



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

Document
Code

SEMESTER LEARNING PLAN

Courses	CODE	Course Family	Credit Weight			SEMESTER	Compilation Date										
Malacology*	4620102114	Study Program Elective Courses	T=2	P=0	ECTS=3.18	6	October 23, 2022										
AUTHORIZATION	SP Developer		Course Cluster Coordinator			Study Program Coordinator											
	Reni Ambarwati, S.Si., M.Sc.		Reni Ambarwati, S.Si., M.Sc.			Dr. H. Sunu Kuntjoro, S.Si., M.Si.											
Learning model	Project Based Learning																
Program Learning Outcomes (PLO)	PLO study program which is charged to the course																
	PLO-5	Able to communicate scientific ideas, both orally and in writing using appropriate communication media according to the target, as a means of lifelong learning for academic self-development.															
	PLO-7	Able to work independently and collaboratively, as well as responsibly, in completing various tasks in class, in the laboratory and in the field.															
	Program Objectives (PO)																
	PO - 1	Mastering the concept of Malacology															
	PO - 2	Able to analyze numerical taxonomy and phylogenetics of mollusks using computer software.															
	PO - 3	Able to design and carry out research in the field of Malacology and able to process, analyze, interpret and document research data.															
	PO - 4	Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Resilient (Jelita's Dream)"															
	PO - 5	Able to communicate Malacology research results in the form of scientific articles.															
	PO - 6	Able to work independently, responsibly, both individually and in groups, and able to work cooperatively.															
	PLO-PO Matrix																
		P.O	PLO-5	PLO-7													
		PO-1															
		PO-2															
	PO-3																
	PO-4																
	PO-5																
	PO-6																
PO Matrix at the end of each learning stage (Sub-PO)																	
	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																
	PO-5																
	PO-6																
Short Course Description	This course discusses the concept of diversity, morphological characteristics, classification and ecology of molluscs, which include the Aplacophora, Monoplacophora, Polyplacophora, Scapopoda, Gastropod, Bivalvia and Cephalopoda classes. Apart from that, this course also reviews the benefits of molluscs for life and research methods on molluscs. The material is delivered using a student-centered approach in practical activities and assignments given in the form of project based learning which students carry out honestly and independently.																
References	Main :																

- Ambarwati R & Trijoko, 2010. Morfologi Fungsional Kerang Batik Paphia undulata (Bivalvia: Veneridae). Berk. Penel. Hayati 16(1): 83–86
- Ambarwati R & Trijoko, 2011. New Record of Two Mactrid Bivalves (Bivalvia: Mactridae) from Indonesia Indonesia. Treubia ; 42: 1-8.
- Ambarwati R & Trijoko, 2015. Morfologi Fungsional Kerang Batik Paphia undulata (Bivalvia: Veneridae). Berk. Penel. Hayati 16(1): 83–86
- Ambarwati, R., & Faizah, U. 2017. Colour and Morphometric Variation of Donacid Bivalves from Nepa Beach, Madura Island, Indonesia. Biosaintifika: Journal of Biology & Biology Education , 9(3), 466-473.
- Beesley P.L., Ross G.J.B & Wells A. (eds), 1998. Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part A . CSIRO Publishing, Melbourne
- Beesley P.L., Ross G.J.B & Wells A. (eds), 1998. Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part B. CSIRO Publishing, Melbourne
- Heryanto, Marsetiowati R., Yulianda F., 2006. Metode Survei dan Pemantauan Populasi Satwa, Seri Siput dan Kerang . Cibinong: Bidang Zoologi, Pusat Penelitian Biologi-LIPI.
- Marwoto, R.M., dan Shintosari A.M., 1999. Pengelolaan Koleksi Moluska Dalam: Suhardjono YR (Ed). Buku Pegangan Penanganan Koleksi Spesimen Zoologi. Puslitbang Biologi – LIPI
- Laily, N., Ambarwati, R., Rahayu, D.A., Isnainingsih, N.R., 2022. Structure of gastropod communities in the mangrove area of Kutang Beach, Lamongan, Indonesia. AACL Bioflux 15(3): 1507-1519
- Juniar, A.E., Ambarwati, R., Rahayu, D.A., 2021. Genetic identification of Clithon oualaniense (Gastropoda: Neritidae) from Madura, Indonesia. AACL Bioflux 14(2): 1046-1056.

