

COURSE OUTLINE

1. GENERAL

SCHOOL	PHYSICAL EDUCATION & SPORT SCIENCES		
DEPARTMENT	PHYSICAL EDUCATION & SPORT SCIENCES		
LEVEL OF STUDIES	PGP – Level 7		
COURSE CODE	K101	SEMESTER	A'
COURSE TITLE	Physiological Exercise Assessment in Clinical Populations		
TEACHING ACTIVITIES <i>If the ECTS Credits are distributed in distinct parts of the course e.g. lectures, labs etc. If the ECTS Credits are awarded to the whole course, then please indicate the teaching hours per week and the corresponding ECTS Credits.</i>		TEACHING HOURS PER WEEK	ECTS CREDITS
		3	7,5
Please, add lines if necessary. Teaching methods and organization of the course are described in section 4.			
COURSE TYPE <i>Background, General Knowledge, Scientific Area, Skill Development</i>	Scientific Area		
PREREQUISITES:	NO		
TEACHING & EXAMINATION LANGUAGE:	GREEK		
COURSE OFFERED TO ERASMUS STUDENTS:	NO		
COURSE URL:	https://eclass.duth.gr/courses/PHYED4102/		

2. LEARNING OUTCOMES

Learning Outcomes

Please describe the learning outcomes of the course: Knowledge, skills and abilities acquired after the successful completion of the course.

Upon successful completion of the course, postgraduate students will be able to:

- understand the basic principles of exercise physiology assessment in clinical populations.
- interpret and synthesize data regarding body composition analysis in cardiometabolic, obese, cancer and other chronic disease patients.
- interpret and synthesize data regarding the assessment of biochemical parameters in cardiometabolic, cancer and other chronic disease patients.
- use the stress test as a basic tool for pre-exercise assessment in clinical populations and to interpret its results
- evaluate the basic metabolic rate and the blood glucose curve in clinical populations and suggest ways to improve these parameters
- design and carry out special functional field tests on clinical populations as part of the geriatric rehabilitation assessment
- assess and interpret neuromuscular function and performance in patients with chronic conditions and in older adults

General Skills

Name the desirable general skills upon successful completion of the module

Search, analysis and synthesis of data and information,
ICT Use

Adaptation to new situations

Decision making

Autonomous work

Teamwork

Working in an international environment

Project design and management

Equity and Inclusion

Respect for the natural environment

Sustainability

Demonstration of social, professional and moral responsibility and sensitivity to gender issues

Critical thinking

*Working in an interdisciplinary environment
Production of new research ideas*

Promoting free, creative and inductive reasoning

The general abilities of the students that are strengthened are:

- Search, analysis and synthesis of data and information, ICT Use
- Adaptation to new situations
- Decision making
- Autonomous work
- Teamwork
- Work in an interdisciplinary environment
- Generating new research ideas
- Project design and management
- Critical thinking
- Promoting free, creative and inductive reasoning Project planning and management

