



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

Document Code

**SEMESTER LEARNING PLAN**

<b>Courses</b>	<b>CODE</b>	<b>Course Family</b>	<b>Credit Weight</b>	<b>SEMESTER</b>	<b>Compilation Date</b>		
Histology	8420502113		T=2 P=0 ECTS=3.18	6	July 18, 2024		
<b>AUTHORIZATION</b>	<b>SP Developer</b>		<b>Course Cluster Coordinator</b>		<b>Study Program Coordinator</b>		
	.....		.....		Dr. Rinie Pratiwi Puspitawati, M.Si.		
<b>Learning model</b>	Project Based Learning						
<b>Program Learning Outcomes (PLO)</b>	PLO study program that is charged to the course						
	Program Objectives (PO)						
	PLO-PO Matrix						
		P.O					
<b>Short Course Description</b>	This course examines the shape of organs and the topography of each organ that makes up the body system of invertebrate animals, as well as the organs that make up the body system of vertebrate animals which include the skeletal, muscular, integumentary, digestive, respiratory, circulatory, endocrine, uroepotic, reproductive systems. , nerves and senses. This course is delivered theoretically and practically using lecture, discussion, observation and article literacy methods.						
	<p><b>References</b> <b>Main :</b></p> <ol style="list-style-type: none"> <li>1. Arey, Leslie Brainerd. 1961. Developmental Anatomy : A Textbook and Laboratory manual of Embriology. Philadelphia. 6 th ed. . W.B.Saunders Co</li> <li>2. Hildebrand, Milton dan George Goslow. 2001. Analysis of Vertebrate Structure. 5 th ed New York : John Wiley &amp; Sons. Inc.</li> <li>3. Kardong V Kenneth. 2006. Vertebrate: Comparative Anatomy, Function, Evolution, New York : Mc Graw Hill.</li> <li>4. Kent. George.C., 1987. Comperative Anatomy of the Vertebrata. Toronto : Times Mirror/Mosby.</li> <li>5. Putz, R and Pabst, R. 1995. Sobotta Atlas Anatomi Manusia. Bagian 2. Alih bahasa Indriati. Editor Joko Suyono. Jakarta. Edisi 20. EGC.</li> </ol> <p><b>Supporters:</b></p>						
<b>Supporting lecturer</b>	Prof. Dr. Ir. Dyah Hariani, M.Si. Dr. Widowati Budijastuti, M.Si. Dr. Nur Duchu, S.Si., M.Si.						
<b>Week-</b>	<b>Final abilities of each learning stage (Sub-PO)</b>	<b>Evaluation</b>		<b>Help Learning, Learning methods, Student Assignments, [ Estimated time]</b>		<b>Learning materials [ References ]</b>	<b>Assessment Weight (%)</b>
		<b>Indicator</b>	<b>Criteria &amp; Form</b>	<b>Offline ( offline )</b>	<b>Online ( online )</b>		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)

1	Understand the basic principles of histology	<ul style="list-style-type: none"> <li>· Conclude the meaning of histology and its scope</li> <li>· Differentiate between various methods of studying histology</li> <li>· Determine the function of the types of microscopes used in studying histology</li> <li>· Identify the parts of a light microscope and their function as the simplest tool for studying histology</li> <li>· Carry out literacy articles on the study of life problems with a histology approach</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, research article literacy 2 X 50			0%
2	Understand the structure of epithelial tissue	<ul style="list-style-type: none"> <li>· Explain the basic properties of epithelial tissue</li> <li>· Describe the basic shape of epithelial tissue</li> <li>· Identify types of intercellular links in epithelial tissue</li> <li>· Differentiate types of surface specialization of epithelial cells in certain organs</li> <li>· Identify types of epithelial tissue in certain organs</li> <li>· Literate research articles related to the histology of epithelial tissue</li> <li>· Demonstrate independent and honest attitude during group discussions and class discussions</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practice, article literacy 2 X 50			0%
3	Understand the structure of connective tissue	<ul style="list-style-type: none"> <li>· Write down the components that make up connective tissue</li> <li>· Identify the types of cells in connective tissue (written test and practice/performance)</li> <li>· Identify the types of fibers in connective tissue (written test and practice/performance)</li> <li>· Infer the nature of the extracellular matrix components in connective tissue</li> <li>· Identify the types of connective tissue based on structural characteristics and constituent components (practice/performance tests)</li> <li>· Literacy of research articles related to connective tissue histology</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practicum, article literacy 2 X 50			0%

