	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
Biodiversity	8420502316	Biosystematics and Evolution	T=2	P=0	ECTS=3.18	6	April 28, 2023

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
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Learning model	**Project Based Learning**

Program Learning Outcomes (PLO)

PLO study program that is charged to the course

PLO-8	Able to make decisions based on data/information in order to complete tasks as part of his responsibilities in the work he has done

Program Objectives (PO)

PO - 1	Trained to be scientific about biodiversity problems in Indonesia
PO - 2	Able to make decisions about local biodiversity studies based on data/information from investigation results
PO - 3	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 - 4	Able to apply concepts related to biodiversity to analyze data resulting from biodiversity investigations
PO - 5	Skilled in accessing biodiversity information or databases by utilizing relevant technology in an effort to manage local/regional/national biodiversity

PLO-PO Matrix

P.O	PLO-8
PO-1	
PO-2	
PO-3	
PO-4	
PO-5	

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																

Short Course Description	This course studies biodiversity knowledge and its implementation to overcome global ecological challenges which includes the understanding and important role of biodiversity, the global perspective of biodiversity, the consequences and changes in biodiversity, hotspots, megabiodiversity and diversity in Indonesia. Apart from that, it also discusses issues or cases related to threats to biodiversity in Indonesia and is connected to ethics and biodiversity conventions. Lectures will be delivered through discussions, presentations and assignments.
References	**Main :**

1. Sutarno. 2014. Biodiversitas Indonesia; penurunan dan upaya pengelolaan untuk menjamin kemandirian bangsa. Makalah. Seminar Nasional Masyarakat Biodiversitas Indonesia. Universitas Indonesia. Jakarta
2. WALHI. 1995. Strategi Keanekaragaman Hayati. Terjemahan dari Global Biodiversity Strategy. Jakarta: Gramedia
3. Peyton B., Henry C., Scott R.W., Michael D.P., and Judith V.P., Biological Diversity for Secondary Education. Enviromental Education Module. Unesdoc. Unesco.
4. Myers N, Mittermeier RA, Mittermeier CG, da Fonseca GAB, Kent J. 2000. Biodiversity hotspots for conservation priorities. Nature 403: 853–858
5. Myers N., 2003. Biodiversity Hotspots Revisited. BioScience 53 (10): 796-797
6. Anonim. 1998. Biodiversity Hotspots and Major Tropical Wilderness Areas: Approaches to Setting Conservation Priorities. Conservation Biology 12 (3): 516–520.

Supporters:	

Supporting lecturer	Dra. Evie Ratnasari, M.Si. Dr. Wisanti, M.S. Prof. Dr. Fida Rachmadiarti, M.Kes. Reni Ambarwati, S.Si., M.Sc.

Week-	**Final abilities of each learning stage (Sub-PO)**	**Evaluation**		**Help Learning, Learning methods, Student Assignments, [Estimated time]**		**Learning materials [References]**	**Assessment Weight (%)**
		Indicator	**Criteria & Form**	**Offline (*offline*)**	**Online (*online*)**		
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
1	Understand the concept and value of biodiversity	a. Explain the differences in understanding diversity at the gene, species and ecosystem levels b. Give examples at each level of diversity c. Explain the relationship between gene diversity and species adaptation d. Explain the meaning of species diversity: alpha, beta and gamma e. Determine indicators for measuring species diversity based on structure f. Explain the measurement indicators for each level of diversity. g. Explain the factors that cause biodiversity	**Criteria:** Quantitative (C2 and C3) **Form of Assessment** : Participatory Activities	Lectures and discussions 2 x 50 minutes		**Material:** Understanding and value of biodiversity **References:** *Peyton B., Henry C., Scott RW, Michael DP, and Judith VP, Biological Diversity for Secondary Education. Environmental Education Module. Unesdoc. UNESCO.* **Material:** Definition and value of biodiversity **Library:** *WALHI. 1995. Biodiversity Strategy. Translation of Global Biodiversity Strategy. Jakarta: Gramedia*	0%

2	Understand the important role of biodiversity with examples	a. Explain the important role of biodiversity in terms of ecosystems b. Explain the important role of biodiversity in relation to biological resources c. Explain the role of biodiversity in relation to social benefits d. Provide examples of the role of biodiversity in relation to social benefits	**Criteria:** Quantitative (C2 and C3) **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Presentation and discussion 2x50 minutes		**Material:** The important role of biodiversity **Reference:** *WALHI. 1995. Biodiversity Strategy. Translation of Global Biodiversity Strategy. Jakarta: Gramedia* **Material:** The important role of biodiversity and examples **References:** *Peyton B., Henry C., Scott RW, Michael DP, and Judith VP, Biological Diversity for Secondary Education. Environmental Education Module. Unesdoc. UNESCO.*	10%
3	Understanding biodiversity from various perspectives	a. Explain the temporal pattern of biodiversity b. Explain spatial patterns in biodiversity c. Explain the hypothesis about latitude gradients and species diversity d. Explain the altitude gradient e. Analyzing biodiversity cases from various perspectives	**Criteria:** Quantitative (C2 and C4) **Form of Assessment** : Participatory Activities	Lectures and assignments 2 x 50 minutes		**Material:** biodiversity from various perspectives **References:** *Peyton B., Henry C., Scott RW, Michael DP, and Judith VP, Biological Diversity for Secondary Education. Environmental Education Module. Unesdoc. UNESCO.*	0%
4	Understanding global biodiversity and extinction crises	a. Analyze global change and species extinction b. Analyze the relationship between human activities and threats to biodiversity c. Explain the limitations of invasive species d. Analyze the impact of invasive species on biodiversity e. Explain the relationship between biodiversity and food production f. Explain the relationship between biodiversity and medical research	**Criteria:** Quantitative (C2 and C4) **Form of Assessment** : Participatory Activities	Lectures, discussions and assignments		**Material:** Global biodiversity **Reference:** *WALHI. 1995. Biodiversity Strategy. Translation of Global Biodiversity Strategy. Jakarta: Gramedia*	0%