Supporters:

- Pechenik, J.A., 2005. Biology of the Invertebrates , 5th edition. New York: McGraw-Hill International.
- Rahmasari, T., Purnomo, T., & Ambarwati, R. 2015. Diversity and abundance of gastropods in Southern Shores of Pamekasan Regency, Madura. Biosaintifika: Journal of Biology & Biology Education , 7 (1), 48–54.
- Rochmawati, I., Ibrahim, M., & Ambarwati, R. 2015. Antibacterial activities of extracts of razor clams (Solen sp.) and windowpane oyster (Placuna placenta). Biosaintifika: Journal of Biology & Biology Education , 7 (2), 128–135.

Supporting lecturer Reni Ambarwati, S.Si., M.Sc.
Dwi Anggorowati Rahayu, 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	<ol style="list-style-type: none"> Understand the scope of malacology Understand research in the field of malacology Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough" Able to be responsible both as an individual and as a group in carrying out tasks. 	<ol style="list-style-type: none"> Explaining RPS from MK Malacology Explain the scope of malacology Explains research in the field of malacology Shows independent and honest character Demonstrate responsible character 	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Participatory Activities, Tests</p>	Presentation and discussion, review of 2x50 articles	asynchronous learning at SiDia: <ul style="list-style-type: none"> Study teaching materials Actively discuss in forums 	<p>Material: Introduction to Malacology Bibliography: Beesley PL, Ross GJB & Wells A. (eds), 1998. Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part A . CSIRO Publishing, Melbourne</p>	3%

2	<p>1.Understand the ecology of land and freshwater molluscs</p> <p>2.Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>3.Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1.Analyze the ecology of land mollusks</p> <p>2.Analyzing freshwater molluscs</p> <p>3.Shows independent and honest character</p> <p>4.Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Participatory Activities, Tests</p>	<p>Presentation and discussion, review of 4 X 50 articles</p>	<p>asynchronous learning at SiDia: <ul style="list-style-type: none"> • Study teaching materials • Actively discuss in forums </p>	<p>Material: Ecology of Molluscs Bibliography: <i>Beesley PL, Ross GJB & Wells A. (eds), 1998. Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part A . CSIRO Publishing, Melbourne</i></p>	6%
3	<p>1.Understanding the ecology of marine and estuarine molluscs</p> <p>2.Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>3.Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1.Analyzing the ecology of seawater molluscs</p> <p>2.Analyzing the ecology of estuarine mollusks</p> <p>3.Shows independent and honest character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Participatory Activities, Tests</p>	<p>Presentation and discussion, review of 4 X 50 articles</p>	<p>Asynchronous learning at SiDia: <ul style="list-style-type: none"> • Study teaching materials • Actively discuss in forums </p>	<p>Material: Ecology of molluscs References: <i>Beesley PL, Ross GJB & Wells A. (eds), 1998. Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part A . CSIRO Publishing, Melbourne</i></p> <hr/> <p>Material: Ecology of seawater mollusks References: <i>Laily, N., Ambarwati, R., Rahayu, DA, Isnainingsih, NR, 2022. Structure of gastropod communities in the mangrove area of Kutang Beach, Lamongan, Indonesia. AACL Bioflux 15(3): 1507-1519</i></p> <hr/> <p>Material: Ecology of estuarine mollusks Reference: <i>Ambarwati R & Trijoko, 2011. New Record of Two Mactrid Bivalves (Bivalvia: Mactridae) from Indonesia Indonesia. Treubia ; 42: 1-8.</i></p>	6%

