UNIVERSITY OF WEST ATTICA

FACULTY OF HEALTH AND CARE SCIENCES

DEPARTMENT OF PHYSIOTHERAPY

Curriculum

Course Description

Athens 2025

GENERAL CHARACTERISTICS OF THE PROGRAM

- Overall number of modules: 41
- Total Mandatory Modules: 41
- Total number of teaching hours/week: 216
- Total teaching hours for the 4 years of study (without exams) 2808
- Number of theoretical hours/week: 120 (68,4%)
- Total number of theoretical hours for the 8 semesters (without exams) 1560
- Number of workshop hours/week without internship: 56 (31,6 %) 24 hours clinical placement
- Total number of workshop hours for the 4 years of study (without exams and internship): 728 (312 clinical placement)
- Mandatory internship 704 hours (4 months x 22 days x 8 hours)
- Number of internship per week 40 (5 days x 8 hours)

  Overall Workload 7.200 hours

  ECTS : 240 (1 ECTS is equivalent to 30 hours of workload)

  Weight Coefficients:

  - 2: Dissertation, Internship and modules of Clinical Placement

  - 1,5: Mixed modules

  - 1: Theoretical modules

CATEGORIES OF MODULES

- **MANDATORY**

GBM = General Background Modules: 10

SBM = Special Background Modules: 5

SM = Speciality Modules: 22

- **ELECTIVE**

Elective Courses: 22 (10 from the Department of Physiotherapy, 4 from the Department of Biomedical Sciences, 6 from the Department of Obstetrics and 2 from the Department of Biomedical Engineering). (of which he chooses 4)

GBM : General Background Modules: 10

1. Anatomy I
2. Anatomy II
3. First Aids
4. Physiology
5. Internal Medicine I
6. Internal Medicine II
7. Neurophysiology
8. Orthopaedics
9. Neurology
10. Basic Principles of Psychopathology

SBM : Special Background Modules:

1. Kinesiology-Biomechanics I
2. Kinesiology-Biomechanics II
3. Deontology and Bioethics
4. Research Methods
5. Adapted Physical Activity

SM = Speciality Modules: 22

1. Kinesiotherapy
2. Electrophysical Agents in Physiotherapy
3. Clinical Electrotherapy
4. Soft tissue mobilisation
5. Respiratory Physiotherapy
6. Cardiovascular Physiotherapy
7. Clinical Training I
8. Mobilization of Neuromusculoskeletal Structures
9. Musculoskeletal Physiotherapy for Injuries
10. Musculoskeletal Physiotherapy in Disorders

11. Clinical Training II
12. Clinical work physiology
13. Sports Physiotherapy
14. Physiotherapy assessment - Clinical Reasoning
15. Motor control
16. Clinical Training III
17. Physiotherapy in Paediatric Neurological Disorders and Diseases
18. Physiotherapy in Adult Neurological Disorders and Diseases
19. Ergonomics and consultancy in physiotherapy
20. Physiotherapy in Special Population Groups
21. Clinical Placement (4 months)
22. Geriatric Physiotherapy

ELECTIVES MODULES : 23 (of which he chooses 4)

GROUP A (FALL SEMESTER)

MODULE	CATEGORY OF MODULES	DEPT
1. BIOPHYSICS	GBM	PHYSIOTHERAPY
2. Paediatrics	GBM	PHYSIOTHERAPY
3. Paediatrics	GBM	PHYSIOTHERAPY
4. Diagnostic Imaging	GBM	PHYSIOTHERAPY
5. English Medical Terminology		PHYSIOTHERAPY
6. Computing in Health		PHYSIOTHERAPY
7. Pharmacology	GBM	BIOMEDICAL SCINECES
8. Health Science Management Principles		OBSTRECTICS
9. Teaching principles and methods – Communication		OBSTRECTICS
10. English Terminology		OBSTRECTICS

GROUP B (EASTER SEMESTER)

