	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
Histology*	4620102088	Animal Development Structure	**T=2**	**P=0**	**ECTS=3.18**	5	April 28, 2023

AUTHORIZATION	SP Developer	Course Cluster Coordinator	Study Program Coordinator
	Dr. Nur Ducha, S.Si M.Si	Prof. Dr. Ir. Dyah Hariani, M.Si	Dr. H. Sunu Kuntjoro, S.Si., M.Si.

Learning model	**Case Studies**	
Program Learning Outcomes (PLO)	**PLO study program which is charged to the course**	
	PLO-6	Able to apply logical, critical, systematic and innovative thinking in the context of developing or implementing science and/or technology according to their field of expertise.
	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.
	PLO-11	Able to apply transferable skills in biology to develop ecopreneurship (eco-innovation, eco-opportunity, eco-commitment)
	Program Objectives (PO)	
	PO - 1	Able to demonstrate basic knowledge about the structure of cells and tissues in the human and animal body
	PLO-PO Matrix	

P.O	PLO-6	PLO-7	PLO-11
PO-1			

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																

Short Course Description	This lecture discusses the basic principles of histology and methods of studying it, basic tissue structures in invertebrates and vertebrates (epithelial, connective, muscle and nerve tissue), tissues that make up the digestive system, tissues that make up the reproductive system, tissues that make up the respiratory system, tissues that make up the circulatory system, the tissues that make up the excretory system, the tissues that make up the endocrinological system, and are associated with the types of disorders that can occur. This course is presented theoretically, working on case study assignments and practicing observing preparations, lecture methods, discussions, observations and research article literacy.	
References	**Main :**	
	1. Geneser Finn. 2002. Atlas Berwarna Histologi. Alih Bahasa : Tambajong J. Jakarta : Binarupa Aksar 2. Mescher Anthony L. 2016. Junqueira's Basic Histology, Text and Atlas. Fourteenth edition. United State of America's : Mc Grow Hill. 3. Ducha Nur, Hariani Dyah, Budijastuti Widowati. 2020. Histologi. Surabaya : Bimantara Aluuguda Sejahtera	
	Supporters:	
Supporting lecturer	Prof. Dr. Ir. Dyah Hariani, M.Si. Dr. Widowati Budijastuti, M.Si. Dr. Nur Ducha, 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	Understand the basic principles of histology	· Conclude the meaning of histology and its scope · Differentiate between various methods of studying histology · Determine the function of the types of microscopes used in studying histology · Identify the parts of a light microscope and their function as the simplest tool for studying histology Carry out literacy articles about studying life problems with a histology approach	**Criteria:** 1.1. Practical report, literacy presentation of research articles 30 2.2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Form of Assessment** : Participatory Activities		1. Explanation of Histology Lecture Outlines and Contracts. 2. Class discussion regarding the meaning of histology and scope, 3. Class discussion regarding the various types of equipment used in studying histology and their uses. 2 x 50 minutes	**Material:** Mescher Anthony L. 2016. Junqueira's Basic Histology, Text and Atlas. Fourteenth edition. United States of America's : Mc Grow Hill. **References:** **Material:** Ducha Nur, Hariani Dyah, Budijastuti Widowati. 2020. Histology. Surabaya: Bimantara Aluuguda Sejahtera **Library:** **Material:** Articles from national and international journals relating to the microscopic structure (histology) of tissue in various organs of the animal or human body, both with treatment and without treatment for guidance in solving case studies and strengthening students' scientific literacy skills. **Library:**	5%
2	Understand the structure of epithelial tissue	· Explain the basic properties of epithelial tissue · Describe the basic shape of epithelial tissue · Identify types of intercellular links in epithelial tissue · Differentiate types of surface specialization of epithelial cells in certain organs · Identify types of epithelial tissue in certain organs · Literacy research articles related to the histology of epithelial tissue Demonstrate attitude independent and honest during group discussions and class discussions	**Criteria:** 1.1. Practical report, literacy presentation of research articles 30 2.2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Form of Assessment** : Participatory Activities		1. Applying learning using the Case Method, Cooperative Model 2. Introduction to implementing case method learning, by discussing epithelial tissue and connective tissue material that has been studied independently. Students apply critical thinking by asking questions related to the material and answering questions. 3. Students in the designated group receive case studies related to epithelial tissue and connective tissue. 4. Students are given the opportunity to ask for clarity of the case study they will study and search for literature/journal articles as a reference for solving the problems of the case being studied 2 X 50 minutes		10%

