

Course title	Physiology of Exercise			
Course code	TRAN118			
Course type	Lectures			
Level	Diploma			
Year / Semester	1st Year / 2nd Semester			
Teacher's name	Polyviou Antonis / Dr Miliotou Androulla			
ECTS	6	Lectures / week	3	Laboratories / week
Course purpose and objectives	The purpose of the course is to give students the theoretical knowledge and explain the practical applications of exercise physiology. This course emphasises on the functions of the human body during physical exercise and the physiological adaptations performed by the body in response to systematic exercise, both in relation to training performance and health.			
Learning outcomes	<p>Upon the completion of the course, the students are expected to:</p> <p>Knowledge</p> <ol style="list-style-type: none"> Explain the neurological control of movement as well as the neuromuscular adaptations of training, in relation to aerobic, anaerobic and resistance training, the energy production systems and energy substrates (aerobic and anaerobic metabolism during exercise), the hormonal function during exercise and the role of hormones in training adaptations Comprehend the training responses and metabolic adaptations of the human body Explain the function of the cardiovascular and respiratory systems during exercise. Recognise the environmental effects on performance (exercise in hot and cold environments, exercise in hypobaric and hyperbaric environments) Mention the principles of applied exercise physiology to maximize performance and health Comprehend basic health and fitness metrics. <p>Skills</p> <ol style="list-style-type: none"> Evaluate and justify the principles of exercise physiology to improve general health and training performance Evaluate muscle function during exercise <p>Competences</p> <ol style="list-style-type: none"> Develop a responsible attitude towards training for health and performance 			

Prerequisites	MEDI126 Anatomy of Movement	Required	
Course content	<ul style="list-style-type: none"> • Muscular system – Structure and function – Effect of exercise on muscle fibers: • NS - Neuromuscular control - Neuromuscular adaptations • Metabolism and Energy Systems - Measurement of Energy Expenditure during Exercise. • Structure and Function of the Cardiovascular-Respiratory System. • Aerobic/Anaerobic Capacity – Aerobic and anaerobic adaptations. • Endocrine system - Hormonal regulation & Exercise • Thermoregulation & Exercise • Ergogenic aids - Dietary supplements - Doping • Exercise in a hypobaric - hyperbaric environment • Training for Health and Performance. • Laboratory and field trials to evaluate fitness and performance parameters. 		
Teaching methodology	<p>The content of the course is taught through lectures with the help of a computer, video projector, electronic presentations and multimedia and the use of a whiteboard. Active student participation is ensured through guided discussions.</p>		
Bibliography	<p>Greek Bibliography</p> <ul style="list-style-type: none"> • Wilmore J. H. and Costill L. D. (2006.) <i>Φυσιολογία της άσκησης και του αθλητισμού [Physiology of exercise and sport Volume 1]</i>. Τόμος 1. Ιατρικές εκδόσεις Π.Χ Πασχαλίδης, ISBN: 9603994162 • Wilmore J. H. and Costill L. D. (2006.) <i>Φυσιολογία της άσκησης και του αθλητισμού [Physiology of exercise and sport. Volume 2]</i>. Τόμος 2. Ιατρικές εκδόσεις Π.Χ Πασχαλίδης, ISBN: 9603994170 • Raven P.B., Wasserman D.H., Squires W.G. και T.D. Murray (2016). <i>Φυσιολογία της Άσκησης: Μια ολιστική προσέγγιση [Physiology of exercise: A holistic approach]</i>. Ιατρικές εκδόσεις Λαγός Δημήτριος. Αθήνα • Καρατζαφέρη, Κ., et al. (2015). <i>Εγχειρίδιο για την σωματική αξιολόγηση αθλητών: δοκιμασίες εργαστηρίου και πεδίου για την επιστημονική υποστήριξη του αγωνιστικού αθλητισμού [Manual for the body evaluation of the athletes]</i>. Kallipos, Open Academic Editions. https://hdl.handle.net/11419/4443 <p>English Bibliography</p> <ul style="list-style-type: none"> • Kraemer, Steven J. Fleck, Michael Deschenes, Lippincott Williams & William J. (2015). <i>Exercise Physiology: Integrating Theory and Application</i>, Wikins copyright. ISBN 145119319X, 9781451193190 • Murray R. W. and Kenney, L. (2020) <i>Practical Guide to Exercise Physiology: The Science of Exercise Training and Performance Nutrition</i>. 2nd Edition. Human Kinetics. ISBN-13 : 978-1492599050 		



Assessment	<ul style="list-style-type: none">• Attendance and class participation: 10%• Intermediary written examination: 30%• Assignment: 20%• Final written examination: 40%
Language	Greek or English