11. Health Science Management Principles		PHYSIOTHERAPY
12. Biostatistics		PHYSIOTHERAPY
13. Pharmakology	GBM	PHYSIOTHERAPY
14. Dissertation	ME	PHYSIOTHERAPY
15. Advanced physiotherapy	ME	PHYSIOTHERAPY
16. Principles of business management and organization of workshops		BIOMEDICAL SCIENCES
17. Principles of marketing		BIOMEDICAL SCIENCES
18. Nutrition and health		BIOMEDICAL SCIENCES
19. Epidemiology	GBM	OBSTRECTICS
20. Surgery	GBM	OBSTRECTICS
21. Health informatics		OBSTRECTICS
22. Medical information		BIOMEDICAL ENGINEERING
23. Electromechanical installations hospitals		BIOMEDICAL ENGINEERING

s/n		MODULES			LECTURE		WORKSHOP		TOTAL		S.W*	ECTS*	P
		MANDATORY			HRS*	S.W*	HRS*	S.W*	HRS*	S.W*			
A*	B*	MODULES	CAT	CODE*									
1st SEMESTER													
1	1	ANATOMY I	GBM	П2-1010	3	160	-	-	3	160	160	5	8
2	2	PHYSIOLOGY	GBM	П2-1020	3	160	-	-	3	160	160	5	12
3	3	KINESIOLOGY & BIOMECHANICS I	SBM	П2-1030	3	150	2	60	5	210	210	7	16
4	4	FIRST AIDS	GBM	П2-1040	3	140	-	-	3	140	140	5	23
5	5	DEONTOLOGY AND BIOETHICS	SBM	П2-1050	3	140	-	-	3	140	140	5	27
6	6	ELECTIVE MODULE GROUP A	E	П2-ЕА*	3	90	-		3	90	90	3	233-55
		TOTAL 1st SEMESTER			**18**	**840**	**2**	**60**	**20**	**900**	**900**	**30**	
2nd SEMESTER													
7	7	ANATOMY II	GBM	П2-2010	3	135			3	135	135	5	32
8	8	KINESIOLOGY & BIOMECHANICS II	SBM	П2-2020	3	135	2	45	5	180	180	6	36
9	9	NEUROPHYSIOLOGY	GBM	П2-2030	3	135			3	135	135	4	43
10	10	INTERNAL MEDICINE I	GBM	П2-2040	3	135			3	135	135	4	48
11	11	ORTHOPAEDICS	GBM	П2-2050	3	135			3	135	135	5	52
12	12	ELECTROPHYSICAL AGENTS IN PT	SM	П2-2060	3	135	2	45	5	180	180	6	58
		TOTAL 2nd SEMESTER			**18**	**810**	**4**	**90**	**22**	**900**	**900**	**30**	
3rd SEMESTER													
13	13	NEUROLOGY	GBM	П2-3010	3	135			3	135	135	5	64
14	14	KINESIOTHERAPY	SM	П2-3020	3	135	2	45	5	180	180	6	69
15	15	SOFT TISSUE MOBILISATION	SM	П2-3030	3	135	2	45	5	180	180	5	76
16	16	CLINICAL ELECTROTHERAPY	SM	П2-3040	3	135	2	45	5	180	180	6	83
17	17	CLINICAL WORK PHYSIOLOGY	SM	П2-3050	3	135	-		3	135	135	5	88
18	18	INTERNAL MEDICINE II	GBM	П2-3060	3	90	-		3	90	90	3	94
		TOTAL 3rd SEMESTER			**18**	**765**	**6**	**135**	**24**	**900**	**900**	**30**	
4th SEMESTER													
19	19	MUSCULOSKELETAL PHYSIOTHERAPY FOR INJURIES	SM	П2-4010	3	135	2	45	5	180	180	6	100
20	20	MOTOR CONTROL	SM	П2-4020	3	135	2	45	5	180	180	6	107
21	21	RESPIRATORY PT	SM	П2-4030	3	120	2	45	5	165	165	5	113
22	22	CARDIOVASCULAR PHYSIOTHERAPY	SM	П2-4040	3	120	2	45	5	165	165	5	119
23	23	PHYSIOTHERAPY IN SPECIAL POPULATIONS	SM	П2-4050	3	105		-	3	105	105	4	124
24	24	RESEARCH METHODS	SBM	П2-4060	3	105		-	3	105	105	4	129
		TOTAL 4th SEMESTER			**18**	**720**	**8**	**180**	**26**	**900**	**900**	**30**	