3	Understand the structure of connective tissue	1.· Compare the structure of smooth muscle tissue, striated muscle, and cardiac muscle 2.Explain the arrangement/organization of striated muscle cells, smooth muscle and cardiac muscle	**Criteria:** 1.1. Practical report, literacy presentation of research articles 30 2.2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Form of Assessment** : Participatory Activities	1.	Applying learning using the Case Method, Cooperative Model 2. Introduction to implementing case method learning, by discussing muscle tissue material that has been studied independently. Students apply critical thinking by asking questions related to muscle tissue material and answering questions. 3. Students in the designated group receive a case study related to muscle tissue. 4. Students are given the opportunity to ask for clarity of the case study related to muscle tissue that will be studied and search for literature/journal articles as a reference for solving the problems of the case being studied 2 X 50 minutes		5%
4	Understand the structure of muscle tissue	1.· Identify the structure of various types of neuron cells 2.Distinguish between various types of neuronal cells and glial cells	**Criteria:** 1.1. Practical report, literacy presentation of research articles 30 2.2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Form of Assessment** : Participatory Activities	Discussions, demonstrations, practicums, research article literacy	1. Applying learning using the Case Method, Cooperative Model 2. Introduction to implementing case method learning, by discussing neural network material that has been studied independently. Students apply critical thinking by asking questions related to neural network material and answering questions. 3. Students in the designated group receive case studies related to neural networks. 4. Students are given the opportunity to ask for clarity of case studies related to neural networks that will be studied and search for libraries/journal articles as a reference for solving problems in the cases studied 2 X 50 minutes		10%
5	Understand the structure of neural networks	1.· Identify the structure of nerve cells / neurons and glial cells · 2.Comparing sensory, motor and connecting nerve cells	**Criteria:** 1.1. Practical report, literacy presentation of research articles 30 2.2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Form of Assessment** : Project Results Assessment / Product Assessment		1. Students present the results of solving case studies on epithelial, connective, muscle and nerve tissue. 2. Students discuss together the results of solving case studies on epithelial, connective, muscle and nerve tissue. 3. Students conclude from the activity of solving case studies on basic tissue. 4. Students provide suggestions/solutions for repairing/recovering damage to the basic network 2 X 50 minutes		10%

6	Understand the structure of the tissues that make up the circulatory system	1. · Explain the basic structure of blood vessels 2. Compare the structure of various types of blood vessels	**Criteria:** 1. 1. Practical report, literacy presentation of research articles 30 2. 2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3. 3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4. 4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment		Discussion, demonstration, article literacy 2 X 50 minutes		5%
7	Understand the network structure that makes up the excretory system	1. · Identify the regions of the kidney · Explain the parts of the nephron · Identify the parts of the glomerulus · · Identify the parts of the ureter (theory and practical tests) · Determine the urethra based on its structural characteristics · Determine the parts of the skin · Determine the cells found in the epidermis layer · Identify the epidermis part of the skin (theory and practical test) · Explain the parts found in the dermis layer · Identify the dermis layer of the skin (theoretical and practical test) · Literate research articles related to the histology of tissue in the system excretion 2. Explain the parts of the nephron 3. Identify the parts of the glomerulus 4. Compare renal tubules	**Criteria:** 1. 1. Practical report, literacy presentation of research articles 30 2. 2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3. 3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4. 4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment		Discussion, demonstration, article literacy 2 X 50 minutes		10%
8	UTS	Skilled in applying the concepts and principles of Histology responsibly	**Criteria:** 1. 1. Practical report, literacy presentation of research articles 30 2. 2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3. 3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4. 4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Form of Assessment** : Test		Test 2 X 50 minutes		10%