4	<ol style="list-style-type: none"> Analyzing molecular studies in malacology Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough" Able to be responsible both as an individual and as a group in carrying out tasks. Able to create cladograms using several bioinformatics software (bioedit, clustal x and mega 5) Able to analyze phylogenetic topology using the Neighbor Joining and Maximum Parsimony methods Able to analyze genetic distances using Mega 5 software with the Kimura 2 Parameter Model calculation model. Analyzing mollusk DNA Barcoding 	<ol style="list-style-type: none"> Analyzing molecular studies in malacology Show honest and independent character Demonstrate responsible character Collect data on at least 10 mollusc taxa from Genbank. Create an appropriate cladogram from the data obtained using several bioedit software, clustal x and mega 5 Accurately analyzing phylogenetic topology using the Neighbor Joining method. Accurately analyzing phylogenetic topology using the Maximum Parsimony method. Analyzing genetic distances using Mega 5 software with the Kimura 2 Parameter Model calculation model. Concluding the results of the data analysis carried out. Analyzing mollusk DNA Barcoding 	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Participatory Activities, Tests</p>	Presentation and discussion, review of 4 X 50 articles	Asynchronous learning at SiDia: <ul style="list-style-type: none"> Study teaching materials Actively discuss in forums 	<p>Material: Molecular Studies of Molluscs Bibliography: <i>Beesley PL, Ross GJB & Wells A. (eds), 1998. Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part A . CSIRO Publishing, Melbourne</i></p> <hr/> <p>Material: DNA Barcoding of molluscs References: <i>Juniar, AE, Ambarwati, R., Rahayu, DA, 2021. Genetic identification of Clithon oualaniense (Gastropoda: Neritidae) from Madura, Indonesia. AACL Bioflux 14(2): 1046-1056.</i></p>	7%
5	<ol style="list-style-type: none"> Understand the special characteristics, general characteristics and role of Aplacophora Understand the special characteristics, general characteristics and role of Monoplacophora Understand the special characteristics, general characteristics and role of Polyplacophora Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough" Able to be responsible both as an individual and as a group in carrying out tasks. 	<ol style="list-style-type: none"> Explain the special characteristics of Aplacophora Explain the general characteristics of Aplacophora Explain the role of Aplacophora Explain the special characteristics of Monoplacophora Explain the general characteristics of Monoplacophora Explain the role of Monoplacophora Explain the special characteristics of Polyplacophora Explain the general characteristics of Polyplacophora Explain the role of Polyplacophora Show honest and independent character Demonstrate responsible character 	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Participatory Activities, Tests</p>	Presentation, discussion and review of 4 X 50 articles	Asynchronous learning at SiDia: <ul style="list-style-type: none"> Study teaching materials Actively discuss in forums 	<p>Material: Aplacophora, Monoplacophora, Polyplacophora Reference: <i>Pechevnik, JA, 2005. Biology of the Invertebrates, 5th edition. New York: McGraw-Hill International.</i></p>	7%