s/n		MANDATORY MODULES			LECTURE		WORKSHOP		TOTAL		S.W*	ECTS*	P
A*	B*	MANDATORY MODULES	CAT	CODE*	HRS*	S.W*	HRS*	S.W*	HRS*	S.W*			
5th SEMESTER													
25	25	CLINICAL TRAINING I	SM	П2-5010	3	135	6	90	9	225	225	10	136
26	26	PHYSIOTHERAPY IN ADULT NEUROLOGICAL DISORDERS AND DISEASES	SM	П2-5020	3	150	2	45	5	195	195	6	143
27	27	MUSCULOSKELETAL PHYSIOTHERAPY IN DISORDERS	SM	П2-5030	3	150	2	45	5	195	195	5	150
28	28	MOBILIZATION OF NEUROMUSCULOSKELETAL STRUCTURES	SM	П2-5040	3	150	2	45	5	195	195	6	157
29	29	ELECTIVE MODULE GROUP A	E	П2-ЕА*	3	90	-	-	3	90	90	3	233-55
		TOTAL 5th SEMESTER			**15**	**675**	**12**	**225**	**27**	**900**	**900**	**30**	
6th SEMESTER													
30	30	CLINICAL TRAINING II	SM	П2-6010	3	120	12	180	15	300	300	10	163
31	31	PHYSIOTHERAPY IN PAEDIATRIC NEUROLOGICAL DISORDERS AND DISEASES	SM	П2-6020	3	150	2	45	5	195	195	6	172
32	32	ERGONOMICS AND CONSULTANCY IN PHYSIOTHERAPY	SM	П2-6030	3	90	2	45	5	135	135	5	178
33	33	SPORTS PHYSIOTHERAPY	SM	П2-6040	3	135	2	45	5	180	180	6	186
34	34	ELECTIVE MODULE GROUP B	E	П2-ЕВ*	3	90	-	-	3	90	90	3	259-67
		TOTAL 6th SEMESTER			**15**	**585**	**18**	**315**	**33**	**900**	**900**	**30**	
7th SEMESTER													
35	35	CLINICAL TRAINING III	SM	П2-7010	3	180	6	90	9	270	270	10	196
36	36	GERIATRIC PHYSIOTHERAPY	SM	П2-7020	3	180	-		3	180	180	6	208
37	37	PHYSIOTHERAPY ASSESSMENT - CLINICAL REASONING	SM	П2-7030	3	130	-		3	130	130	4	214
38	38	ADAPTED PHYSICAL ACTIVITY	SBM	П2-7040	3	160	-		3	160	160	5	219
39	39	BASIC PRINCIPLES OF PSYCHOPATHOLOGY	GBM	П2-7050	3	160	-		3	160	160	5	223
		TOTAL 7th SEMESTER			**15**	**810**	**6**	**90**	**21**	**900**	**900**	**30**	
8th SEMESTER													
40	40	CLINICAL TRAINING	SM	П2-8010	-	-	40+	704	40+	704	704	23	230
		ELLECTIVE MODULES											
41	41	DISSERTASION	E	П2-802ОА	3	196	-	-	3	196	196	7	270
42		ADVANCED PHYSIOTHERAPY	E	П2-8020В	3	196	-	-	3	196	196	7	273
		TOTAL 8th SEMESTER			**3**	**196**	**40**	**704**	**43**	**900**	**900**	**30**	
		TOTAL US weekly			**120**	**----**	**96**	**---**	**216**	**---**	**-----**	**----**	
		TOTAL US *			**1560**	**5401**	**1248**	**1799**	**2808**	**7200**	**7200**	**240**	

