



**Universitas Negeri Surabaya  
Faculty of Sports and Health Sciences  
Bachelor of Sports Science 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>																																	
<b>Biology</b>	8920102018		T=2 P=0 ECTS=3.18	1	July 17, 2024																																	
<b>AUTHORIZATION</b>	<b>SP Developer</b>		<b>Course Cluster Coordinator</b>	<b>Study Program Coordinator</b>																																		
	.....		.....	Dr. Heri Wahyudi, S.Or., M.Pd.																																		
<b>Learning model</b>	Case Studies																																					
<b>Program Learning Outcomes (PLO)</b>	PLO study program that is charged to the course																																					
	Program Objectives (PO)																																					
	PLO-PO Matrix																																					
		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 100px; height: 30px;">P.O</td> </tr> </table>					P.O																															
P.O																																						
	PO Matrix at the end of each learning stage (Sub-PO)																																					
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td rowspan="2" style="width: 50px; height: 30px;">P.O</td> <td colspan="16" style="text-align: center;">Week</td> </tr> <tr> <td style="width: 20px;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> <td style="width: 20px;">5</td> <td style="width: 20px;">6</td> <td style="width: 20px;">7</td> <td style="width: 20px;">8</td> <td style="width: 20px;">9</td> <td style="width: 20px;">10</td> <td style="width: 20px;">11</td> <td style="width: 20px;">12</td> <td style="width: 20px;">13</td> <td style="width: 20px;">14</td> <td style="width: 20px;">15</td> <td style="width: 20px;">16</td> </tr> </table>					P.O	Week																1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P.O	Week																																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16																						
<b>Short Course Description</b>	Mastering the basic concepts of living things: consisting of life, life molecules, cells, cell membranes and membrane receptors, cell division, genetics, basic tissues, enzymes and several systems in the body																																					
<b>References</b>	<b>Main :</b>																																					
	<ol style="list-style-type: none"> <li>1. Campbell, N.A. and J.B. Reece. 2008. Biology. 8th edition. Pearson Benjamin Cummings.</li> <li>2. Kimball J.W., 1989, Biologi, Jakarta, Airlangga, Ed.5 (Diterjemahkan oleh Tjirosomo S dan Sugiri N) Jilid 1 dan 2</li> <li>3. Bresnick S. 2003. High-Yield Biology . Philadelphia USA (Diterjemahkan oleh Herlina Y dan Beatricia I)</li> <li>4. Nugroho L.H. dan Sumardi I., 2004, Biologi Dasar, Jakarta, Penebar Swadaya, Ed. 1.</li> <li>5. Sherwood L. 2004. Human Physiology From Cells to System. 2nd ed. USA : Thomson Learning Inc.</li> <li>6. Suryo. 1994. Genetika. Yogyakarta : Gajah Mada Univ. Press Ed. 6.</li> </ol>																																					
	<b>Supporters:</b>																																					
<b>Supporting lecturer</b>	Dr. Dita Yuliastrid, S.Si., M.Kes. Nanda Rimawati, S.K.M., M.K.M.																																					
<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 importance of studying Biology, Basic Scientific Methods and the characteristics of living things	<ol style="list-style-type: none"> <li>1.Explain the importance of studying biology</li> <li>2.Explain the characteristics of living things</li> <li>3.Explain the concept and use of scientific methods</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Lectures, discussions and practice questions 2 X 50			0%
2	Understand the composition and structure of living things and the molecules that form life	<ul style="list-style-type: none"> <li>▪ Explain water as an element of life</li> <li>▪ Explain carbon as the basic ingredient of organic compounds</li> <li>▪ Explain the main macromolecules in living systems (carbohydrates, fats, proteins and nucleic acids)</li> </ul>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Lectures, discussions and practice questions 2 X 50			0%
3	Understand the composition and structure of living things and the molecules that form life	<ol style="list-style-type: none"> <li>1.Explain the composition of living matter</li> <li>2.Explain the characteristics, structure and function of carbohydrates, fats, proteins and nucleic acids</li> <li>3.Mention sources of carbohydrates, fats and proteins</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Lectures, discussions and practice questions 2 X 50			0%
4	Understand cell theory and the function of cells as the smallest units that make up living things	<ol style="list-style-type: none"> <li>1.Name and explain the structure and function of cell organelles</li> <li>2.Explain the differences between eukaryotic and prokaryotic cells</li> <li>3.Explain the difference between living cells and dead cells</li> <li>4.Explain the differences between plant cells and animal cells by stating their characteristics</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Lectures, discussions and practice questions 2 X 50			0%