6	<p>1.Understand the special characteristics, general characteristics, and roles of Cephalopods and Scapopoda</p> <p>2.Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>3.Able to be responsible both as an individual and as a group in carrying out tasks</p>	<p>1.Explain the special characteristics of Cephalopods</p> <p>2.Explain the general characteristics of Cephalopods</p> <p>3.Explain the role of Cephalopods</p> <p>4.Explain the special characteristics of Scapopoda</p> <p>5.Explain the general characteristics of Scapopoda</p> <p>6.Explain the role of Scapopoda</p> <p>7.Show honest and independent character</p> <p>8.Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2)</p> <p>Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Participatory Activities, Tests</p>	Presentation and discussion, review of 2x50 articles	Asynchronous learning at SiDia: <ul style="list-style-type: none"> • Study teaching materials • Actively discuss in forums 	<p>Material: Cephalopods and Scapopods</p> <p>Bibliography: Beesley PL, Ross GJB & Wells A. (eds), 1998. <i>Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part B</i>. CSIRO Publishing, Melbourne</p>	7%
7	<p>1.Understand the special characteristics, general characteristics, and roles of Gastropods and Bivalves</p> <p>2.2. Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p>	<p>1.Explain the special characteristics of Gastropods</p> <p>2.Explain the general characteristics of Gastropods</p> <p>3.Explain the role of Gastropods</p> <p>4.Explain the special characteristics of Bivalves</p> <p>5.Explain the general characteristics of Bivalves</p> <p>6.Explain the role of Bivalves</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2)</p> <p>Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Participatory Activities, Tests</p>	Presentation and discussion, review of 4 X 50 articles	Asynchronous learning at SiDia: <ul style="list-style-type: none"> • Study teaching materials • Actively discuss in forums 	<p>Material: Bivalves</p> <p>References: Beesley PL, Ross GJB & Wells A. (eds), 1998. <i>Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part A</i>. CSIRO Publishing, Melbourne</p> <hr/> <p>Material: Gastropods</p> <p>Bibliography: Beesley PL, Ross GJB & Wells A. (eds), 1998. <i>Mollusca: The Southern Synthesis Fauna of Australia Vol 5 Part B</i>. CSIRO Publishing, Melbourne</p> <hr/> <p>Material: Gastropods</p> <p>References: Laily, N., Ambarwati, R., Rahayu, DA, Isnainingsih, NR, 2022. <i>Structure of gastropod communities in the mangrove area of Kutang Beach, Lamongan, Indonesia</i>. <i>AACL Bioflux</i> 15(3): 1507-1519</p> <hr/> <p>Material: Bivalves</p> <p>References: Ambarwati R & Trijoko, 2010. <i>Functional morphology of the Batik Mussel Paphia undulata (Bivalvia: Veneridae)</i>. <i>Berk. Penel. Life</i> 16(1): 83–86</p>	7%
8	UTS	UTS	<p>Criteria: UTS</p> <p>Form of Assessment : Test</p>	UTS 2 X 50	UTS	<p>Material: - Library:</p>	0%

9	<p>1. Able to design research in the field of malacology that is relevant to the realities of life in the management of biological resources.</p> <p>2. Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>3. Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1. Formulate a preliminary malacology research plan</p> <p>2. Show honest and independent character</p> <p>3. Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Project Assignments (project based learning) 4 X 50	Project Assignments (project based learning)	<p>Material: Introduction to research plan</p> <p>References: Laily, N., Ambarwati, R., Rahayu, DA, Isnainingsih, NR, 2022. Structure of gastropod communities in the mangrove area of Kutang Beach, Lamongan, Indonesia. AACL Bioflux 15(3): 1507-1519</p>	10%
10	<p>1. Able to design research in the field of malacology that is relevant to the realities of life in the management of biological resources.</p> <p>2. Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>3. Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1. Designing a malacology research plan method</p> <p>2. Shows independent and honest character</p> <p>3. Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Presentation, discussion, article review 2x50	Asynchronous learning at Vinesa: • Study teaching materials • Actively discuss in forums	<p>Material: Malacological methods</p> <p>References: Heryanto, Marsetiowati R., Yulianda F., 2006. Survey and Monitoring Methods for Animal Populations, Snail and Shellfish Series. Cibinong: Zoology Sector, Biology Research Center-LIPI.</p>	7%
11	<p>1. Able to carry out research in the field of malacology, both field and non-field research/morphology and DNA research in accordance with procedures.</p> <p>2. Able to document research data well</p> <p>3. Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>4. Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1. Carrying out research</p> <p>2. Document research data well</p> <p>3. Show honest and independent character</p> <p>4. Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Project assignments (project based learning) 2x50	Project assignments (project based learning)	<p>Material: Example of an article</p> <p>References: Laily, N., Ambarwati, R., Rahayu, DA, Isnainingsih, NR, 2022. Structure of gastropod communities in the mangrove area of Kutang Beach, Lamongan, Indonesia. AACL Bioflux 15(3): 1507-1519</p>	8%