+: .*A: Number of offered Modules

*HRS: Hours Weekly

*B: number of modules to obtain a degree

*S.W.: Semester Workload

*ECTS: European Credit Transfer and Accumulation System

*TOTAL Undergraduate Curriculum [US] : total hours / SW / ECTS in the 4 years of studies without the inclusion of the internship in the teaching hours

П2-ЕА* : the code of the elective course declared by the student from GROUP A (П2-ЕА10, П2-ЕА20, П2-ЕА30, П2-ЕА40, П2-ЕА50 or П2-ЕА60)

П2-ЕВ* : the code of the elective course declared by the student from GROUP B (П2-ЕВ10, П2-ЕВ20, П2-ЕВ30 or П2-ЕВ-40)

1st SEMESTER

s/n	MANDATORY			LECTURE		WORKSHOP		TOTAL		SEMESTER WORKLOAD	ECTS
	MODULES			HOURS	WORKLOAD	HOURS	WORKLOAD	HOURS	WORKLOAD		
	MANDATORY MODULES	CATEGORY	CODE								
1	ANATOMY I	GBM	П2-1010	3	160	-	-	3	160	160	5
2	PHYSIOLOGY	GBM	П2-1020	3	160	-	-	3	160	160	5
3	KINESIOLOGY – BIOMECHANICS I	SBM	П2-1030	3	150	2	60	5	210	210	7
4	FIRST AIDS	GBM	П2-1040	3	140	-	-	3	140	140	5
5	DEONTOLOGY AND BIOETHICS	SBM	П2-1050	3	140	-	-	3	140	140	5
6	ELECTIVE MODULE GROUP A	E	П2-ЕА*	3	90	-		3	90	90	3
TOTAL				**18**	**840**	**2**	**60**	**20**	**900**	**900**	**30**

П2-ЕА* : the code of the elective course declared by the student from GROUP A (П2-ЕА10, П2-ЕА20, П2-ЕА30, П2-ЕА40, П2-ЕА50 or П2-ЕА60)

MODULE OUTLINE OF 'ANATOMY I'

(1) GENERAL

FACULTY	FACULTY OF HEALTH & CARING SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	**Π2-1010**	**SEMESTER**	**1st**
MODULE TITLE	ANATOMY I		

INDEPENDENT TEACHING ACTIVITIES	**Weekly Teaching Hours**	**ECTS**
Theory (Lectures)	3	5

MODULE TYPE	General Core Module
PRE-REQUIRED MODULES:	
TEACHING AND EXAMINATION LANGUAGE	Greek
SUITABLE FOR ERASMUS STUDENTS	Yes (English), undertaking an essay
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Anatomy I is an introductory course to all that follows, as it is the foundation upon which knowledge of all health sciences is built.

After completing the module, students should be able to:

- Know the cell structure and function.
- Recognize the topology, morphology and the gross texture of tissues, organs and systems of human body (musculoskeletal system, cardiovascular system).
- Know the basic functional mechanisms of anatomical structures, and the way in which each function is served by the given structure.

- Describe the synergy of anatomical structures for performing a common function (movement).
- Use the knowledge gained to deepen the clinical problem and plan appropriate therapeutic intervention with safety for the patient.
- Participate in interdisciplinary working groups to holistically manage patient problems.
- Be familiar with the mechanisms of searching for new scientific knowledge, evaluating new information and applying innovative therapeutic methods.

GENERAL COMPETENCES

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Group work- participation in interdisciplinary groups
- Respect for diversity and multiculturalism
- Demonstration of social, professional and ethical responsibility and sensibility on gender issues

(3) MODULE CONTENT

- Methods in the study of human anatomy.
- Cell structure and function.
- Tissues: epithelial, connective, muscle, nervous.
- Detailed description of musculoskeletal components (bones, joints, ligaments, muscles) by anatomical area and their functional association.
- Upper extremity: shoulder girdle, upper arm, forearm, and hand
- Lower extremity: pelvis, thigh, leg, and foot
- Abdomen
- Back
- Neck
- Head
- Pelvis and perineum
- Brief description of the heart and main vessels (arteries, veins, lymph nodes)