9	Understand the structure of the tissues that make up the male reproductive system	1. · Identify the parts of the testicles (theoretical and practical tests) · Explain the structure of the seminiferous tubules · Identify the types of cells that make up the seminiferous tubules (theoretical and practical tests) · Determine the types of cells in the testicles based on their structural characteristics and function · Explain the special characteristics of the epididymis based on structure · Identifying the epididymal duct (theory and practical tests) · Determining the urinary bladder based on its structural characteristics · Identifying the parts of the penis · Reading research articles related to the histology of tissue in the male reproductive system · Demonstrating an independent and honest attitude during group discussions and 2. Identify the parts of the seminiferous tubules 3. Compare the structure of the male reproductive tract 4. Identify the parts of the ovary 5. Compare different types of ovarian follicles 6. Compare the structure of the female reproductive tract	**Criteria:** 1. 1. Practical report, literacy presentation of research articles 30 2. 2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3. 3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4. 4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment		Applying learning using the Case Method, Cooperative Model 2. Introduction to implementing case method learning, by discussing the tissue material that makes up the male and female reproductive systems which has been studied independently. Students apply critical thinking by asking questions related to the material and answering questions. 3. Students receive a case study related to the tissues that make up the male and female reproductive systems. 4. Students are given the opportunity to ask for clarity on the case study they will be studying and search for literature/journal articles as a reference for solving the problems of the case being studied 2 X 50 minutes	**Material:** 5 **Bibliography:**	0%
10	Understand the structure of the tissues that make up the female reproductive system	1. · Present the results of problem solving from case studies related to tissues in the male and female reproductive systems. 2. Create a concept map of mechanisms of damage/disruption to tissue structures in the male and female reproductive systems.	**Criteria:** 1. 1. Practical report, literacy presentation of research articles 30 2. 2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3. 3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4. 4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Form of Assessment** : Project Results Assessment / Product Assessment	Discussions, demonstrations, practicums, article literacy	1. Students present the results of solving case studies on male and female reproductive system networks. 2. Students discuss together the results of solving case studies on male and female reproductive system networks. 3. Students conclude from the activity of solving case studies on male and female reproductive system networks. 4. Students provide suggestions/solutions for repairing/recovering damage to the tissues of the male and female reproductive systems. 2 X 50 minutes		5%

11	Understand the structure of bone tissue	1.· Identify the components that make up cartilage · Identify hyaline cartilage based on its structural characteristics (theoretical and practical tests) · Determine the distribution of hyaline cartilage in the human and animal body · Identify elastic cartilage based on its structural characteristics (theoretical and practical tests) · Determine the distribution of bones elastic cartilage in the human and animal body · Identifying fibrous cartilage based on its structural characteristics (theoretical and practical tests) · Determining the distribution of fibrous cartilage in the human and animal body · Determining the components of hard bone · Identifying the parts of hard bone (practical test) · Explain the structure of hard bones · Read research articles related to the histology of bone tissue 2.Compare the structure of different types of cartilage	**Criteria:** 1.1. Practical report, literacy presentation of research articles 30 2.2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment		Discussion, demonstration, article literacy 2 X 50 minutes		10%
12	Understand the structure of the tissues that make up the digestive system	1.· Summarize the general structure of the digestive tract 2.Compare the structures of various digestive tracts 3.Identify the various types of tongue papillae 4.Explain the structure of taste buds	**Criteria:** 1.1. Practical report, literacy presentation of research articles 30 2.2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment		Discussion, demonstration, article literacy 2 X 50 minutes		5%

