KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,
RISET, DAN TEKNOLOGI
UNIVERSITAS MULAWARMAN
Rektorat Kampus Gunung Kelua Jalan Kuaro, Samarinda 75119, Kotak Pos 1068
Telepon (0541) 741118 Faximile (0541) 747479-732870
Laman www.unmul.ac.id

KEPUTUSAN REKTOR UNIVERSITAS MULAWARMAN

NOMOR 1385 /UN17/HK/2021

TENTANG

PANITIA DAN MODERATOR WORKSHOP RENCANA PEMBELAJARAN BERBASIS INTERNASIONAL SEMESTER GANJIL PROGRAM STUDI PENDIDIKAN BIOLOGI FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN UNIVERSITAS MULAWARMAN TAHUN 2021

REKTOR UNIVERSITAS MULAWARMAN,

Menimbang : a. bahwa Fakultas Keguruan dan Ilmu Pendidikan Universitas Mulawarman telah mengusulkan penerbitan Keputusan Rektor Universitas Mulawarman melalui Surat Dekan Nomor 713/UN17.5/TU/2021 tanggal 6 Juli 2021 Perihal Panitia dan Moderator Workshop Rencana Pembelajaran Berbasis Internasional Semester Ganjil Program Studi Pendidikan Biologi Fakultas Keguruan dan Ilmu Pendidikan Universitas Mulawarman Tahun 2021;

b. bahwa untuk menguatkan sebagaimana dimaksud pada huruf a perlu diterbitkan Keputusan Rektor.

Mengingat : 1. Undang-Undang RI Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional;

2. Undang-Undang RI Nomor 12 Tahun 2012 tentang Pendidikan Tinggi;

3. Peraturan Pemerintah RI Nomor 4 tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi;

4. Keputusan Presiden RI Nomor 65 Tahun 1963 tentang Pendirian Universitas Mulawarman;

5. Peraturan Menteri Riset, Teknologi, dan Pendidikan Tinggi RI Nomor 9 Tahun 2015 tentang Organisasi dan Tata Kerja Universitas Mulawarman, sebagaimana telah diubah dengan Peraturan Menteri Riset, Teknologi, dan Pendidikan Tinggi RI Nomor 26 Tahun 2018 tentang Perubahan Atas Peraturan Menteri Riset, Teknologi, dan Pendidikan Tinggi RI Nomor 9 Tahun 2015 tentang Organisasi dan Tata Kerja Universitas Mulawarman;

6. Peraturan Menteri Riset, Teknologi, dan Pendidikan Tinggi RI Nomor 57 Tahun 2018 tentang Statuta Universitas Mulawarman;

7. Keputusan Menteri Riset, Teknologi, dan Pendidikan Tinggi RI Nomor 661/M/KPT.KP/2018 tentang Pemberhentian dan Pengangkatan Rektor Universitas Mulawarman Periode 2018-2022;

8. Peraturan Rektor Universitas Mulawarman Nomor 17 Tahun 2020 tentang Penyelenggaraan Pendidikan dan Pengajaran, Penelitian dan Pengabdian Kepada Masyarakat Berbasis Kampus Merdeka dan Merdeka Belajar;
9. Keputusan Rektor Universitas Mulawarman Nomor 1926/KP/2019 tentang Pemberhentian dan Pengangkatan Dekan Fakultas Keguruan dan Ilmu Pendidikan Universitas Mulawarman Periode Tahun 2019 – 2023;

MEMUTUSKAN:

Menetapkan : KEPUTUSAN REKTOR UNIVERSITAS MULAWARMAN TENTANG PANITIA DAN MODERATOR WORKSHOP RENCANA PEMBELAJARAN BERBASIS INTERNASIONAL SEMESTER GANJIL PROGRAM STUDI PENDIDIKAN BIOLOGI FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN UNIVERSITAS MULAWARMAN TAHUN 2021.

KESATU : Panitia dan Moderator Workshop Rencana Pembelajaran Berbasis Internasional Semester Ganjil Program Studi Pendidikan Biologi Fakultas Keguruan dan Ilmu Pendidikan Universitas Mulawarman Tahun 2021, dengan susunan nama dan jabatan sebagaimana terdapat dalam lampiran yang tidak terpisahkan dari keputusan ini.

KEDUA : Pembiayaan yang disebabkan dengan diterbitkannya keputusan ini dibebankan DIPA BLU Universitas Mulawarman, Anggaran Fakultas Keguruan dan Ilmu Pendidikan Universitas Mulawarman.

KETIGA : Keputusan ini berlaku sejak bulan Januari sampai dengan 31 Desember 2021.