3. COURSE CONTENT

Lecture 1: Principles of clinical exercise assessment

Lecture 2: Body composition analysis I

Lecture 3: Body composition analysis II

Lecture 4: Measurement of basal metabolic rate

Lecture 5: Glucose tolerance: testing and interpretation

Lecture 6: Biochemical evaluation of patients with chronic disease

Lecture 7: Exercise stress testing: protocols and practical implications

Lecture 8: Exercise stress testing: results and interpretation

Lecture 9: Psychometric evaluation in clinical populations

Lecture 10: ECG- and arrhythmias analysis

Lecture 11: Frailty assessment and functional tests

Lecture 12: Neuromuscular function and performance: Part I

Lecture 13: Neuromuscular function and performance Part II

4. LEARNING & TEACHING METHOD - EVALUATION

TEACHING METHOD <i>Face to face, Distance learning, etc.</i>	- Face to face Lectures - Laboratory practical applications - Distance learning	
USE OF INFORMATION & COMMUNICATIONS TECHNOLOGY (ICT) <i>Use of ICT in Teaching, in Laboratory Education, in Communication with students</i>	- Use of ICT in Teaching and Laboratory Education - Workshops via e-class - MsTeams/ e-class, webmail	
TEACHING ORGANIZATION <i>The ways and methods of teaching are described in detail. Lectures, Seminars, Laboratory Exercise, Field Exercise, Bibliographic research & analysis, Tutoring, Internship (Placement), Clinical Exercise, Art Workshop, Interactive learning, Study visits, Study / creation, project, creation, project. Etc.</i> <i>The supervised and unsupervised workload per activity is indicated here, so that total workload per semester complies to ECTS standards.</i>	Activity	Workload/semester
	Lectures	39
	Bibliographic research & analysis	80
	Individual work	60
	Essay Presentation	5,5
	Final Exams	3
		187,5
STUDENT EVALUATION <i>Description of the evaluation process</i> <i>Assessment Language, Assessment Methods, Formative or Concluding, Multiple Choice Test, Short Answer Questions, Essay Development Questions, Problem Solving, Written Assignment, Essay / Report, Oral Exam,</i>	The evaluation of the students includes: • INDIVIDUAL WORK: Written review on a topic of free choice, related to the subject of the course, with recent bibliography (~ 1200 words with a minimum limit of 5 research articles and an indicative Review Table): 25%	

Presentation in audience, Laboratory Report, Clinical examination of a patient, Artistic interpretation, Other/Others

Please indicate all relevant information about the course assessment and how students are informed

- GROUP WORK: Presentation of a research article with contemporary bibliography: 15%
- Final exams: 60%

5. SUGGESTED BIBLIOGRAPHY

1. Batrakoulis A. (2025). Obesity and Weight Management: The Exercise Professional's Guide to Fitness Programming, Human Kinetics, Champaign IL 61820, USA.
2. Ehrman JK, Gordon PM, Visich PS. & Keteyian P.S. (2023). *Clinical Exercise Physiology*. University Studio Press, Thessaloniki.
3. Raven PB, Wasserman DH, Squires WG. & T.D. Murray (2016). *Exercise Physiology: A Holistic Approach*. Medical publications Lagos Dimitrios, Athens.
4. Powers S.K. & Howley E.T. (2018). *Exercise Physiology: Theory and Applications of Endurance and Performance*. Broken Hill Publisher Ltd, Nicosia, Cyprus.
5. ACSM (2013). *ACSM's Guidelines for Exercise Testing and Prescription*, Lippincott Williams & Wilkins, ISBN/ISSN: 9781609139551.

ANNEX OF THE COURSE OUTLINE

Alternative ways of examining a course in emergency situations

Teacher (full name):	Styliani Karakyriou
Contact details:	skarakir@phyed.duth.gr
Supervisors: (1)	NO
Evaluation methods: (2)	Written examination with distance learning methods
Implementation Instructions: (3)	The examination in the course will be carried out in subgroups of users in the e-class, depending on the number of participants in the course, on the day according to the examination program announced by the Secretariat. The exam will be conducted through MS-Teams. The link will be sent to students via e-class exclusively to the institutional accounts of those who have registered for the course and have accepted the terms of distance methods. Students will have to log in to the examination room through their institutional account, otherwise they will not be able to participate. They will also take part in the examination with a camera, which will be on during the examination. Before the start of the exam, students will show their identity to the camera, so that they can be identified. Each student will have to answer laboratory exercises, multiple choice, free text, short answer, and critical questions. Each of the questions is scored from 0.5 to 10.0 points depending on the category of the question (100 points maximum).

(1) Please write YES or NO

(2) Note down the evaluation methods used by the teacher, e.g.

- *written assignment* or/and exercises
- written or oral examination with distance learning methods, provided that the integrity and reliability of the examination are ensured.

(3) In the **Implementation Instructions** section, the teacher notes down clear instructions to the students:

a) in case of **written assignment and / or exercises**: the deadline (e.g. the last week of the semester), the means of submission, the grading system, the grade percentage of the assignment in the final grade and **any other necessary information**.

b) in case of **oral examination with distance learning methods**: the instructions for conducting the examination (e.g. in groups of X people), the way of administration of the questions to be answered, the distance learning platforms to be used, the technical means for the implementation of the examination (microphone, camera, word processor, internet connection, communication platform), the hyperlinks for the examination, the duration of the exam, the grading system, the percentage of the oral exam in the final grade, the ways in which the inviolability and reliability of the exam are ensured and any other necessary information.

c) in case of **written examination with distance learning methods**: the way of administration of the questions to be answered, the way of submitting the answers, the duration of the exam, the grading system, the percentage of the written exam of the exam in the final grade, the ways in which the integrity and reliability of the exam are ensured and any other necessary information.

There should be an attached list with the Student Registration Numbers only of students eligible to participate in the examination.