13	Understand the structure of the tissues that make up the respiratory system	1. · Explain the basic structure of the respiratory tract · Identify the larynx based on its structure · Summarize the basic structure of the trachea · Identify the parts of the trachea · Identify the parts of the bronchus · Summarize the basic structure of the bronchi · Summarize the basic structure of the bronchioles · Identify the parts of the bronchus · Summarize the structure base of the alveolus · Identify the parts of the alveolus · Literate research articles related to the histology of the respiratory system · Demonstrate an independent and honest attitude during group discussions and 2. Compare the microscopic structures of the respiratory tract 3. Identify the parts of the lungs 4. Identify the parts of the endocrine organs	**Criteria:** 1. 1. Practical report, literacy presentation of research articles 30 2. 2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3. 3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4. 4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Form of Assessment** : Project Results Assessment / Product Assessment		1. Applying learning using the Case Method, Cooperative Model 2. Introduction to implementing case method learning, by discussing tissue material in the respiratory and endocrine systems that has been studied independently. Students apply critical thinking by asking questions related to the material and answering questions. 3. Students in the designated group receive case studies related to tissues in the respiratory and endocrine systems. 4. Students are given the opportunity to ask for clarity of the case study they will study and search for literature/journal articles as a reference for solving the problems of the case being studied 2 X 50 minutes		5%
14	Understand the structure of the tissues that make up the endocrine system	1. Analyzing tissue in the digestive system of invertebrate animals. 2. Identify networks in the transportation system of invertebrate animals 3. Explain the structure of muscle tissue in invertebrate animals 4. Identify the tissues that make up the endocrine system in invertebrate animals	**Criteria:** 1. 1. Practical report, literacy presentation of research articles 30 2. 2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3. 3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4. 4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment		1. Applying learning using the Case Method, Cooperative Model 2. Introduction to implementing case method learning, by discussing tissue material in the invertebrate body. Students apply critical thinking by asking questions related to the material and answering questions. 3. Students in the designated group receive case studies related to tissues in the invertebrate body. 4. Students are given the opportunity to ask for clarity of the case study they will study and search for literature/journal articles as a reference for solving the problems of the case being studied 2 X 50 minutes		5%

15	Analyze the structure of skeletal system tissue, digestive system tissue, respiratory system tissue, tissue in invertebrate bodies	1.1. · Present the results of problem solving from case studies related to tissues in the skeletal system, digestive system, respiratory system in vertebrate bodies, tissues in invertebrate bodies 2.2. Create a concept map of damage/disruption mechanisms to the basic network structure	**Criteria:** 1.1. Practical report, literacy presentation of research articles 30 2.2. Activeness in discussions and presentations, including participation scores, pre-test scores of 20 3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20 4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30 **Forms of Assessment** : Participatory Activities, Project Results Assessment / Product Assessment		1. Students present the results of solving case studies on organ tissue in the respiratory and endocrine systems of vertebrate animals, as well as tissue in the body of invertebrate muscles and nerves. 2. Students discuss together the results of solving case studies on tissue, organs, respiratory and endocrine systems of vertebrate animals, as well as tissue in the body of invertebrate muscles and nerves. 3. Students conclude from the case study solving activities. 4. Students provide suggestions/solutions for repairing/recovering damage to the tissues of the respiratory and endocrine systems of vertebrate animals, as well as tissues in the bodies of invertebrates, muscles and nerves. 2 X 50 minutes	**Material:** Tissues in the invertebrate digestive system, tissues in the invertebrate transportation system, basic tissues in the invertebrate body. **References:** *Ducha Nur, Hariani Dyah, Budijastuti Widowati. 2020. Histology. Surabaya: Bimantara Aluuguda Sejahtera*	5%
16			**Form of Assessment** : Test		TEST	**Material:** Tissues in the male and female reproductive systems, tissues in the skeletal system, tissues in the digestive system, tissues in the invertebrate body. **References:** *Ducha Nur, Hariani Dyah, Budijastuti Widowati. 2020. Histology. Surabaya: Bimantara Aluuguda Sejahtera*	0%

Evaluation Percentage Recap: Case Study

No	Evaluation	Percentage
1.	Participatory Activities	50%
2.	Project Results Assessment / Product Assessment	40%
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** 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.