(4) TEACHING AND LEARNING METHODS – ASSESSMENT DELIVERY

<table>
<tr><td>DELIVERY</td><td>Physical presence</td></tr>
<tr><td>USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)</td><td>Open e-class platform</td></tr>
<tr><td>TEACHING ORGANIZATION</td><td>
<table>
<tr><th>Activity</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td></td></tr>
<tr><td>Posting and distribution of literature</td><td></td></tr>
<tr><td>Interactive teaching</td><td></td></tr>
<tr><td>Guest speakers approved by the Physiotherapy Department</td><td></td></tr>
<tr><td>Information relating to scientific activity (conferences, meetings)</td><td></td></tr>
<tr><td>Total</td><td>160</td></tr>
</table>
</td></tr>
<tr><td>STUDENT ASSESSMENT</td><td>Final written examination (100%) of all module content, through:
✓ Multiple choice questions
✓ True-or-false questions
✓ Gap-filling
✓ Short answer questions
✓ Open ended questions</td></tr>
<tr><td colspan="2"></td></tr>
</table>

(5) SUGGESTED READING

- ✓ Platzer W, Fritsch H, Kohnel W, Kahle W, Frotscher M. Εγχειρίδιο Περιγραφικής Ανατομικής. 3η βελτιωμένη έκδοση.Nicosia: Broken Hill Publishers LTD, 2011.
- ✓ Moore K, Dalley A, Agur A. Κλινική Ανατομία. 3η έκδοση. Nicosia: Broken Hill Publishers LTD, 2016.
- ✓ Snell R. Clinical anatomy by regions. 9th Edition. Philadelphia, Lippincott Williams & Wilkins, a Wolters Kluwer business, 2012.
- ✓ Faiz O, Moffat D. Anatomy at a Glance. Oxford: Blackwell Science, 2002.

- ✓ Hansen J. Netter’s Anatomy Coloring Book. 2nd Edition, Philadelphia, Saunders Elsevier, 2014.
- ✓ Netter HF. Netter Άτλας Ανατομίας του Ανθρώπου. Αθήνα: BROKEN HILL PUBLISHERS LTD, 3η έκδ./2016
- ✓ Hochschild J. Λειτουργική ανατομική του κινητικού συστήματος. Αθήνα, Ι. Κωνσταντάρας, 1/2019.
- ✓ Gilroy A. Ανατομία Του Ανθρώπου. Αθήνα, Ι. Κωνσταντάρας, 1/2019.
- ✓ Paulsen F, Waschke J. Sobotta Άτλαντας Ανατομικής του Ανθρώπου : Επίτομο. ΠΑΡΙΣΙΑΝΟΥ, 23η/2016
- ✓ Waschke J, Bockers M. T., Paulsen F. Sobotta Ανατομία με Έγχρωμο Άτλαντα. BROKEN HILL PUBLISHERS LTD, 1/2021

MODULE OF PHYSIOLOGY

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
LEVEL OF STUDY	UNDERGRADUATE		
COURSE CODE	Π1-1020	**SEMESTER OF STUDIES**	**1ST**
COURSE TITLE	PHYSIOLOGY		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
THEORY	3	5
TOTAL	3	5

TYPE OF COURSE	GENERAL BACKGROUND
PREREQUISITE COURSES	
LANGUAGE OF TEACHING AND EXAMS	GREEK
COURSE OFFERED TO ERASMUS STUDENTS	YES
COURSE WEBPAGE (URL)	

(2) LEARNING OUTCOMES

Learning outcomes
The aim and objective of the course are for students to understand the physiological functions and homeostatic mechanisms of the human body by system, the general principles of their multifaceted and complex functional interdependence, the physiological parameters of their function, and the potential physiological deviations at the cellular, tissue, organ, and system level. Upon successful completion of the course, the student will be able to:

- Recognize and describe the physiological functions and regulatory mechanisms of the human body at the cellular, tissue, organ, and system level, and delineate potential deviations.