5	Understand how to use a microscope and the difference between live cells and dead cells; animal cells and plant cells	<ol style="list-style-type: none"> <li>1.Explain the parts of a light microscope and its working principles</li> <li>2.Draw and explain the difference between living cells and dead cells</li> <li>3.Draw and explain the differences between plant cells and animal cells by writing their characteristics</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Practical and practice questions 2 X 50			0%
6	Understand the process of cell division both by mitosis and meiosis	<ol style="list-style-type: none"> <li>1.Explain the genetic continuity of cells</li> <li>2.Explain the differences and characteristics of Mitosis, Meiosis and Amitosis</li> <li>3.Explain the differences between sexual and asexual reproduction with examples in living things</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Lectures, discussions and practice questions 2 X 50			0%
7	Understand the concepts of plasma membrane, membrane receptors, plasma membrane transport and membrane potential	<ol style="list-style-type: none"> <li>1.Explain the structure and function of the plasma membrane</li> <li>2.Explain the function of membrane receptors</li> <li>3.Explain membrane transport (diffusion, osmosis, active and passive transport)</li> <li>4.Explain the function of membrane potential</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Lectures, discussions and questions and answers 2 X 50			0%
8	MIDTERM EXAM			2 X 50			0%
9	Understand Mendel's theory and the meaning of genes and chromosomes	<ol style="list-style-type: none"> <li>1.Explaining Mendel's Laws I and II</li> <li>2.Explain the difference between genes and chromosomes</li> <li>3.Explain heredity in humans</li> <li>4.Explain the characteristics of abnormalities in sex chromosomes</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Lectures, discussions and practice questions 2 X 50			0%

10	Understand how to determine blood type	<ol style="list-style-type: none"> <li>1.Able to identify ABO blood group</li> <li>2.Interpreting the antigens that people have based on their blood type</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Practical and practice questions 2 X 50			0%
11	Understand the concept of tissue as a constituent of organs	<ol style="list-style-type: none"> <li>1.Explain the characteristics of epithelial tissue</li> <li>2.Explain the characteristics of connective tissue</li> <li>3.Explain the characteristics of muscle tissue</li> <li>4.Explain the characteristics of neural networks</li> </ol>	<b>Criteria:</b> Lecturers provide assessments of student participation (presence, activeness and behavior) in learning Lecturers provide assessments of assignments given to students	Lectures, discussions and practice questions 2 X 50			0%
12	Understand the concept of enzymes, types and functions of digestive enzymes	<ol style="list-style-type: none"> <li>1.Explain the structure of enzymes</li> <li>2.Explain the characteristics of enzymes</li> <li>3.Explain how enzymes work</li> <li>4.Explain the factors that influence the work of enzymes</li> <li>5.Explain the types and functions of digestive enzymes</li> </ol>	<b>Criteria:</b> The lecturer provides an assessment of student participation (presence, activeness and behavior) in learning. The lecturer provides an assessment of the assignments given to students	Lectures, discussions and practice questions 2 X 50			0%
13	Understand how the ptyalin enzyme works and the factors that influence enzyme activity	<ol style="list-style-type: none"> <li>1.Explain the factors that influence the work of enzymes</li> <li>2.Able to prove the effect of temperature on enzyme activity</li> </ol>	<b>Criteria:</b> The lecturer provides an assessment of student participation (presence, activeness and behavior) in learning. The lecturer provides an assessment of the assignments given to students	Practical and practice questions 2 X 50			0%
14	Understand the concept of the excretory system	<ol style="list-style-type: none"> <li>1.Explain the anatomical structure of the kidney</li> <li>2.Explain the function of the kidney</li> <li>3.Know the substances that can/should not be in urine</li> <li>4.Explain the formation of urine in the body</li> <li>5.Explain the micturition process</li> </ol>	<b>Criteria:</b> The lecturer provides an assessment of student participation (presence, activeness and behavior) in learning. The lecturer provides an assessment of the assignments given to students	Lectures, discussions and practice questions 2 X 50			0%

15	Understand the substances contained in urine	Identify the characteristics of healthy urine	<b>Criteria:</b> Assessment of written tests in peer teaching and practicum is considered an assignment, the scores are averaged, then given weights (3)	Practical and practice questions 2 X 50			0%
16							0%

**Evaluation Percentage Recap: Case Study**

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.**