KEEMPAT : Bilamana dikemudian hari terdapat kekeliruan dalam Keputusan ini, akan diperbaiki sebagaimana mestinya.

Ditetapkan di Samarinda
Pada tanggal 9 Agustus 2021

a.n. REKTOR,

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET, DAN TEKNOLOGI UNIVERSITAS MULAWARMAN REKTOR

Prof. Dr. H. Masjaya, M.Si
NIP 196212311991031024

LAMPIRAN
KEPUTUSAN REKTOR UNIVERSITAS MULAWARMAN
NOMOR 1385 /UN17/HK/2021
TANGGAL 9 AGUSTUS 2021
TENTANG
PANITIA DAN MODERATOR WORKSHOP RENCANA PEMBELAJARAN BERBASIS INTERNASIONAL SEMESTER GANJIL PROGRAM STUDI PENDIDIKAN BIOLOGI FAKULTAS KEGURUAN DAN ILMU PENDIDIKAN UNIVERSITAS MULAWARMAN TAHUN 2021

NO	JABATAN	NAMA	GOLONGAN	HONORARIUM
1.	Penanggung Jawab	Prof. Dr. H. Muh. Amir Masruhim, M.Kes	IV/d	Poin Remun
2.	Ketua	Dr. Hj. Herliani, M.Pd	IV/c	Poin Remun
3.	Bendahara	Yulianti, S.Hut	III/c	Poin Remun
4.	Seksi Acara	1. Zenia Lutfi Kurniawati, S.Pd., M.Pd 2. Dora Dayu Rahma Turista, S.Si, M.d	III/b CPNS	Poin Remun Poin Remun
5.	Seksi Konsumsi	1. Sri Purwati, S.Pd., M.Pd 2. Eadvin Rosrinda Awang Sari, S.Si 3. Ruqoyyah Nasution, S.Pd., M.Pd	IV/a III/b Non PNS	Poin Remun Poin Remun -

NO	JABATAN	KETERANGAN	HONORARIUM
1.	Narasumber	Nama : Masitah, S.Pd., M.Pd NIP : 19840312 200604 2 001 Golongan : III/d Pekerjaan : Dosen Unit Kerja : FKIP Universitas Mulawarman	Poin Remun

Ditetapkan di Samarinda
REKTOR,

Prof. Dr. H. Masjaya, M.Si
NIP 196212311991031024

ENVIRONMENTAL SCIENCE LESSON PLAN

	MINISTRY OF EDUCATION AND CULTURE **MULAWARMAN UNIVERSITY** **FACULTY OF TEACHER TRAINING AND EDUCATION** **BIOLOGY EDUCATION STUDY PROGRAM**	No. Doc	…….
		Release Date	…….
		No Revision	…….
		Page	…….

LESSON PLAN					
Courses	**Course Code**	**Clusters of Courses**	**Weight (credit)**	**Semester**	**date Compilation**
Environmental Science	19050162W012		2	2	March 2, 2020

Authorization	**Course Coordinator**	**TEAM Teaching Courses**	**choir. Study Program**
	Sri Purwati, S.Pd. M.Si	**1. Drs. H. Jailani, M. Si** **2. Sri Purwati, S.Pd. M.Si**	Dr. Herliani, M.Pd

Learning Outcomes	**Learning Outcomes of Study Program Graduates (LO-Study Program) Charged on Courses**	
	Attitude	A2 Collaborate and take responsibility for work in their fields of biology and learning
	Knowledge	K1. Able to master basic theories, concepts, principles and procedures in the scientific field of biology and the interaction of organisms with Tropical Rain Forest and its Environment.
	General Skills	GS2. Able to apply logical, critical, systematic, and innovative thinking in making strategic decisions by applying humanities values in the field of biology and learning based on relevant information and data

	Course Learning Outcomes (CLO)
	1. Able to Collaborate and take responsibility for work in their fields of Environmental Science courses 2. Able to master basic theories, concepts, principles and procedures in the scientific field of Environmental Science courses. 3. Able to apply logical, critical, systematic, and innovative thinking in making strategic decisions by applying humanities values in the field of Environmental Science courses
Integrated Unmul PIP	1.6 EXPLORATION, UTILIZATION AND USE OF SDA AND THE ENVIRONMENT: contains procedures, rules, norms, laws and others in the utilization of tropical rain forests and their environment so that they do not have a negative impact on life. • Utilization of natural resources: The concept of principles and objectives • Various rules and regulations related to the use of natural resources in tropical rain forest areas • Violations and criminal acts related to the use of natural resources on the island of Kalimantan • The role of the community in the use of natural resources so as not to have a bad impact 1.7 ENVIRONMENTALLY FRIENDLY TECHNOLOGY: contains the need for appropriate or environmentally friendly technology in the exploration, utilization and use of natural resources in the tropical rain forest environment/region. • Concepts, principles, types, purposes and benefits and impacts of environmentally friendly technologies • Utilization of environmentally friendly technology in tropical rain forest areas Cases of using environmentally friendly vs non-environmentally friendly technology in the Kalimantan region
Course Description	The environmental science courses described include environmental science concepts, various environmental problems globally and nationally, basic concepts of ecology and population environmental science, 14 principles of environmental science, land resources, forest and mineral resources, environmental ethics, environmental pollution, environmental health, food sanitation, water and housing sanitation, environmental policy strategies, environmentally sound development and environmental impact analysis.