General Competencies

- Autonomous Work
- Teamwork
- Decision Making
- Research, Analysis, and Synthesis of Data and Information, utilizing the necessary technologies

(3) CONTENT OF THE COURSE

- Fundamental concepts of human physiology. Principles of organization and function of the human body at the tissue and system level. Regulation of bodily functions, control systems. Internal environment and homeostasis. Compartmentalization of body fluids, osmoregulation, acid-base balance.
- Cell: Structure and function of the normal cell, structure of the cell membrane, organelles, explanation of the function of transmembrane and intracellular receptors, the nucleus, as well as genetic material and the advancements in the exploration of the genetic code.
- Blood: General properties of blood, cells, plasma, and the physical-chemical properties of plasma. Measurements such as hematocrit, hematopoiesis (fetal and postnatal), methods for studying bone marrow and lymph nodes, approaches to studying complete blood count, hematocrit, hemoglobin, and their significance. Red blood cells (structure, function), hemoglobin (molecular structure, properties of normal hemoglobin, pathological hemoglobins). White blood cells (types, properties of white blood cells by cell group, leukocyte differential count, variations, and their significance). Platelets (structure, properties, function). Immunity—humoral (structure and function of antibodies) and cellular (types of cellular immunity, mechanisms of action, and associated disorders). Coagulation and coagulation disorders. Histocompatibility antigens, ABO blood types, blood group classification, and testing, as well as transfusion-related phenomena.
- Immune System: Fundamental explanations of the structures and functions of the immune system, along with an overview of its disorders.
- Respiratory System: Comparison of the respiratory function of the lungs and blood. Airways (anatomical and physiological aspects). Capillary-alveolar membrane (microanatomy and function). Regulation of respiratory function, types of respiration. Respiratory adaptation in special conditions—hypoxia, hypercapnia, and hypocapnia. The mechanics and work of breathing, spirometric data, major diseases and disorders along with age. Respiratory system tests, respiratory center.
- Cardiovascular System: Anatomical features, systemic and pulmonary circulation. Structure of the myocardium, conduction system of the heart, structure and function of cardiac muscle. Molecular basis of myocardial contraction, resting and action

potential of the cardiac muscle, mechanical response, length-tension relationship. Pacemakers, myocardial contractility, mechanical work of the heart, cardiac efficiency and reserve. Cardiac cycle, stroke volume, heart rate, cardiac output, auscultatory phenomena. Systemic and pulmonary circulation, vascular flow, coronary circulation, vascular resistance, aortic pressure and its disorders, arterial pressure, pulmonary circulation. Bioelectrical phenomena of the heart (ECG). Neural regulation of circulation—vasomotor centers.

- Lymphatic System - Lymph: Structure, composition, and circulation. Lymphatic vessels and lymph nodes.
- Digestive System: Structure of the gastrointestinal tract. Salivary glands. Chewing and swallowing. The stomach and its function. Function of the small and large intestine. Gut microbiota. Gastrointestinal hormones. Vomiting. Pancreas, liver, and bile. Digestion and secretions. Absorption. Nutrition and metabolism. Regulation of food intake. Body composition. Energy expenditure.
- Thermoregulation: Homeothermy. Mechanisms of heat production and heat loss. Central regulation of body temperature. Fever, hypothermia, hyperthermia. Introduction to the nervous and muscular systems from the perspective of homeostasis.
- Endocrine System – Hormones: Hormones and their chemical nature. Mechanism of hormone action. Feedback regulation. Endocrine glands. Hypothalamus and pituitary gland. Explanation of modern perspectives on the interaction between the endocrine system and nervous system (Neuroendocrinology). Pineal gland. Thyroid and parathyroid glands. Adrenal glands. Endocrine functions of the pancreas. Diabetes mellitus. Endocrine pancreatic tumors. Endocrine function of the gastrointestinal tract and the gut-brain axis. Endocrine tumors of the gastrointestinal system. Male and female reproductive systems, reproductive function. Sex hormones. Spermatogenesis. Female reproductive cycle. Sexual intercourse. Fertilization. Pregnancy, including hormonal regulation during pregnancy. Discussion of recent advances in reproductive function and assisted reproductive technologies.
- Kidneys – Urinary System: Anatomy of the kidney, histology of nephrons. Glomerular filtration. Reabsorption and excretion. Concentration and dilution of urine. Urine formation. Functions of the renal tubule. Urination. Fluid and electrolyte balance – pH regulation. Endocrine function of the kidneys. Acid-base balance.