4	Understand the structure of muscle tissue	<ul style="list-style-type: none"> <li>· Explain the structure/organization of striated muscle tissue</li> <li>· Explain the structure of myofibrils in striated muscle tissue</li> <li>· Explain the structure of the connective tissue that makes up striated muscle</li> <li>· Identify striated muscle tissue (practice/performance tests)</li> <li>· Conclude the special structure of heart muscle according to its function</li> <li>· Identify muscle tissue heart (practice/performance test)</li> <li>· Conclude the special structure of smooth muscle according to its function</li> <li>· Identify smooth muscle tissue in various organs (practice/performance test)</li> <li>· Determine the location of smooth muscle tissue</li> <li>· Distinguish striated muscle tissue, cardiac muscle and smooth muscle</li> <li>· Carry out article literacy research related to the histology of muscle tissue</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practicum, research article literacy 2 X 50			0%
5	Understand the structure of neural networks	<ul style="list-style-type: none"> <li>· Describe the structure of nerve cells / neurons</li> <li>· Identify the types of neuron cells (theory and practice)</li> <li>· Identify the parts of neurons (practice)</li> <li>· Determine the types of glial cells based on their characteristics</li> <li>· Identify the parts of the nervous tissue in the cerebrum</li> <li>· Describe the basic structure of the network in the cerebrum</li> <li>· Determining the cerebellum based on its structural characteristics</li> <li>· Identifying the cerebellum based on its structural characteristics</li> <li>· Determining the spinal cord based on its structural characteristics</li> <li>· Determining peripheral nerve tissue</li> <li>· Identifying peripheral nerve tissue</li> <li>· Presenting the results of literacy research articles related to the histology of epithelial, connective, muscle and nerve tissue</li> <li>· Able to make informed decisions appropriate in literacy of research articles to be presented</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports, research article literacy presentations 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practicum, article literacy 2 X 50			0%

6	Understand the structure of the tissues that make up the circulatory system	<ul style="list-style-type: none"> <li>- Determine the components that make up the blood vessel system</li> <li>- Explain the types of layers that make up blood vessels</li> <li>- Identify the parts of arterial blood vessels</li> <li>- Identify the types of capillary blood vessels (practice test)</li> <li>- Identify the parts of capillary blood vessels based on their structural characteristics</li> <li>- Identify the vessels capillary blood (practice test)</li> <li>- Identifying parts of veins</li> <li>- Identifying veins (practice test)</li> <li>- Literacy of research articles related to the histology of blood vessel tissue, heart</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practicum, article literacy 2 X 50			0%
7	Understand the network structure that makes up the excretory system	<ul style="list-style-type: none"> <li>- Identify the regions of the kidney</li> <li>- Explain the parts of the nephron</li> <li>- Identify the parts of the glomerulus</li> <li>- Identify the glomerulus (practice test)</li> <li>- Identify the proximal convoluted tubule</li> <li>- Identify the distal convoluted tubule</li> <li>- Explain the structure of the collecting tubule</li> <li>- Explain the basic structure of the ureter</li> <li>- Identify parts of the ureter (theory and practical tests)</li> <li>- Determining the urethra based on its structural characteristics</li> <li>- Determining the parts of the skin</li> <li>- Determining the cells found in the epidermis layer</li> <li>- Identifying the epidermis of the skin (theory and practical tests)</li> <li>- Explaining the parts found in the dermis layer</li> <li>- Identifying the dermis layer of the skin (theory and practical tests)</li> <li>- Literacy of research articles related to the histology of tissue in the excretory system</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practicum, article literacy 2 X 50			0%
8	UTS	Skilled in applying the concepts and principles of Histology responsibly	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Strategy/method obtained at meetings 1-7 2 X 50			0%

9	Understand the structure of the tissues that make up the male reproductive system	<ul style="list-style-type: none"> <li>- 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</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practice, article literacy 2 X 50			0%
10	Understand the structure of the tissues that make up the female reproductive system	<ul style="list-style-type: none"> <li>- Identify the parts of the ovary - Identify the types of follicles in the ovary (theoretical and practical tests) - Explain the differences between de graff follicles, corpus luteum and corpus albicans - Write down the regional divisions of the oviduct - Explain the basic structure of the oviduct - Conclude the basic structure of the uterus - Determine the type layers of the uterine wall based on their structural characteristics - Summarizing the structure of the vagina - Presenting the results of literacy research articles related to tissue histology in the circulatory system, excretion, female reproduction, male reproduction - Able to make the right decisions in conducting research article literacy to be presented</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports, research article literacy presentations 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practicum, article literacy 2 X 50			0%