5	Understanding endemics and biodiversity hotspots	a. Analyze global change and species extinction b. Analyze the relationship between human activities and threats to biodiversity c. Explain the limitations of invasive species d. Analyze the impact of invasive species on biodiversity e. Explain the relationship between biodiversity and food production f. Explain the relationship between biodiversity and medical research	**Criteria:** Quantitative (C2 and C4); written test **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Assignments and presentations 2 x 50 minutes		**Material:** Biodiversity Hostspots **Reference:** *Myers N., 2003. Biodiversity Hotspots Revisited. BioScience 53 (10): 796-797* **Material:** Biodiversity hotspots **References:** *Myers N, Mittermeier RA, Mittermeier CG, da Fonseca GAB, Kent J. 2000. Biodiversity hotspots for conservation priorities. Nature 403: 853–858*	10%
6	Understanding megabiodiversity	Explain the concept of megabiodiversity countries. b. Presents megabiodiversity profiles of each country in video form	**Criteria:** Quantitative (C2 and C4); Non-testing **Form of Assessment** : Participatory Activities	Presentation and discussion 2x50 minutes		**Material:** Megabiodiversity **Library:** *WALHI. 1995. Biodiversity Strategy. Translation of Global Biodiversity Strategy. Jakarta: Gramedia*	0%
7	1. Understanding biodiversity in Indonesia 2. Able to show an objective attitude towards biodiversity problems in Indonesia and criticize them to provide solutions to these problems based on scientific references	a. Comparing the amount of biodiversity in Indonesia with other countries by utilizing a database via the internet b. Provide a critical statement about the main causes behind the ongoing decline in biodiversity in Indonesia based on the latest research results. c. Explain the concept of biodiversity services and its relevance for natural resource management and sustainable development	**Criteria:** Quantitative (C2 and C4); test and non-test **Form of Assessment** : Participatory Activities	Presentation and discussion 2 X 50 minutes		**Material:** Indonesian Biodiversity **Reader:** *Sutarno. 2014. Indonesian Biodiversity; reduction and management efforts to ensure the nation's independence. Paper. National Seminar on the Indonesian Biodiversity Society. University of Indonesia. Jakarta* **Material:** tropical regions **Reference:** *Anonymous. 1998. Biodiversity Hotspots and Major Tropical Wilderness Areas: Approaches to Setting Conservation Priorities. Conservation Biology 12(3): 516–520.*	0%
8			**Form of Assessment** : Participatory Activities, Tests	MIDTERM EXAM			10%

9	Understand the relationship between local wisdom and biodiversity	1. Explain indigenous views of biodiversity and ecosystem services 2. Analyze examples of the role of indigenous peoples and local communities in managing sustainable biodiversity	**Criteria:** Quantitative; test and non-test **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Presentation and discussion 2 X 50 minutes		**Material:** Indonesian Biodiversity **Reader:** *Sutarno. 2014. Indonesian Biodiversity; reduction and management efforts to ensure the nation's independence. Paper. National Seminar on the Indonesian Biodiversity Society. University of Indonesia. Jakarta*	20%
10	9. Understand Indonesia as a biodiversity hotspot	a. Explain the biodiversity hotspots of the Sundaland and Wallacea regions b. Explaining the Sulawesi biodiversity hotspot c. Explain the unique biodiversity of tropical rainforests	**Form of Assessment** : Participatory Activities	Lecture and question and answer 2 X 50 minutes		**Material:** biodiversity hotspots in Indonesia **Reference:** *Anonymous. 1998. Biodiversity Hotspots and Major Tropical Wilderness Areas: Approaches to Setting Conservation Priorities. Conservation Biology 12(3): 516–520.* **Material:** Tropical rain forests **References:** *7. Margono, BA, Potapov, PV, Turubanova, S., Stolle, F. and Hansen, CM, 2014. Primary forest cover loss in Indonesia over 2000–2012. Nature Climatic Change 4: 730-735.*	0%
11	Understand the consequences and changes in biodiversity	a. Explain the meaning of biodiversity loss b. Determine the main components causing biodiversity loss. c. Analyzing cases of biodiversity loss related to the consequences and ethics of biodiversity	**Criteria:** Quantitative (C2 and C4), test **Form of Assessment** : Participatory Activities	Lectures, discussions and assignments 2 x 50 minutes		**Material:** Loss of biodiversity **Bibliography:** *Peyton B., Henry C., Scott RW, Michael DP, and Judith VP, Biological Diversity for Secondary Education. Environmental Education Module. Unesdoc. UNESCO.*	0%

