

**DEMOCRITUS UNIVERSITY OF THRACE**  
**DEPARTMENT OF PHYSICAL EDUCATION & SPORT SCIENCE**

*UNDERGRADUATE PROGRAM OF STUDY*

**COURSE TITLE:**

Clinical exercise physiology
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**COURSE CODE:**

N332
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**E.C.T.S. CREDITS**

7
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**RESPONSIBLE PROFESSOR:**

NAME	Savvas Tokmakidis	
POSITION	Professor	
SECTOR	Sports Training	
OFFICE	B2 - 9	
TEL. / E-MAIL	25310 - 39649 & 39724	stokmaki@phyed.duth.gr
CO-INSTRUCTORS	Konstantinos Volaklis, T.L.S.S.	

**SEMESTER:**

1 <sup>st</sup>	<input type="checkbox"/>	2 <sup>nd</sup>	<input type="checkbox"/>	3 <sup>rd</sup>	<input type="checkbox"/>	4 <sup>th</sup>	<input type="checkbox"/>
5 <sup>th</sup>	<input checked="" type="checkbox"/>	6 <sup>th</sup>	<input type="checkbox"/>	7 <sup>th</sup>	<input type="checkbox"/>	8 <sup>th</sup>	<input type="checkbox"/>

**COURSE TYPE:**

Obligatory	<input type="checkbox"/>
Direction	<input checked="" type="checkbox"/>
Specialization	<input type="checkbox"/>
Prerequisite for specialization	<input type="checkbox"/>
Elective ( <i>open</i> )	<input type="checkbox"/>

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

2
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**DIRECTION (*only for 3<sup>rd</sup> & 4<sup>th</sup> year courses*):**

Exercise for Special Populations
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**SPECIALIZATION (*only for 3<sup>rd</sup> & 4<sup>th</sup> year courses*):**

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**LANGUAGE OF TEACHING:**

Greek

English

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

The aim of this course is to present the acute and long term responses and adaptations of the human body during exercise applied in patients with chronic disease. Knowledge concerning metabolism, endocrinology, cardiovascular system, immune system, bone metabolism, and neuromuscular system will allow students to plan and apply exercise programs in patients with chronic diseases.

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

1. Introduction to clinical exercise physiology – Benefits of systematic exercise and physical activities.
2. Inactivity of exercises as a risk factor: epidemiological studies.
3. Acute physiological cardiovascular adaptations during exercise in cardiac patients.
4. Laboratory I (evaluation of heart rate and arterial blood pressure during exercise).
5. Characteristics and adaptations of exercise in obese patients.
6. The role of systematic exercise training in preventing and treating obesity patients.
7. Pathophysiology of diabetes mellitus and acute adaptations during exercise.
8. Therapeutic effects of exercise in patients with diabetes mellitus.
9. Laboratory II (body composition, lipids).
10. The influence of resistance exercise in patients with chronic diseases.
11. Exercise and adaptations in lipids levels.
12. Laboratory III (evaluation of the basic metabolic rate).
13. Exercise and bone metabolism.

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

1. Lectures.
2. Laboratories.

**ASSESSMENT METHOD(S):**

1. Tests (10%)
2. Written assignments (20%)
3. Final examination (70%)

**LEARNING OUTCOMES:**

Upon the completion of this course the students will be able to:

1. Know about the acute physiological adaptations caused by exercise to chronic disease patients.
2. Know the basic mechanisms by which exercise improves fitness and health parameters in chronic disease patients.
3. Plan and supervise special exercise programs for patients with various health problems.

**LEARNING OUTCOMES – CONTINUED:**

<i>Learning Outcomes</i>	<i>Educational Activities</i>	<i>Assessment</i>	<i>Students Work Load (hours)</i>
Knowledge of the acute physiological adaptations	Lectures.	Mid-term exams.	100

caused by exercise to chronic disease patients.			
Knowledge of the basic mechanics by which exercise improves fitness and health parameters in chronic disease patients.	Lectures, laboratories.	Mid-term exams, practical evaluation.	60
Ability to plan and supervise special exercise programs for patients with health problems	Individual / group work at home.	Evaluation of individual / group works, final exams.	50
		<b>TOTAL</b>	<b>210</b>

**OBLIGATORY & SUGGESTED BIBLIOGRAPHY:**

<ol style="list-style-type: none"> <li>1. Durstine, L. &amp; Moore, G. (2009). ACSM's exercise management for persons with chronic diseases and disabilities. 3<sup>rd</sup> edition, Champaign, IL: Human Kinetics.</li> <li>2. Whaley, M.H. (2005). ACSM's guidelines for exercise testing and prescription. 7<sup>th</sup> edition, Philadelphia: Williams &amp; Wilkins.</li> </ol>
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