11	Understand the structure of bone tissue	<ul style="list-style-type: none"> <li>- Differentiate the components that make up cartilage</li> <li>- Identify hyaline cartilage based on its structural characteristics (theoretical and practical tests)</li> <li>- Determine the distribution of hyaline cartilage in the human and animal body</li> <li>- Identify elastic cartilage based on its structural characteristics (theoretical and practical tests)</li> <li>- Determine the distribution of bones elastic cartilage in the human and animal body</li> <li>- Identifying fibrous cartilage based on its structural characteristics (theoretical and practical tests)</li> <li>- Determining the distribution of fibrous cartilage in the human and animal body</li> <li>- Determining the components of hard bone</li> <li>- Identifying the parts of hard bone (practical test)</li> <li>- Explain the structure of hard bones</li> <li>- Read research articles related to the histology of bone tissue</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practicum, article literacy 2 X 50		0%
12	Understand the structure of the tissues that make up the digestive system	<ul style="list-style-type: none"> <li>- Summarize the general structure of the digestive tract</li> <li>- Identify the parts of the esophagus (theory and practical tests)</li> <li>- Identify the parts of the stomach (theoretical and practical tests)</li> <li>- Identify the parts of the small intestine (theoretical and practical tests)</li> <li>- Explain the general structure from the duodenum, jejunum, ileum</li> <li>- Explain the main characteristics of the structure of the large intestine</li> <li>- Identify the parts of the large intestine</li> <li>- Explain the main characteristics of the structure of the large intestine</li> <li>- Identify the parts of the large intestine</li> <li>- Distinguish the histological structure of the esophagus, stomach, small intestine, large intestine, rectum</li> <li>- Identifying various types of tongue papillae (theory and practical tests)</li> <li>- Describing the structure of taste buds</li> <li>- Inferring the basic structure of the salivary glands</li> <li>- Reading research articles related to the histology of bone tissue</li> </ul>	<p><b>Criteria:</b></p> <ol style="list-style-type: none"> <li>1.1. Papers, practical activity reports 30</li> <li>2.2. Activeness in discussions and presentations, including a participation score of 20</li> <li>3.3. UTS questions are material from the 1st to 7th meeting, UTS value is 20</li> <li>4.4. UAS questions are material from the 9th to 16th meeting, UAS score is 30</li> </ol>	Discussion, demonstration, practicum, article literacy 2 X 50		0%

13	Understand the structure of the tissues that make up the respiratory system	<ul style="list-style-type: none"> <li>· Differentiate the types of respiratory epithelial cells</li> <li>· Identify the larynx based on its structure</li> <li>· Deduce the basic structure of the trachea</li> <li>· Identify the parts of the trachea</li> <li>· Identify the parts of the bronchus</li> <li>· Summarize the basic structure of the bronchi</li> <li>· Summarize the basic structure of the bronchioles</li> <li>· Identify the parts of the bronchus</li> <li>· Summarize the structure base of the alveolus</li> <li>· Identify the parts of the alveolus</li> <li>· Literate research articles related to the histology of the respiratory system</li> <li>· Demonstrate an independent and honest attitude during group discussions and</li> </ul>	<b>Criteria:</b> 1.1. Papers, practical activity reports 30 2.2. Activeness in discussions and presentations, including a participation score 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	Discussion, demonstration, practicum, article literacy 2 X 50			0%
14	Understand the structure of the tissues that make up the endocrine system	<ul style="list-style-type: none"> <li>· Determine the parts of the pancreatic gland</li> <li>· Identify the types of cells that make up the pancreatic gland (theory and practical/performance tests)</li> <li>· Determine the parts of the liver</li> <li>· Identify the types of cells that make up the liver (theory and practical tests)</li> <li>· Determine the parts that make up the pancreas composing the pituitary gland</li> <li>· Identifying the parts that make up the pituitary gland (theory and practical tests)</li> <li>· Determining the parts of the adrenal gland based on their structure</li> <li>· Literacy of research articles related to the histology of the endocrine system</li> </ul>	<b>Criteria:</b> 1.1. Papers, practical activity reports 30 2.2. Activeness in discussions and presentations, including a participation score 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	Discussion, demonstration, practicum, research article literacy 2 X 50			0%
15	Understanding tissue structure in invertebrates	<ul style="list-style-type: none"> <li>· Identify the tissues in the digestive system, one example of an invertebrate animal</li> <li>· Identify the tissues in the heart, one example of an invertebrate animal</li> <li>· Identify muscle tissue, one example of an invertebrate animal</li> <li>· Identify the tissues in the endocrine system, one example of an invertebrate animal</li> <li>· Present the results</li> <li>· Literacy of research articles related to the histology of the respiratory system, digestive system, bones and body systems of invertebrate animals</li> <li>· Able to make the right decisions in conducting research article literacy for presentation</li> </ul>	<b>Criteria:</b> 1.1. Papers, practical activity reports, research article literacy presentations 30 2.2. Activeness in discussions and presentations, including a participation score 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	Discussion, demonstration, practicum, article literacy 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.