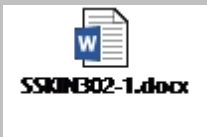


Course Title	<b>EXERCISE PHYSIOLOGY</b>				
Course Code	SSEXP206-1				
Course Type	MANDATORY				
Level	BSc (Level 1)				
Year / Semester	2nd / Spring				
Teacher's Name	Dr Elena Papacosta				
 SSKIN302-1.docx ECTS	6	Lectures / week	2	Laboratories / week	1
Course Purpose	<p>The purpose of this course is to provide students with a comprehensive understanding of physiological responses and adaptations to exercise. Through theoretical knowledge, practical applications and laboratory techniques, students will explore the complex mechanisms by which the human body responds to acute and chronic exercise stimuli. By examining the interaction between different physiological systems during exercise, students will develop a deeper appreciation for the complexity of human performance and health. The course aims to equip students with the fundamental knowledge and analytical skills necessary for the critical evaluation of exercise interventions, the design of exercise programs based on quantitative data of evaluation of athletic performance and the contribution of exercise and sport training adaptations in the field of sport and exercise science.</p>				
Learning Outcomes	<p>Upon completion of the course, students are expected to:</p> <ol style="list-style-type: none"> <li>1. describe the mechanisms of energy production and distinguish the mobilization of each according to the intensity of the exercise.</li> <li>2. explain the acute and chronic adaptations of the various systems of the human body in response to exercise and sport training.</li> <li>3. interpret the role of the neuromuscular system in muscle contraction and the neuromuscular adaptations that occur due to resistance training.</li> <li>4. analyze the importance of the various metabolic changes that accompany sports training and how these can optimize physical performance.</li> <li>5. distinguish the physiological responses that occur in the human body to various environmental conditions.</li> <li>6. explain the exercise-induced adaptations in different populations and be able to structure the contents of exercise programs in different populations.</li> </ol>				
Prerequisites	No	Corequisites	No		
Course Content	Energy and movement: Sources of muscle energy, Basic energy systems, measurement of energy expenditure at rest and during exercise.				

	<p>Exercise-induced adaptations: Acute and chronic exercise-induced adaptations, Neuromuscular function and exercise, Respiratory function and exercise, Cardiovascular function and exercise, Immunoendocrine function and exercise.</p> <p>Training and metabolic adaptations: Adaptations with aerobic training, aerobic system training, adaptations with anaerobic training.</p> <p>Neuromuscular function and exercise: Neuromuscular control of movement, Neuromuscular adaptations with resistance training.</p> <p>Environmental effects on performance: Thermoregulation, exercise in hypobaric and hyperbaric environments.</p> <p>Age and gender factors in sport and exercise: children/adolescents and sport, ageing, exercise and sport, gender differences and sport.</p> <p>Maximization of athletic performance: Athletic performance, nutritional issues in sports, physical composition in sports, ergogenic aids, and athletic performance.</p> <p>Physical activity for health and well-being: exercise prescription for health and wellness, chronic diseases and exercise.</p>
Teaching Methodology	<p><b>Theory</b></p> <p>The teaching of the course includes lectures to provide the theoretical background. Detailed notes with PowerPoint and material rich in images and videos are used in teaching. Methods such as case studies, clinical scenarios, discussion, questions/answers are used in the teaching methodology depending on the nature of the course. In addition, workshops and site visits with hands-on experiences are provided to deliver the practical background of course content. Relevant material published in international scientific journals is also used to follow the latest developments related to the subject of the course.</p> <p><b>Laboratory</b></p> <p>During the laboratory courses, students develop their clinical skills in ergophysiological evaluation of parameters of the cardiorespiratory and neuromuscular system so that they can successfully analyze quantitative data in a real clinical environment.</p>
Bibliography	<p>Wilmore, J.H. &amp; Costill, D.L. Φυσιολογία της άσκησης και του αθλητισμού. Τόμος Ι. Ιατρικές εκδόσεις Πασχαλίδης, Αθήνα, Ελλάδα, (2006).</p> <p>Wilmore, J.H. &amp; Costill, D.L. Φυσιολογία της άσκησης και του αθλητισμού. Τόμος ΙΙ. Ιατρικές εκδόσεις Πασχαλίδης, Αθήνα, Ελλάδα, (2006).</p>

	<p>Κλεισούρας, Β. Εργοφυσιολογία. Ιατρικές εκδόσεις Πασχαλίδης, Αθήνα, Ελλάδα, (2011).</p> <p>McArdle, W.D., Katch, F.I. &amp; Katch, V.L. Φυσιολογία της άσκησης. Τόμος Α. Ιατρικές εκδόσεις Πασχαλίδης, Αθήνα, Ελλάδα, (2005).</p> <p>McArdle, W.D., Katch, F.I. &amp; Katch, V.L. Φυσιολογία της άσκησης. Τόμος Β. Ιατρικές εκδόσεις Πασχαλίδης, Αθήνα, Ελλάδα, (2005).</p> <p>American College of Sports Medicine. ACSM's guidelines for exercise testing and prescription (9th Ed.). Wolters Kluwer Health, Lippincott Williams and Wilkins, (2014).</p>
Assessment	<p><b>Continuous evaluation (50%):</b></p> <p>The evaluation shall include a combination of:</p> <p><b>Online quizzes or interactive assessments (20%):</b> Online quizzes or interactive assessments can be used through the Moodle platform to create quizzes with various question formats. These assessments are timed, and immediate feedback can be provided to students.</p> <p><b>Research reports (30%):</b> the description, analysis, and evaluation of the data collection carried out in the laboratory enables students to apply their theoretical knowledge in a practical way. The tasks are designed in a way that requires critical thinking, research, analysis, and synthesis of information. Research reports are individual and aligned with the learning outcomes of each module. Students are evaluated for the quality of their work, the depth of understanding they demonstrate, and their ability to effectively explain the analysis of the data collected during the laboratory course.</p> <p><b>Class discussions:</b> Students participate in class discussions to assess their theoretical knowledge. Active participation is encouraged to sharpen critical thinking skills by asking open-ended questions and facilitating dialogue.</p> <p><b>Final exam (50%):</b> Comprehensive final exam, to assess students' overall theoretical knowledge. These assessments cover a wider range of topics and learning outcomes from across the curriculum to assess students' understanding and integration of knowledge in a variety of fields.</p>
Language	Greek / English



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