Reference	1. Istamar Samsyuri, 1999. Environmental Knowledge 2. Anderson H. Stanley, Ronald EB & Waltow, 1993, Environmental Science, New York: Mc. Millan Publishing 3. Company Miller GY,2000, Living in the Environment , Principles, connection & Solution, 9th edition, California: Wadsworth Publishing Company 4. Soemarwoto, O., 1985, Environmental Ecology and Development, Jakarta: Djambatan Publisher. 5. Soemarwoto, O., 1991, Indonesia in Global Environmental Issues, Jakarta: Gramedia 6. Soeriaatmadja, 1991, Environmental Science, Bandung: ITB 7. July Soemirat Slamet. . Environmental Health. Gadjah Mada University Press. 8. Zulkifli,. 2007. Fundamentals of Environmental Science. Salemba Teknika 9. Soerjani et al, 1987, Environment: Natural Resources and Population in Development, Jakarta, University of Indonesia Publisher 10. Kurnia, Rahma, 2004, Activity Report on Environmental Impact Identification Course, Jogjakarta, GEGAMA 11. Hardjasoemantri, Koesnadi, 2001, Environmental Management Law, Jogjakarta, Gadjah Mada University Press. 12. Yunus, Hadi Sabari, 2000. Urban Spatial Structure, Yogyakarta. Learning Library	
Learning Media	**Software :**	**Hardware :**
	Soft files, e-learning	Laptops, LCDs and televisions
Prerequisite Courses (If any)	-	

meeting-to	Sub-CLO	Indicator	Study Material	Learning Strategies (Models and Methods)	Student Learning Experience	Rating			Reference
						Type	Criteria	Weight (%)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Students are able to analyze environmental science concepts and lecture contracts	Analyze environmental science concepts according to: - Expert - Constitution - Abiotic biotic components - Biological, physical, chemical, social and cultural environment - Improvement of human life	Environmental Science Concepts and Lecture Contracts	STAD Cooperative Discussion, question and answer, lecture	Receive an explanation about RPS 1. Analyze the material in outline 2. Giving group assignments 3. Literacy of materials from various sources about the material being studied independently 4. Conduct discussions and ask questions about the material being discussed 5. Carry out presentations, discussions and Q&A 6. Write down the results of the discussion and draw conclusions from the results of the discussion 7. Receive an explanation of	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product assess	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in	6	1

		kehidupan - Government participation in international meetings			assignments to compile papers and compile study journals	ment in the form of exploration results about the material being discussed	collecting assignments)		
2	Students are able to analyze environmental problems globally, regionally and locally	Analyzing environmental problems - global - regional - local	Environmental Problems	Problem Based Learning Discussion, question and answer, lecture	1. Finding environmental problems 2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting through question and answer	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment throug	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answer	**7**	**1,2,3,4, 6**

						h observation • Product assessment in the form of exploration results about the material being discussed	s) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
3	Students are able to analyze ecology as the basis of environmental science	Analyzing ecology as the basis of environmental science: - Ecological concept - Individuals, populations, communities,	Basic concepts of population ecology and environmental science	STAD Cooperative Discussion, question and answer, lecture	1. Analyze the material in outline 2. Giving group assignments 3. Literacy of materials from various sources about the material being studied independently 4. Conduct discussions and ask questions about the material being discussed 5. Conducting presentations, discussions and	Types and techniques of assessment: • Process assessment through observation and assign	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators:	**8**	**4.5**

		ecosystems - Ecology of the world's population			Q&A 6. Drawing conclusions from the discussion 7. Receive an explanation of assignments to compile papers and compile study journals	ment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
4	Students are able to analyze the principles of environmental science and its implications	Analyzing the 14 principles of environmental science and their implications	14 Principles of environmental science	STAD Cooperative Discussion, question and answer, lecture	1. Analyze the material in outline 2. Giving group assignments 3. Literacy of materials from various sources about the material being studied independently 4. Conduct discussions	Types and techniques of assessment: • Process assessment	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability	**8**	**1,3 and 4**