12	<p>1. Able to carry out research in the field of ornithology, both field and non-field research/morphology and DNA research in accordance with procedures.</p> <p>2. Able to carry out research in the field of ornithology, both field and non-field research/morphology and DNA research in accordance with procedures.</p> <p>3. Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>4. Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1. Carrying out research</p> <p>2. Document research data well</p> <p>3. Show honest and independent character</p> <p>4. Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Project Assignments (project based learning) 4 X 50	Project Assignments (project based learning)	<p>Material: Example of an article</p> <p>References: <i>Juniar, AE, Ambarwati, R., Rahayu, DA, 2021. Genetic identification of Clithon oualaniense (Gastropoda: Neritidae) from Madura, Indonesia. AACL Bioflux 14(2): 1046-1056.</i></p>	8%
13	<p>1. Able to process, analyze and interpret/synthesize so as to produce new knowledge/information/solutions.</p> <p>2. Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>3. Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1. Process, analyze and interpret research data</p> <p>2. Show honest and independent character</p> <p>3. Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Project assignments (project based learning) 2x50	Project assignments (project based learning)	<p>Material: article examples</p> <p>References: <i>Laily, N., Ambarwati, R., Rahayu, DA, Isnainingsih, NR, 2022. Structure of gastropod communities in the mangrove area of Kutang Beach, Lamongan, Indonesia. AACL Bioflux 15(3): 1507-1519</i></p>	8%
14	<p>1. Able to process, analyze and interpret/synthesize so as to produce new knowledge/information/solutions.</p> <p>2. Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>3. Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1. Process, analyze and interpret research data</p> <p>2. Shows independent and honest character</p> <p>3. Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Project assignments (project based learning) 2x20		<p>Material: article example</p> <p>References: <i>Rahmasari, T., Purnomo, T., & Ambarwati, R. 2015. Diversity and abundance of gastropods in Southern Shores of Pamekasan Regency, Madura. Biosciences: Journal of Biology & Biology Education, 7(1), 48-54.</i></p>	8%

15	<p>1. Able to present research results in the form of writing scientific articles.</p> <p>2. Able to apply transferable skills to develop eco-commitment in an effort to realize the character of "Faith, Smart, Independent, Honest, Caring and Tough"</p> <p>3. Able to be responsible both as an individual and as a group in carrying out tasks.</p>	<p>1. Write scientific articles based on research results</p> <p>2. Show honest and independent character</p> <p>3. Demonstrate responsible character</p>	<p>Criteria: Participation is an assessment of students' positive activities as well as their honest, independent, responsible character (weight 2) UTS test as UTS score, carried out to assess all relevant indicators through written tests for meeting activities 1-7, (weight 2) Assignments per topic as assignments (weight 3) Project assignments are equivalent to UAS (weight 3) The final NA is (participation value x 2) (Assignment value x 3) (UTS x 2 value) (UAS x 3 value) divided by 10</p> <p>Form of Assessment : Project Results Assessment / Product Assessment</p>	Project assignments (project based learning) 2x50	Project assignments (project based learning) 2x50	<p>Material: article example</p> <p>References: <i>Rahmasari, T., Purnomo, T., & Ambarwati, R. 2015. Diversity and abundance of gastropods in Southern Shores of Pamekasan Regency, Madura. Biosciences: Journal of Biology & Biology Education, 7(1), 48-54.</i></p>	8%
16	UAS	UAS	<p>Criteria: UAS</p> <p>Form of Assessment : Test</p>	UAS	UAS	<p>Material: -</p> <p>Library:</p>	0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	21.5%
2.	Project Results Assessment / Product Assessment	57%
3.	Test	21.5%
		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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.