

Course Title	PHYSICAL ACTIVITY IN CLINICAL POPULATIONS AND ELDERLY			
Course Code	SSCLI304-1			
Course Type	MANDATORY			
Level	BSc (Level 1)			
Year / Semester	3rd / Spring			
Teacher's Name	Dr Elena Papacosta & Dr. Giorgos Charalambous			
ECTS	6	Lectures / week	3	Laboratories / week
Course Purpose	<p>This course provides an overview of the principles and practices of adapted exercise in clinical populations and the elderly. Students will explore the benefits of exercise for various clinical conditions and non-communicable diseases such as cardiovascular disease, diabetes, arthritis, and osteoporosis, as well as age-related concerns such as sarcopenia and falls. Emphasis will be placed on understanding physiological adaptations to exercise, designing safe and effective exercise programs, and addressing specific exercise issues and limitations with clinical populations and the elderly.</p>			
Learning Outcomes	<p>Upon completion of the course, students are expected to:</p> <ol style="list-style-type: none"> 1. Understand the physiological effects of exercise on clinical populations and the aging process. 2. Explore evidence-based exercise interventions for people with noncommunicable diseases and age-related concerns. 3. Analyze the principles of exercise program design, including the selection, evolution, and modification of exercise for different populations. 4. Gain insight into safety issues, limitations and precautions, and adaptation when prescribing exercise for clinical populations and the elderly. 5. Develop skills in assessing functional fitness, mobility, and physical activity levels in clinical populations and the elderly. 6. Examine strategies to promote adherence to exercise programs, quality of life and motivate individuals to maintain an active lifestyle. 7. Prescribe innovative approaches to health promotion for people with chronic diseases and the elderly. 			
Prerequisites	No	Corequisites	No	
Course Content	Introduction to exercise in clinical populations and the elderly: Epidemiology of noncommunicable diseases, morbidity and mortality			

relationships with participation in physical activity in different populations, quality of life and aging

Cardiovascular diseases: myocardial infarction, chronic heart failure, angina pectoris and silent ischemia, valvular disease, hypertension, limitations in exercise prescribing, cardiac rehabilitation phases, effect of aging on cardiovascular function, prevention or delay of the effect of aging on cardiovascular and respiratory function with exercise, measurement of physical fitness with stress test protocols.

Lung diseases: chronic obstructive pulmonary disease, asthma, cystic fibrosis, exercise response and exercise prescription restrictions, effect of physical activity, evaluation of respiratory function and spirometry.

Metabolic diseases: Diabetes and insulin resistance, hyperlipidemia, obesity, metabolic syndrome, exercise response and exercise prescription restrictions.

Renal failure and hepatic failure: exercise and physical activity in chronic renal and hepatic failure, treatment and management of muscle stiffness in patients with renal and hepatic insufficiency, exercise response, and limitations in exercise prescribing.

Cancer: types of cancers, etiology, pathology and risk factors, relationship between hypomotility and chronic inflammation, exercise in treated patients, exercise response and limitations in exercise prescription

Orthopedic & neurological diseases and disabilities: arthritis, back pain, osteoporosis, sarcopenia, Parkinson's disease, Alzheimer's disease, "lower cross syndrome", exercise response and limitations in exercise prescription

Strength training for clinical populations and the elderly: importance of strength training to maintain muscle mass and functional independence, prescribing resistance training for people with chronic conditions and age-related muscle loss, adaptations and modifications for different fitness levels and abilities

Flexibility and balance training: the role of flexibility and balance in preventing falls and improving mobility, prescribing flexibility exercise for people with arthritis and osteoporosis, balance training strategies for seniors and people with neurological conditions

Physical activity and quality of life: quality of life and effects of physical activity and exercise on the health of the elderly and clinical

	<p>populations, assessment of physical functional capacity in the elderly, intervention exercise programmes in the elderly, leisure activities in the elderly.</p> <p>Quality of life and physical activity exercise prescription: modes of physical activity, development of individualized exercise plans to enhance participation and long-term success in clinical populations and older adults</p>
Teaching Methodology	<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>
Bibliography	<p>Dustine, J. & Moore, G. ACMS's Άσκηση Χρόνιες Παθήσεις & Αναπηρίες. Ιατρικές εκδόσεις Πασχαλίδης, Αθήνα, Ελλάδα, (2005). ISBN: 960-399-329-8.</p> <p>Spirduso, W., Francis, K. & MacRae, P. Φυσικές διαστάσεις της γήρανσης. 2η έκδοση. Human Kinetics Publishers, Champaign, Ιλλινόις, ΗΠΑ, (2005). SBN-13: 978-0736033152</p> <p>Kohl, H. & Murray, T. Θεμέλια της σωματικής δραστηριότητας και της δημόσιας υγείας. Human Kinetics Publishers, Champaign, Ιλινόις, ΗΠΑ, (2012). ISBN13: 9780736087100</p> <p>Ehrman, J., Gordon, P., Visich, P. & Keteyian, S. Φυσιολογία κλινικής άσκησης. 2η Έκδοση. Human Kinetics Champaign Illinois, ΗΠΑ, (2009). ISBN: 978-0-7360-6565-8, ISBN-10: 0-7360-6565-2.</p> <p>Τοκμακίδης, Σ. Άσκηση και Χρόνιες Παθήσεις. Ιατρικές εκδόσεις Πασχαλίδης, Αθήνα, Ελλάδα, (2003). ISBN: 978-960-399-079-6</p> <p>Bouchard, C., Blair, S. & Haskell, W. Σωματική δραστηριότητα και υγεία. 2η Έκδοση. Human Kinetics Publishers, Champaign, Ιλινόις, ΗΠΑ, (2012). ISBN13: 9780736095419.</p> <p>Αμερικανική Αθλητιατρική Εταιρεία. Κατευθύνσεις σχεδιασμού προγραμμάτων άσκησης και αξιολόγησης. Εκδόσεις Αθλότυπο, Αθήνα, (2007). ISBN: 978-960-7378-78-1.</p>
Assessment	<p>Continuous evaluation (50%):</p> <p>The evaluation shall include a combination of:</p>

	<p>Online quizzes or interactive assessments (30%): Online quizzes or interactive assessments can be used through the Moodle platform to create quizzes with various question formats. These assessments are timed, and direct feedback can be provided to students.</p> <p>Presentation of innovative programs for clinical populations and/or the elderly (20%): For this work, students will work in small groups to research, design and present innovative exercise programs tailored to specific clinical populations and/or elderly people. The aim of this project is to encourage students to apply their knowledge of exercise principles and program design to address unique needs and challenges faced by people with chronic conditions or age-related limitations.</p> <p>Class discussions: Students participate in class discussions to assess their theoretical knowledge. Active participation is encouraged to sharpen their critical thinking skills by asking open-ended questions and facilitating their dialogue.</p> <p>Final exam (50%): 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