					and ask questions about the material being discussed 5. Conducting presentations, discussions and Q&A 6. Drawing conclusions from the discussion 7. Receive an explanation of assignments to compile papers and compile study journals	through observation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
5	Students are able to analyze resources in	Able to analyze the use of	Resources in terrestrial ecosystems	Cooperative Learning Model Type	1. Finding environmental problems	Types and techniques of	Assessment criteria: • PAP Assessment indicators:	**8**	**9**

	terrestrial ecosystems	terrestrial ecosystems regarding: - Concept of terrestrial ecosystem - Various terrestrial ecosystems including karts and rainforest - Utilization of terrestrial ecosystems - Problems arising from the management of terrestrial ecosystems - Solutions to solve terrestrial ecosystem problems		Problem Based Learning Discussion method, question and answer, lecture	2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting through question and answer	assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discuss	• Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		

						ed			
6	Students are able to analyze resources in the aquatic ecosystem	Analyzing the utilization of the aquatic ecosystem which includes: - The concept of an aquatic ecosystem consisting of mangroves, seagrass beds and coral reefs (sea) - Utilization of resources in aquatic ecosystems - Assessing the problems that arise as a result of the	Resources in the aquatic ecosystem	Learning Model Problem Based Learning Discussion method, question and answer, lecture	5. Finding environmental problems 6. Analyzing environmental problems through observation and literacy of journals and sources of information 7. Discuss the results of literacy and discussion 8. Presenting results and interacting through question and answer	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the form of exploration	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)	**8**	**9**

		utilization - Troubleshooting solutions in the aquatic ecosystem				results about the material being discussed			
7	Students are able to analyze environmental ethics and its application	Analyzing environmental ethics and its application	Environmental Ethics	STAD Cooperative Discussion, question and answer, lecture	1. Analyze the material in outline 2. Giving group assignments 3. Literacy of materials from various sources about the material being studied independently 4. Conduct discussions and ask questions about the material being discussed 5. Conducting presentations, discussions and Q&A 6. Drawing conclusions from the discussion 7. Receive an explanation of assignments to compile papers and compile study journals	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures,	**8**	**1,3 and 4**

						assessment in the form of exploration results about the material being discussed	punctuality in collecting assignments)		
8	**Mid-Semester Exam**								
9	Students are able to analyze global warming on human life	Analyzing global warming on human life - Pollutant source - Impact of pollution - Countermeasures	Global warming	Problem Based Learning Discussion, question and answer, lecture	1. Finding environmental problems 2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting through question and answer	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of		**5**

						assessment through observation • Product assessment in the form of exploration results about the material being discussed	questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
10	Students are able to analyze various pollutions on human life	Analyzing various environmental pollutions on human life - Physical - Chemistry - Biology - Social culture	Environmental pollution	Problem Based Learning Discussion, question and answer, lecture	1. Finding environmental problems 2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and	Types and techniques of assessment: • Process assessment through observ	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class		**5**

					discussion 4. Presenting results and interacting through question and answer	ation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
11	Students are able to analyze environmental health	Analyzing environmental health	Environmental Health	Problem Based Learning Discussion, question and answer,	1. Finding environmental problems 2. Analyzing environmental problems through	Types and techniques of assessment: • Proces	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations		**7**

				lecture	observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting through question and answer	s assessment through observation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	(indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
12	Students are able	Analyzing	Sanitation of	Problem	1. Finding	Types	Assessment criteria:		**7**

	to analyze food, water and housing sanitation	food, water and housing sanitation	food, water and housing	Based Learning Discussion, question and answer, lecture	environmental problems 2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting through question and answer	and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the	• PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		

						material being discussed			
13	Students are able to analyze environmental policy strategies according to laws and regulations	Analyzing environmental policy strategies according to laws and regulations	Environmental Policy Strategy	Problem Based Learning Discussion, question and answer, lecture	9. Finding environmental problems 10. Analyzing environmental problems through observation and literacy of journals and sources of information 11. Discuss the results of literacy and discussion 12. Presenting results and interacting through question and answer	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		**11 and 12**

						form of exploration results about the material being discussed			
14	Students are able to analyze environmentally sound development	Analyzing environmentally sound development	Environmentally friendly development	Problem Based Learning Discussion, question and answer, lecture	1. Finding environmental problems 2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting through question and answer	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observ	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline		**9, 11 and 12**

						ation • Product assessment in the form of exploration results about the material being discussed	(seriousness in attending lectures, punctuality in collecting assignments)		
15	Students are able to analyze environmental impacts	Analyze environmental impact	Environmental Significant Impact	Problem Based Learning Discussion, question and answer, lecture	1. Finding environmental problems 2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting through question	Types and techniques of assessment: • Process assessment through observation and assignment • Attitud	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/respons		**10**

					and answer	e assessment through observation • Product assessment in the form of exploration results about the material being discussed	es, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
16	**Final Semester Exam**								