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

Mode of course delivery	Face to face.
Use of information and communication technologies	Use of information and communication technologies - Communication with students (e-class).
Organization of teaching	

Activity	*Semester workload*
Lectures	160

Student assessment

Written examination covering the entire course material (100%).

(5) SUGGESTED READING

- *Silverthorn D.U., Φυσιολογία του ανθρώπου, Αθήνα: Broken Hill Publishers, 2018*
- *Guyton AC, Hall JE. Ιατρική Φυσιολογία. 13η Έκδοση. Αθήνα: Επιστημονικές Εκδόσεις Παρισιάνου ΑΕ, 2017.*
- *Πλέσσας Σ. Φυσιολογία του ανθρώπου. Αθήνα: Φάρμακον Τύπος, 2010.*
- *Hall JE. Ανασκόπηση Ιατρικής Φυσιολογίας. Αθήνα: Επιστημονικές Εκδόσεις Παρισιάνου ΑΕ, 2010*
- *Mulroney SE, Adam MK . Βασικές Αρχές Φυσιολογίας. Αθήνα: Εκδόσεις Π.Χ Πασχαλίδης, 2010.*
- *Χανιώτης Φ. Φυσιολογία του Ανθρώπου. Αθήνα: Εκδόσεις Λίτσας, 2009.*
- *Boron W, Boulpaep E. Ιατρική Φυσιολογία. Αθήνα: Ιατρικές εκδόσεις Π.Χ.Πασχαλίδης, 2006.*
- *McGeown JG. Συνοπτική Φυσιολογία του Ανθρώπου. Αθήνα: Εκδόσεις Π.Χ Πασχαλίδης, 2008.*
- *Netter F. Άτλας Φυσιολογίας του Ανθρώπου. Αθήνα: Εκδόσεις Π.Χ Πασχαλίδης, 2004.*

MODULE OUTLINE OF 'KINESIOLOGY & BIOMECHANICS I'

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
	Π2-1030	SEMESTER	1st
TITLE	KINESIOLOGY & BIOMECHANICS I		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Theory (lectures) and Practical (practical exercises)		Theory: 3 Practical: 2 Total: 5	7
MODULE TYPE	Special Core Course		
PRE-REQUIRED MODULES			
TEACHING AND EXAMINATION LANGUAGE:	Greek		
MODULE SUITABLE for ERASMUS STUDENTS	Yes (English)		
MODULE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes
• The course aims are for the student to acquire the necessary knowledge about kinesiology and biomechanics in the field of Physiotherapy, i.e. the identification and study of human movement. Emphasis is placed both on the function of biological materials and tissues and on the effects of loading on the human tissues and systems. • In particular, the student will study the principles that underlie movement, the mechanics of biological materials, the terminology used, the role of muscle action, the effect of intrinsic and extrinsic factors (e.g. gravity), and the procedures and methodology for motion analysis. The student will gain knowledge about the kinesiology and biomechanics of the shoulder girdle. • The student, after completing the subject successfully, will be able to: • Comprehend and analyze the human movement through the application of principles of mechanics, to demonstrate the movements asked and to name the movements performed, therefore understand and use the relevant terminology • Comprehend and detect the effect of intrinsic and extrinsic factors on movement and be able to modify movement by implementing the desired changes (e.g. in muscle work) by modifying the intrinsic and extrinsic factors (e.g. change positions, change length of lever arm, etc.). • Comprehend the neuromuscular mechanisms that underlie human movement • Define the muscle work performed • Understand the kinesiology and pathokinesiology of the shoulder girdle an its elements

