to HOTS assessment	<p>1.Communicate biology education research issues related to HOTS assessment</p> <p>2.Describe biology education research products related to HOTS assessment</p> <p>3.Analyzing the impact of biology education research related to HOTS assessment</p>	<p>Criteria:</p> <p>1.The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 assessed jointly on USS and US</p>	Discussion, Presentation, Question and answer, assignment 2 X 50			0%
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13	<p>Present the results of article analysis according to the thesis topic honestly and independently</p> <p>Present the results of article analysis according to the thesis topic honestly and independently</p>	<p>1.Prepare article analysis papers according to the thesis topic</p> <p>2.Present the results of article analysis according to the thesis topic honestly and independently</p>	<p>Criteria:</p> <p>1.The assessment is carried out on the following aspects:</p> <p>2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2)</p> <p>3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2)</p> <p>4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3)</p> <p>5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3)</p> <p>6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 assessed jointly on USS and US</p>	<p>Presentations, questions and answers, assignments 2 X 50</p>			0%
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14	Present the results of article analysis according to the thesis topic honestly and independently.	1. Prepare an article analysis paper according to the thesis topic. 2. Present the results of the article analysis according to the thesis topic honestly and independently.	Criteria: 1.The assessment is carried out on the following aspects: 2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2) 3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2) 4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3) 5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3) 6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 assessed jointly on USS and US	Presentations, questions and answers, assignments 2 X 50			0%
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15	Present the results of article analysis according to the thesis topic honestly and independently	1.Prepare article analysis papers according to the thesis topic 2.Present the results of article analysis according to the thesis topic honestly and independently	Criteria: 1.The assessment is carried out on the following aspects: 2.1. Participation during lectures and practicums is carried out through observing honest and independent attitudes (weight 2) 3.2. The UTS test as a UTS score, is carried out to assess all relevant indicators through a written test for meeting activities 1-7, (weight 2) 4.3. Assessment of project assignment reports and presentations is considered an assignment (weight 3) 5.4. The UAS test as a UAS score is carried out to assess all relevant indicators through a written test for meeting activities 9-15, (weight 3) 6.The final NA is (participation grade%2 2) (assignment grade%2 3) (UTS grade%2 2) UAS grade (3) divided by 10 assessed jointly on USS and US	Presentations, questions and answers, assignments 2 X 50			0%
16							0%

Evaluation Percentage Recap: Project Based Learning

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.
- 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.

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.