Samarinda, March 13, 2020

Knowing
choir. Study program
Biology Education

Dr. Hj. Herliani, M.Pd

NIP.196709121992032002

Course Coordinator

Sri Purwati, S.Pd. M.Si
NIP. 197304242000122001

Faculty of Teacher Training and Education

Note:

1. Learning Outcomes of Study Program Graduates (CPL-PRODI) are the abilities possessed by each graduate which are internalization of the attitude domain, general skills domain, special skills domain, and knowledge domain according to the study program level obtained through the learning process.
2. CPL-PRODI which is charged to courses are several CPL-PRODI which are used for the formation/development of a course;
3. Course Learning Outcomes (CPMK) are abilities that are specifically described from the CP graduates that are charged to the course;
4. Unmul PIP Integrated, namely the dimensions that contain study materials according to CPL or CPMK
5. Course Description: made in the form of a narrative that describes the content (content) of the course and outlines the dominant strategy adopted: for example, this Constitutional Court is presented in theory and practice
6. References: current references are written, except because the nature of the course requires old references (History, evolution, etc.). It is recommended that there are reference references that contain most of the lecture content.
7. Sub-Current Learning Outcomes (Sub-CPMK) point (2) are abilities that are specifically described from CPMK that can be measured or observed and are the final abilities that are planned at each learning stage.
8. Indicator (3) written using operational verbs and referents/content
9. Study Material (4): Study material is easily extracted from the content in the indicator.

Example: Indicator Explains (Verb) how the combustion engine works (Content)--- WRITTEN in this column is: How the combustion engine works.

10. Learning strategies include learning models and methods (5): Learning models can be in the form of PBL, Inquiry, cooperative models or other learning models that can effectively facilitate the fulfillment of graduate learning outcomes.
11. Student Learning Experience (6), namely: activities that must be carried out by students designed by the lecturer so that the person concerned has a predetermined ability (assignments, surveys, compiling papers, doing practicals, comparative studies, etc.). The design of the learning experience contains three aspects explicitly, namely student activities, lecture content and learning resources. Example Discussing (activity) the reasons for the Diponegoro war (Lecture content) based on the book Book-2 Chapter 7 (Learning Resources)
12. Type (7): write down the type of test: written, oral, and others.

13. Assessment Criteria (8) is a benchmark used as a measure or benchmark for learning achievement in an assessment based on predetermined indicators. The criteria are guidelines for assessors so that the assessment is consistent and unbiased. Criteria can be either quantitative or qualitative.
14. The weight (9) is adjusted to the complexity / time used to discuss or work on the task, or the amount of contribution of an ability to the achievement of the assigned learning.
15. Point (10) Reference: include the reference source, with numbers only based on the reference source above.
16. Evaluation of course graduation refers to the KKNI (Perpres 8/2012) (can be seen in appendix 1)

ENTOMOLOGY LESSON PLAN

	MINISTRY OF EDUCATION, CULTURE, RESEARCH, AND TECHNOLOGY MULAWARMAN UNIVERSITY FACULTY OF TEACHER TRAINING AND EDUCATION BIOLOGY EDUCATION STUDY PROGRAM	No. Doc	4.10
		Release Date	July 6, 2020
		No Revision	3
		Page	22

LESSON PLAN					
Courses	**Course Code**	**Clusters of Courses**	**Weight (credit)**	**Semester**	**date Compilation**
Entomology	19050162W029	Course Offered by Study Program	2 credits	4	March 7, 2020

Authorization	**Course Coordinator**	**TEAM Teaching Courses**	**choir. Study Program**
	Dr. Sonja V.T, LumowA	1. Dr. Sonja V.T. Lumowa, M.Kes 2. Sri Purwati, S.Pd. M.Si	Dr. Herliani, M.Pd

Learning Outcomes	**Learning Outcomes of Study Program Graduates (LO-Study Program) Charged on Courses**	
	Attitude	A2 Collaborate and take responsibility for work in their fields of biology and learning.
	Knowledge	K1 Able to master basic theories, concepts, principles and procedures in the scientific field of biology and the interaction of organisms with Tropical Rain Forest and its Environment.
	General Skills	GS2 Able to apply logical, critical, systematic, and innovative thinking in making strategic decisions by applying humanities values in the field of biology and learning based on relevant information and data