12	1. Understand the important role of local biodiversity 2. Able to make decisions about local biodiversity studies based on investigation data	a. Explain the important role of local biodiversity. b. Analyze the results of investigations of flora or fauna that represent local biodiversity. c. determine decisions regarding local biodiversity studies based on investigation data	**Criteria:** Quantitative; non-test **Form of Assessment** : Project Results Assessment / Product Assessment	Lectures and project assignments 2 X 50 minutes		**Material:** biodiversity strategy **Reference:** *WALHI. 1995. Biodiversity Strategy. Translation of Global Biodiversity Strategy. Jakarta: Gramedia* **Material:** Biodiversity **Bibliography:** *Peyton B., Henry C., Scott RW, Michael DP, and Judith VP, Biological Diversity for Secondary Education. Environmental Education Module. Unesdoc. UNESCO.*	10%
13	1. Understand the important role of local biodiversity 2. Able to make decisions about local biodiversity studies based on investigation data 3. Prepare a study of the results of local biodiversity investigations	a. Analyze the results of investigations of flora or fauna that represent local biodiversity. b. determine decisions regarding local biodiversity studies based on investigation data	**Criteria:** Quantitative; non-test **Form of Assessment** : Project Results Assessment / Product Assessment	Project assignment guidance 2 X 50 minutes		**Material:** biodiversity strategy **Reference:** *WALHI. 1995. Biodiversity Strategy. Translation of Global Biodiversity Strategy. Jakarta: Gramedia* **Material:** Biodiversity **Bibliography:** *Peyton B., Henry C., Scott RW, Michael DP, and Judith VP, Biological Diversity for Secondary Education. Environmental Education Module. Unesdoc. UNESCO.*	10%
14	1. Able to make decisions about local biodiversity studies based on investigation data 2. Able to communicate the results of local biodiversity investigations independently and honestly in class seminars 3. Prepare a study of the results of local biodiversity investigations	a. Explain the important role of local biodiversity. b. Analyze the results of investigations of flora or fauna that represent local biodiversity. c. determine decisions regarding local biodiversity studies based on investigation data	**Criteria:** Quantitative; non-test **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Project assignment guidance 2 X 50 minutes		**Material:** biodiversity strategy **Reference:** *WALHI. 1995. Biodiversity Strategy. Translation of Global Biodiversity Strategy. Jakarta: Gramedia* **Material:** Biodiversity **Bibliography:** *Peyton B., Henry C., Scott RW, Michael DP, and Judith VP, Biological Diversity for Secondary Education. Environmental Education Module. Unesdoc. UNESCO.*	10%

15	1.Prepare a study of the results of local biodiversity investigations 2.Able to communicate the results of local biodiversity investigations independently and honestly in class seminars	a. Explain the important role of local biodiversity. b. Analyze the results of investigations of flora or fauna that represent local biodiversity. c. determine decisions regarding local biodiversity studies based on investigation data	**Criteria:** Quantitative; non-test **Form of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment	Presentation, question and answer and discussion 2 x 50 minutes		**Material:** biodiversity strategy **Reference:** *WALHI. 1995. Biodiversity Strategy. Translation of Global Biodiversity Strategy. Jakarta: Gramedia* **Material:** Biodiversity **Bibliography:** *Peyton B., Henry C., Scott RW, Michael DP, and Judith VP, Biological Diversity for Secondary Education. Environmental Education Module. Unesdoc. UNESCO.*	10%
16		FINAL EXAMS	**Form of Assessment** : Participatory Activities, Tests	FINAL EXAMS			10%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
1.	Participatory Activities	40%
2.	Project Results Assessment / Product Assessment	50%
3.	Test	10%
		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** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities or performance of student learning outcomes accompanied by evidence.
6. **Assessment Criteria** are benchmarks used as a measure or measure of learning achievement in assessments based on predetermined indicators. Assessment criteria are guidelines for assessors so that assessments are consistent and unbiased. Criteria can be quantitative or qualitative.
7. **Forms of assessment:** test and non-test.
8. **Forms of learning:** Lecture, Response, Tutorial, Seminar or equivalent, Practicum, Studio Practice, Workshop Practice, Field Practice, Research, Community Service and/or other equivalent forms of learning.
9. **Learning Methods:** Small Group Discussion, Role-Play & Simulation, Discovery Learning, Self-Directed Learning, Cooperative Learning, Collaborative Learning, Contextual Learning, Project Based Learning, and other equivalent methods.
10. **Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
11. **The assessment weight** is the percentage of assessment of each sub-PO achievement whose size is proportional to the level of difficulty of achieving that sub-PO, and the total is 100%.
12. TM=Face to face, PT=Structured assignments, BM=Independent study.