DEMOCRITUS UNIVERSITY OF THRACE
DEPARTMENT OF PHYSICAL EDUCATION & SPORT SCIENCE

UNDERGRADUATE PROGRAM OF STUDY

COURSE TITLE:

Cardiovascular disease and exercise

COURSE CODE:	**E.C.T.S. CREDITS**
N547	8

RESPONSIBLE PROFESSOR:

NAME	Savvas Tokmakidis	
POSITION	Professor	
SECTOR	Sports Training	
OFFICE	B2 - 9	
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CO-INSTRUCTORS	Konstatinos Volaklis, T.L.S.S.	

SEMESTER:

1st	[ ]	2nd	[ ]	3rd	[ ]	4th	[ ]
5th	[ ]	6th	[X]	7th	[ ]	8th	[ ]

COURSE TYPE:

Obligatory	[ ]
Direction	[ ]
Specialization	[X]
Prerequisite for specialization	[ ]
Elective (*open*)	[ ]

HOURS *(per week)***:** 4

DIRECTION *(only for 3rd & 4th year courses):*

Exercise for Special Populations	

SPECIALIZATION *(only for 3rd & 4th year courses)*

Adapted Physical Education & Physical Activity

LANGUAGE OF TEACHING: Greek [X] English [ ]

AIM OF THE COURSE *(content and acquired skills):*

The aim of this course is to introduce to students the pathophysiology of cardiovascular diseases (i.e., coronary heart disease, hypertension, dyslipidemia, peripheral vascular disease, stroke, etc.) and the potential of exercise training (through mechanisms of safe and effective training protocols) to be used as a means of rehabilitation.

COURSE CONTENTS *(outline – titles of lectures):*

1. Risk factors for cardiovascular disease.
2. Exercise as a means of prevention and treatment of cardiovascular disease.
3. Pathophysiology of coronary artery disease and rehabilitation phases.
4. Characteristics of exercise programs in patients with coronary artery disease.
5. Adaptations and mechanisms of action of exercise in patients with coronary artery disease.
6. Laboratory I (stress test).
7. Laboratory II (design of an exercise programs).
8. Pathophysiology of hypertension.
9. Application of exercise programs in hypertensive patients.
10. Lipid disorders and benefits of exercise.
11. Metabolic syndrome (definition and pathogenesis).
12. Exercise in patients with metabolic syndrome.
13. Laboratory III (glucose tolerance test).
14. Laboratory IV (strength training in patients with cardiovascular diseases).
15. Peripheral arterial disease and exercise.
16. Strokes and exercise.
17. Heart failure and exercise.
18. Water exercise in patients with cardiovascular disease.
19. Safety and ultimate outcome of exercise in patients with cardiovascular disease.
20. Congenital heart defects and exercise.
21. Laboratory V (case studies I).
22. Laboratory VI (case studies II).
23. Regression of atherosclerosis and exercise.
24. Effect of exercise on endothelial function.
25. Strength exercise adaptations in patients with cardiovascular disease.
26. Exercise and vascular function.

TEACHING METHOD(S) *(lectures – labs – practice etc.):*

1. Lectures.
2. Laboratories.

ASSESSMENT METHOD(S):

1. Tests (10%)
2. Written assignments (30%)
3. Final examination (60%)

LEARNING OUTCOMES:

Upon the completion of this course the students will know: 1) the basic pathophysiology points of the most common cardiovascular diseases, 2) the basic mechanisms and the occurred adaptations in different types of exercise in patients

with cardiovascular disease and 3) how to plan and supervise special exercise programs for patients with cardiovascular disease

LEARNING OUTCOMWS – CONTINUED:

Learning Outcomes	***Educational Activities***	***Assessment***	***Student Work Load (hours)***
Knowledge of the basic pathophysiology points of the most common cardiovascular diseases.	Lectures.	Mid-term exams	80
Knowledge of the basic mechanisms and occurred adaptations in different types of exercise in patients with cardiovascular disease.	Lectures, laboratories.	Mid-term exams, practical evaluation.	80
Ability to design and supervise special exercise programs in patients with cardiovascular disease.	Individual / group work at home.	Evaluation of projects, final exams.	80
		TOTAL	**240**

OBLIGATORY & SUGGESTED BIBLIOGRAPHY:

1. Tokmakidis, S. (2003). Exercise and chronic disease. Athens: Paschalidis.
2. Tokmakidis, S. & Volaklis, K. (2008). Exercise as a therapeutic tool in patients with coronary artery disease. Athens: Paschalidis.