	Course Learning Outcomes (CLO) 1. Collaborate and take responsibility for work in their fields of Entomology and learning. 2. Able to master basic theories, concepts, principles and procedures in the field of Entomology 3. Able to apply logical, critical, systematic, and innovative in the field of Entomology and learning based on relevant information and data
Integrated Principle Scientific Studies of Unmul	1.5 ANIMAL BIODIVERSITY: contains various types of animals in tropical forest areas, whether they live on land, fresh water, or salt water and have the potential to be developed. Can be added with various pests and diseases in animals typical of tropical rain forests • Biodiversity of animals in tropical rain forest areas, • Kinds or types of animals in the tropical rain forest and their characteristics • The benefits of the kinds and types of animals in the tropical rain forest, Types of pests and diseases of animals in tropical rain forest areas 1.7 ENVIRONMENTALLY FRIENDLY TECHNOLOGY: contains the need for appropriate or environmentally friendly technology in the exploration, utilization and use of natural resources in the tropical rain forest environment/region. • Concepts, principles, types, purposes and benefits and impacts of environmentally friendly technologies • Utilization of environmentally friendly technology in tropical rain forest areas Cases of using environmentally friendly vs non-environmentally friendly technology in the Kalimantan region
Course Description	Studies in the course include: (1) entomology as a science (2) insect anatomy (3) insect physiology, (4) reproductive system, (5) insect life cycle (6) insect-human relationship (7) apterygota insects (8) pterygota insects (9) factors affecting insect life (10) insect behavior (11) insect pest control (12) insect collections.
Reference	1. Borror. Triplehom, Johnson, 1992. Introduction to Insect Studies (translation). Gadjah Mada University Press, Yogyakarta. 2. Ross, H. Herbert., Charles, A. Ross and June RP., Ross. 1982. A Textbook of Entomology. John Wiley and Sons. New York. pp.27-56. 3. Friday. 2000. Agricultural Entomology. Rineka Cipta, Jakarta. 4. Kasumtayo Untung, 1996. Introduction to Integrated Pest Management. Gadjah Mada University Press. Yogyakarta,

	5. Satrocihardjo, 1990. Introduction to Applied Entomology. ITB, Bandung. 6. Mohammad Hadi et al. Insect Biology. 2009. Graha Ilmu. Yogyakarta.
Learning Media	**Software :** / **Hardware :**
Prerequisite Courses (If any)	-

SEMESTER LEARNING PLAN									
meeting-to	**Sub-CLO**	**Indicator**	**Study Material**	**Learning Strategies (Models and Methods)**	**Student Learning Experience**	**Rating**			**Reference**
						Type	**Criteria**	**Weight (%)**	
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
1	Students are able to analyze the basic concepts of entomology and lecture contacts	• basic concepts of entomology and • study contract	Introduction and study contract	STAD Learning Model Method : Discussion, question and answer, lecture	1. Exploring information about the basic concepts of entomology, which include: • Definition of entomology • The relationship between insects and humans • Insect diversity • Characteristics of insects • Advantages and disadvantages of insects • The origin of	• Process assessment through observation and assignment • Attitude assessment through	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of	**4**	**1,2,6**

					insects 2. Passing search results to classmates 3. Conduct discussions and ask questions about the material being studied 4. Get confirmation and reinforcement from the lecturer 5. Drawing conclusions based on learning experiences 6. Receive rewards for success in conducting discussions and questions and answers tanya 7. Receive assignments for the next meeting. Individual assignments are resumes of the material to be studied. Tasks in groups include being able to bring observations in the form of insects, bringing pictures that can describe the structure of the insect's body, compiling papers, and making ppt slides.	observation • Product assessment in the form of exploration results about the material being discussed	questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		

2	Students are able to analyze the external and internal anatomy of insects	• Insect external anatomical structure • Anatomical structures in insects	External anatomy and Anatomy in insects	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. related to the external anatomy and internal anatomy of the insect body (each group gets a topic of one insect family) 2. Invite friends to identify insect body parts based on the observed material that has been brought by each group 3. Delivering to classmates the results of searches and observations in front of the class in the form of pictures or power points 4. Conduct discussions and ask questions with classmates to discuss the material that has been conveyed by friends 5. Get confirmation and reinforcement of material from lecturers 6. Take quizzes independently 7. Get rewards for groups that get the highest discussion scores and quiz	• Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)	**7**	**1,2,6**

					scores 8. Get assignments to compile papers and make resumes for the next meeting material that is collected online				
3	Students are able to analyze insect physiology	• Insect physiology processes include body systems, namely digestion, respiration, excretion, nerves, coordination and hormones, senses and movement	Insect physiology	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Exploring information related to the physiology of the insect body (each group gets a topic of one type of insect body system) 2. Presenting to classmates the search results that are displayed in the form of power point slides 3. Conduct discussions and ask questions with classmates to discuss the material that has been conveyed by friends 4. Get confirmation and reinforcement of material from lecturers 5. Take quizzes independently 6. Get rewards for groups that get the highest discussion scores and quiz scores	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)	**9**	**1,2,6**

