	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
Protozoology	4620102156		T=2	P=0	ECTS=3.18	5	July 17, 2024

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	.....	.....	Dr. H. Sunu Kuntjoro, S.Si., M.Si.

Learning model: Project Based Learning

Program Learning Outcomes (PLO)

PLO study program that is charged to the course

Program Objectives (PO)

PLO-PO Matrix

	P.O

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

Short Course Description: This course discusses the concept of diversity of Protozoa (animal-like Protista), their morphological characteristics, classification, physiology and bioecology. Apart from that, this course also reviews the role of Protozoa in human life, and research methods. The material is delivered using a student-centered approach in practical activities and assignments are given in the form of research projects honestly and independently.

References

Main :

1. Ambarwati, Reni; Faizah, Ulfi. 2017. Buku Ajar Protozoologi. Surabaya: Unesa University Press.
2. Chiodini, PL; Moody, AH; Manser, DW. 2001. Atlas of Medical Helminthology and Protozoologi . Landon: Churchill Livingstone.
3. Grell, K.G. 1973. Protozoology . Tokyo: Toppan Company Limited.
4. Hausmann, Klaus and Hausmann, Norbert. 1995. Protozoology . New York: Thieme Medical Publishers. Inc.
5. Jahn, Theodore Louis and Jahn, Frances, Floed. 1949. How To Know The Protozoa . Dubuque, Iowa: WM. C. Brown Company Publishers.
6. Prasetyo, R. Heru. 1997. Pengantar Praktikum Protozoologi Kedokteran. Surabaya: Airlangga University Press.
7. Prasetyo, R. Heru. 2004. Atlas Berwarna Protozoologi Kedokteran. Surabaya: Airlangga University Press.

Supporters:

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Week-	Final abilities of each learning stage (Sub-PO)	Evaluation		Help Learning, Learning methods, Student Assignments, [Estimated time]		Learning materials [References]	Assessment Weight (%)
		Indicator	Criteria & Form	Offline (*offline*)	Online (*online*)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Understand the position of protozoa in classification	Explain the position of protozoa in classification	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion 2 X 50			0%

2	Understanding the reproduction and life cycle of protozoa	Explain the reproduction and life cycle of protozoa	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion 2 X 50			0%
3	Understanding the Mastigophora group	1. Explain the classification of animals belonging to the Mastigophora group along with representative examples. 2. Explain the special characteristics of animals belonging to the Mastigophora group. 3. Explain the role of animals belonging to the Mastigophora group.	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, article review 2 X 50			0%
4	Understanding the Sarcodina group	1. Explain the classification of animals belonging to the Sarcodina group along with representative examples. 2. Explain the special characteristics of animals belonging to the Sarcodina group 3. Explain the role of animals belonging to the Sarcodina group.	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, article review 2 X 50			0%
5	Understanding the Ciliophora group	1. Explain the classification of animals belonging to the Ciliophora group along with representative examples. 2. Explain the special characteristics of animals belonging to the Ciliophora group. 3. Explain the role of animals belonging to the Ciliophora group.	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, article review 2 X 50			0%
6	Understanding the Sporozoa group	1. Explain the classification of animals belonging to the Sporozoa group along with representative examples. 2. Explain the special characteristics of animals belonging to the Sporozoa group. 3. Explain the role of animals belonging to the Sporozoa group.	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, article review 2 X 50			0%

7	Understand the physiology of protozoa	Explain the physiology of protozoes	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, 2 X 50			0%
8	UTS	UTS	**Criteria:** UTS	UTS 2 X 50			0%
9	Understanding protozoan bioecology	· Explain the bioecology of protozoa	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, 2 X 50			0%
10	Understand the relationship between host and protozoan parasites	· Explain the relationship between host and parasite protozoa	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, 2 X 50			0%
11	Understanding Protozoa in the digestive tract, urogenital tract and blood vessels	· Explain protozoa in the digestive tract, urogenital tract and blood vessels	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, 2 X 50			0%
12	Design and conduct research on protozoan diversity in the surrounding environment.	1. Analyze articles about protozoan diversity in the surrounding environment. 2. Design and conduct research on protozoan diversity in the surrounding environment.	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, article review 2 X 50			0%
13	Design and conduct research on pure breeding of protozoa	1. Analyze articles about pure breeding of protozoa. 2. Design and conduct research on pure protozoa breeding that has potential for fish food cultivation entrepreneurship.	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, article review, practice of pure protozoan breeding, 2 X 50			0%
14	Present project results	Presenting the results of research on the diversity of protozoa in the surrounding environment.	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	Presentation, discussion, article review 2 X 50			0%
15	Presenting the results of a pure protozoan breeding project	Presenting the results of research on pure breeding of protozoa that have the potential to be used as fish food.	**Criteria:** Participation : Assignments : UTS : UAS = 20% : 30% : 20% : 30%	article review, discussion, presentation 2 X 50			0%
16							0%

Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
		0%

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** 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.
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.