



**Health and Sports Science Module Handbook**  
**Faculty of Sports Science Universitas Negeri Makassar**

Module designation		<b><i>Sports Physiology</i></b>				
Semester(s) in which the module is taught		2				
Person responsible for the module		Dr. Arimbi, S.Or., M.Pd.				
Language		Bilingual (Bahasa and English)				
Relation to curriculum		Compulsory				
Teaching methods		3 parallel classes consist of 35 students/class: 1) Lecture (Face to face lecture): 3 hours x 14 weeks 2) Practical class: 3 hours x 14 weeks				
Workload	Total workload	194 hours				
		Face to face teaching	Structured activities	Independent study	Exam	total
	Lecture	42	42	42	4	128
	Practical class	42	10	10	4	66
	Total					194
Credit points		3 credits				
Required and recommended prerequisites for joining the module		None				
Module objectives / intended learning outcomes		Students who successfully complete this course will be able to: 1. Have a theoretical knowledge regarding the physiological responses and capacity for exercise by the human body. 2. Differentiate the physiological metabolic processes that govern human movement and apply each of these processes to physical performance. 3. Explain how different systems of the body respond and adapt to the acute and chronic stress of a single and repeated bout of physical activity. 4. Explain how environmental conditions, such as temperature and altitude, influence physiology during physical activity. 5. Apply the knowledge about sports physiology to understand the effectiveness of particular training techniques to sport performance. 6. Attain knowledge of current issues in exercise				



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	<p>physiology research and be able to critically evaluate published literature.</p>
<p>Content</p>	<ul style="list-style-type: none"> <li>• Energy Systems &amp; Exercise (Energy substrates, the basic energy systems, interaction of the energy systems).</li> <li>• Energy Expenditure &amp; Fatigue (Measuring energy expenditure, energy expenditure at rest and during exercise, fatigue and its causes).</li> <li>• Nervous System (structure and function of the nervous system, central and peripheral nervous systems).</li> <li>• Cardiovascular System &amp; Exercise.</li> <li>• Cardiovascular Control During Exercise.</li> <li>• Respiratory System &amp; Exercise.</li> <li>• Cardiorespiratory Responses to Acute Exercise.</li> <li>• Adaptations to Resistance Training (Resistance training and gains in muscular fitness, mechanisms of gains in muscle strength).</li> <li>• The Environment &amp; Exercise: Heat &amp; Cold (physiological responses to exercise in the heat, acclimation to exercise in the heat, physiological responses to exercise in the cold).</li> <li>• The Environment &amp; Exercise: Altitude (physiological responses to acute altitude exposure, exercise and sport performance at altitude, acclimation – chronic exposure to altitude, altitude – optimizing training and performance).</li> </ul>
<p>Exams and assessment formats</p>	<p><b>Assignment (Quizzes)</b>          Prior to each of the lectures, students will be given a set of questions to answer that will assess their understanding of the lecture material. The questions will be a mix of short answer and fill in the blank. These questions may sometimes ask for students to make connections to popular trends and topics within the exercise physiology field.  <b>Weight: 20%</b></p> <p><b>Mid and Final Semester Exams</b>          There will be mid and final semester exams during this course. These exams will be multiple choice, true/false, short answer, and essay. These exams will cover information from lecture, quizzes and the textbook.  <b>Weight: 30%</b></p>



	<p><b>Group Project</b></p> <p>As the final project, students working in groups (2 to 3 students each group) will present a full case report. This report should function as a complete and structured exercise program.</p> <p>The project should include:</p> <ol style="list-style-type: none"> <li>1. Case description: <ul style="list-style-type: none"> <li>• A short presentation of the population, including age, special considerations for the population and a needs analysis.</li> <li>• A discussion of the benefits of training for the population in regard to their needs, based on 1-2 scientific papers.</li> </ul> </li> <li>2. Exercise-program: <ul style="list-style-type: none"> <li>• Create a complete program which counts in findings, physiological needs, and challenges in relations to the case.</li> <li>• Must include: Strength training and cardiovascular training, including training intensity, duration, frequency, and progression, based on 1-2 scientific papers.</li> <li>• The exercise program has to be realistic (will my case-person be able to complete).</li> <li>• Include a short discussion of why students chose that training regime, with reference to scientific literature.</li> </ul> </li> <li>3. List of references.</li> </ol> <p><b>Weight: 50%</b></p>
<p>Study and examination requirements</p>	<p>Students are expected to attend all classes, unless circumstances prevent them from attending and an email was sent prior to class. Final grading will be based on students' attendance, their participation in assignment, their scores in the mid and final semester exams, and their group project.</p>
<p>Reading list</p>	<p><b>Required Text</b></p> <p>Kenney, W. L., Wilmore, J. H., &amp; Costill, D. L. (2015) Physiology of Sport and Exercise, 7<sup>th</sup> Edition. Human Kinetics.</p>



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	<p><b>Optional Texts</b></p> <p>McArdle, W. D., Katch, F. I., &amp; Katch. V. L. (2015) Exercise Physiology: Nutrition, Energy, and Human Performance. Wolters Kluwer.</p>
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