					7. Get assignments to compile papers and make resumes for the next meeting material that is collected online	form of exploration results about the material being discussed			
4	Analyzing the insect reproductive system	• Insect reproductive system • Insect reproductive organs • Insect larva form Bentuk • The process of molting in insects (molting) • Insect growth control hormone	Insect reproductive system	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Exploring information related to the life cycle, embryonic development of the insect reproductive system, insect skin molting and hormones controlling insect development 2. Identifying the insect's body organs together using the observed material that has been brought 3. Presenting to classmates the search results that are displayed in the form of power point slides 4. Conduct discussions and ask questions with classmates to	• Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the form of explora	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in	**8**	**2.6**

					discuss the material that has been conveyed by friends 5. Get confirmation and reinforcement of material from lecturers 6. Take quizzes independently 7. Get rewards for groups that get the highest discussion scores and quiz scores 8. Get assignments to compile papers and make resumes for the next meeting material that is collected online	tion results about the materia l being discuss ed	attending lectures, punctuality in collecting assignments)		
5	Students are able to analyze the life cycle of insects	• Insect life cycle • Insect metamorpho sis • Insect embryonic and postembryo nic developmen t in • Factors affecting the developmen t of insects	Insect life cycle	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Exploring information related to the life cycle, embryonic and postembryonic development of insects and the factors that influence insect development 2. Presenting to classmates the search results that are displayed in the form of power point slides 3. Conduct discussions and ask questions	Types and techniqu es of assessme nt: • Proces s assess ment throug h observ ation and assign ment	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of	**7**	**2.6**

					with classmates to discuss the material that has been conveyed by friends 4. Get confirmation and reinforcement of material from lecturers 5. Take quizzes independently 6. Get rewards for groups that get the highest discussion scores and quiz scores 7. Get assignments to compile papers and make resumes for the next meeting material that is collected online	• Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
6	Students are able to relate insects to human life	• Insect relationship with cultivated plants • Procedure for dealing with insects • Phytophagus • Entomophagus • Insect	Insect relationship with human life	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Exploring information related to the relationship between insects and cultivated plants, procedures for dealing with insects, phytophagous, entomophages and insect pathogens 2. Identifying together phytophagous pests, entomo fagus and	Types and techniques of assessment: • Process assessment through observ	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media,	**9**	**3.5**

		Pathogens			pathogenic insects through pictures 3. Presenting to classmates the search results that are displayed in the form of power point slides 4. Conduct discussions and ask questions with classmates to discuss the material that has been conveyed by friends 5. Get confirmation and reinforcement of material from lecturers 6. Take quizzes independently 7. Get rewards for groups that get the highest discussion scores and quiz scores 8. Get assignments to compile papers and make resumes for the next meeting material that is collected online	ation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
7	Students are able to analyze the classification of Apterygota insects	Apterygota classification and insects	Classification of insects	STAD Cooperative Learning Model Method :	1. Carry out information mining related to the classification of insects and insects of the order Apterygota	Types and techniques of assessment:	Assessment criteria: • PAP Assessment indicators: • Communication skills in making	**6**	**1,2,6**

				Discussion, question and answer, lecture	2. Observing each example of the order Apterygota 3. Delivering to classmates the results of searches and observations that are displayed in the form of pictures and power point slides 4. Conduct discussions and ask questions with classmates to discuss the material that has been conveyed by friends 5. Get confirmation and reinforcement of material from lecturers 6. Take quizzes independently 7. Get rewards for groups that get the highest discussion scores and quiz scores	• Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
8	**Mid-Semester Exam**								

