



**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>ENVIRONMENTAL PHYSICAL AND TRAINING METHODS</b>	8920102043		T=1   P=1   ECTS=3.18	4	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>	<b>Project Based Learning</b>																
<b>Program Learning Outcomes (PLO)</b>	<b>PLO study program that is charged to the course</b>																
	<b>Program Objectives (PO)</b>																
	<b>PLO-PO Matrix</b>																
		P.O															
	<b>PO Matrix at the end of each learning stage (Sub-PO)</b>																
	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 study of basic concepts of human body function when carrying out sports activities and related to environmental changes which include: basic concepts of thermoregulation, heat adaptation, hydration strategies for training, exposure to cold air, breath-hold diving, hyperbaric physiology, physiology of acute hypoxia, altitude physiology, training at altitude, training in polluted environments, chronobiology, cross-adaptation and sex differences to environmental changes. Lectures are conducted to measure the achievement of learning competencies using a problem based learning approach, discussions, questions and answers, assignments. The problem-based learning approach requires students to be able to discuss solving problems and present in groups and prepare reports well. Assessment is carried out by performance, written tests and portfolios.																
<b>References</b>	<b>Main :</b>																
	<ol style="list-style-type: none"> <li>1. Costill, W. L. K. J. H. W. D. L. 2012. Physiology of Sport and Exercise (Amy N. Tocco (ed.); 5th ed.). Human Kinetics Publishers.</li> <li>2. Pollock, N. W. 2021. Advanced Environmental Exercise Physiology, 2nd edition. In Wilderness &amp; Environmental Medicine (Vol. 32, Issue 3). <a href="https://doi.org/10.1016/j.wem.2021.04.006">https://doi.org/10.1016/j.wem.2021.04.006</a></li> <li>3. Reilly, T. 2010. Ergonomics in sport and physical activity: enhancing performance and improving safety. Human Kinetics Publishers.</li> </ol>																
	<b>Supporters:</b>																
<b>Supporting lecturer</b>	Dr. Dita Yuliastrid, S.Si., M.Kes. Indra Himawan Susanto, S.Or., M.Kes. dr. Ananda Perwira Bakti, M.Kes. Yetty Septiani Mustar, S.KM., M.P.H.																
<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>												
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>	<b>(8)</b>										

1	Able to analyze the basic concepts of Thermoregulation	Explain the basic concepts of thermoregulation Explain body heat transfer including: conduction, convection, radiation and evaporation Explain thermoregulatory control Explain the mechanism of hyperthermia	<b>Criteria:</b> Participation during lectures and peer teaching is carried out through observation (weight 2). Assessment of written tests in peer teaching is considered an assignment, the scores are averaged, then given a weight (3)	Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] Student assignment Independent task to search for literature related to the basic concept of 2 X 50 Thermoregulation			0%
2	Able to explain heat adaptation and heat therapy	2.1 Explain the concept of adaptation to the environment, including: Adaptation, acclimation, Acclimatization, Habituation 2.2 Explain heat adaptation 2.3 Explain heat disorders including: heat cramps, heat exhaustion, heat stroke 2.4 Explain heat therapy		Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] Student assignment Independent task to search for literature related to heat adaptation and heat therapy 2 X 50			0%
3	Able to analyze hydration strategies for training	3.1. Explain hydration terminology 3.2. Explain the impact of fluid balance on OR performance 3.3. Explain dehydration and hyponatremia 3.4. Explaining Workout Hydration Strategies		Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer [TM : 1 (2x50')] 2 X 50			0%
4	Able to analyze exposure to cold air	4.1. Explaining hypothermia 4.2. Explain the physiological response to cold exposure: Shivering Thermogenesis and Nonshivering Thermogenesis 4.3. Explain exercise in exposure to cold air 4.4 Explain cold injury to the extremities		Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer 2 X 50			0%
5	Able to understand cold water immersion	5.1 Explain accidental immersion in cold water 5.2 Explain the phases that occur when the body is immersed in cold water: - Immersion and cold shock - Muscle failure - Hypothermia - Postrescue Collapse		Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer 2 X 50			0%
6	Able to explain breath holding (apnea) diving	6.1. Explaining the Discipline of Apnea Diving 6.2. Explain static and dynamic apnea Explain apnea diving training		Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer 2 X 50			0%

7	Able to analyze diving and hyperbaric physiology	7.1. Explain the diving system 7.2. Explain decompression sickness 7.3. Explains inert gas narcosis Explains saturation diving		Learning Form: Face-to-face lecture Learning Method: Lecture, discussion and question and answer 2 X 50			0%
8							0%
9							0%
10							0%
11							0%
12							0%
13							0%
14							0%
15							0%
16							0%

#### Evaluation Percentage Recap: Project Based Learning

No	Evaluation	Percentage
		0%

#### Notes

- 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.
- 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.
- 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.
- 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.
- Indicators for assessing** abilities in the process and student learning outcomes are specific and measurable statements that identify the abilities or performance of student learning outcomes accompanied by evidence.
- 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.
- Forms of assessment:** test and non-test.
- 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.
- 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.
- Learning materials** are details or descriptions of study materials which can be presented in the form of several main points and sub-topics.
- 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%.
- TM=Face to face, PT=Structured assignments, BM=Independent study.