9-10	Students are able to analyze the classification of pterygota insects	Classification and taxonomy of pterygota insects	Pterygota Insects	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Exploring information related to insects of the order pterygota 2. Observing each example of the order pterygota 3. Delivering to classmates the results of searches and observations that are displayed in the form of pictures and power point slides 4. Conduct discussions and ask questions with classmates to discuss the material that has been conveyed by friends 5. Get confirmation and reinforcement of material from lecturers 6. Take quizzes independently 7. Get rewards for groups that get the highest discussion scores and quiz scores 8. Get assignments to compile papers and make resumes for the next meeting material that is	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the materia	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)	**11.2**	**1,2,6**

					collected online	l being discuss ed			
10	Students are able to analyze the factors that affect the life of insects	• External factors • Factor in	Factors affecting insect life	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Conduct information mining related to insect behavior and the factors that affect insect life 2. Presenting to classmates the results of extracting information displayed in power point slides 3. Conduct discussions and ask questions with classmates to discuss the material that has been conveyed by friends 4. Get confirmation and reinforcement of material from lecturers 5. Take quizzes independently 6. Get rewards for groups that get the highest discussion scores and quiz scores 7. Get assignments to compile papers and make resumes for the next meeting material that is	Types and techniqu es of assessme nt: • Proces s assess ment throug h observ ation and assign ment • Attitud e assess ment throug h observ ation • Produc t assess ment in the form of explora tion	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/respons es, quality of questions, accuracy of responses/answer s) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)	**6**	**2.6**

					collected online	results about the material being discussed			
11	Students are able to analyze insect behavior	• Behavior in insects • Insect orientation to the environment • Knowledge and memory in insects • Communication in insects	The basics of insect behavior	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Conduct information mining related to insect behavior and insect orientation to the environment 2. Presenting to classmates the results of extracting information displayed in power point slides 3. Conduct discussions and ask questions with classmates to discuss the material that has been conveyed by friends 4. Get confirmation and reinforcement of material from lecturers 5. Take quizzes independently 6. Get rewards for groups that get the highest discussion scores and quiz scores 7. Get assignments to	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation • Product assessment in	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in	**6**	**2.6**

					compile papers and make resumes for the next meeting material that is collected online	the form of exploration results about the material being discussed	collecting assignments)		
12	Students are able to analyze knowledge of memory and communication in insects	• Insect memory knowledge • Insect communication	Knowledge of insect memory and communication	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Conduct information mining related to insect behavior and insect orientation to the environment 2. Presenting to classmates the results of extracting information displayed in power point slides 3. Conduct discussions and ask questions with classmates to discuss the material that has been conveyed by friends 4. Get confirmation and reinforcement of material from lecturers 5. Take quizzes independently 6. Get rewards for groups that get the	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment through observation	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline	**6**	**2.6**

					highest discussion scores and quiz scores 7. Get assignments to compile papers and make resumes for the next meeting material that is collected online	• Product assessment in the form of exploration results about the material being discussed	(seriousness in attending lectures, punctuality in collecting assignments)		
13	Students are able to analyze insect pest control	• Control according to government regulations • Mechanical control • Control in technical culture • Physical control	• Pest control according to law • Technical culture control	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Finding environmental problems 2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting through question and answer	Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators: number of questions/responses, quality of questions,	**7**	**3.4**

						through observation • Product assessment in the form of exploration results about the material being discussed	accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
14	Students are able to analyze biological, chemical and integrated control	• Biological pest control • Chemical pest control • Integrated pest control	• Insect pest control	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Finding environmental problems 2. Analyzing environmental problems through observation and literacy of journals and sources of information 3. Discuss the results of literacy and discussion 4. Presenting results and interacting	Types and techniques of assessment: • Process assessment through observation and assignment	Assessment criteria: • PAP Assessment indicators: • Communication skills in making presentations (indicators: mastery of the material, ability to explain, ability to use media, mastery and class management) • Activity (indicators:	**8**	**3.4**

					through question and answer	• Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	number of questions/responses, quality of questions, accuracy of responses/answers) • Discipline (seriousness in attending lectures, punctuality in collecting assignments)		
15	Students are able to make a collection of insects	Insectarium collection	• Insect collection • Insectarium making	STAD Cooperative Learning Model Method : Discussion, question and answer, lecture	1. Extracting information related to making an insectarium 2. Doing the practice of making an insectarium	Types and techniques of assessment: • Process assessment through observ	Assessment criteria: • PAP Types and techniques of assessment: • Process assessment through observation and assignment • Attitude assessment	**8**	**1,2,5,6**

						ation and assignment • Attitude assessment through observation • Product assessment in the form of exploration results about the material being discussed	through observation • Performance appraisal of insectarium making practicum Assessment criteria: • Practicum (Accuracy of use of tools and materials, accuracy of implementation of work procedures, cooperation with friends, contribution to the group) • Insectarium products (tidiness, aesthetics, correct naming) • Discipline		
16	**Final Semester Exam**								

Samarinda, March 7, 2020

Sincerely yours,
Chairwoman of Biology Education Study program

Course Coordinator

Faculty of Teacher Training and Education

Dr. Hj. Herliani, M.Pd
NIP. 196709121992032002

Dr. Sonja V.T Lumowa, M.Kes
NIP. 196402091987032002

Faculty of Teacher Training and Education