- Identify and assess the function of the shoulder girdle structures during movement and do an in-depth analysis
- Palpate the tissues of the shoulder girdle and perform a manual muscle strength test for specific muscles

- **General Competences - Learning Outcomes**
  - Search, analysis and synthesis of data and information with the use of appropriate technologies (internet, databases, software, etc.)
  - Decision making
  - Individual work
  - Team work
  - Evaluation and self-evaluation
  - Promote of free, creative and deductive thinking
  - Develop skills of oral and written presentation of scientific knowledge

(3) MODULE CONTENT

- **<u>Introduction to Kinesiology and to Mechanics of Movement</u>**

  Historical perspective. The philosophy of the necessity of movement study and its utility in physiotherapy. Biomechanics: Definition, scientific fields and applications, past, present and future. Basic principles. The human body and its parts. Reference systems – Planes and axes of movement. The human body and the external environment. Positions of the human body (standing, prone, etc.). Force, torque, friction, gravity, levers, force couples, pull angle, center of mass, moment – inertia, work – energy.

  <u>*Practical*</u>: Human body and space. Understanding the shape of the human body and its parts. Positions of the body in space. Relation between the body, the body parts and its reference systems (planes and axes). Examples and applications. Student assessment.
- **<u>Movements and reference systems – Terminology</u>**

  Types of bones and joints. Degrees of freedom. Basic principles of joint motion. Terminology and naming of movements. Range of motion. The movements of the parts of the human body and their range of motion.

  <u>*Practical*</u>: Movements of the human body. Identification and execution of all the body movements in different positions in space and in different parts of ROM. Examples and applications. Student assessment.
- **<u>Muscle function</u>**

  Introduction to muscles (structure – types). Physiological and mechanical advantage. Types of muscle contractions. Length-tension relationship and length-velocity relationship. Insertion angle. Basic principles of muscle power control. Muscle force couples in the human body and their role.

  <u>*Practical*</u>: Movements of the human body & muscle work I. Presentation – palpation of muscle parts during contraction. Identification of muscle work during the execution of isolated body parts movement in different positions in space. Examples and application. Student assessment.
- **<u>Coordination of the muscle system</u>**

The role of muscles and the coordination of the muscle system. Single- dual- and multi joint muscles. Agonists, antagonists, stabilizers & neutralizers.

Force systems. Compilation and analysis of forces. Action – reaction. Levers and pulleys. Lever arms. Kinetic chains.

Practical: Movements of the human body and muscle work II. Identification – demonstration of single- and multi joint muscles. Identification of muscle work during the execution of movements of the human body in different positions in space. Identification of muscle groups and their role during their activity in specific movements. Examples and applications. Student assessment.

- **Kinesiology of the human body as a whole**

  Introduction to the kinesiology of the upper & lower limb: osteology, muscle groups, function and role. Scapulohumeral rhythm. Differences and similarities between upper and lower limb.

  Introduction to the kinesiology of the spine: osteology, muscle groups, function and role of the spinal segments in posture and motion. Differences and similarities between the spinal segments. Pelvic movements – pelvic lumbar rhythm. Torso-pelvis-lower limb linkage.

  Characteristic examples of movements, or structures of the human body where the principles taught in previous lectures are presented and analyzed: cooperation of quadriceps – hamstrings and closed-open kinetic chain, levers and plantar flexors, force couple – pelvic tilts and kinetic chain, insertion of elbow muscles – speed and force, etc.

  Practical: Movements of the human body and muscle work III. Identification of muscle work during the execution of movements of the human body in different positions in space, in different ranges of motion, in combination with the physiologic and mechanical advantage. Identification of muscle groups and their role during specific movements. Role and activation of single – and multi joint muscles in specific movements. Examples and applications. Student assessment.

- **Introduction to the analysis of human movement**

  Stages of motion analysis – methodology. Observation. Defining the limits of movement. Dividing the movement into stages. Identification of factors that affect movement. Reasonings and conclusions. Kinesiological analysis of everyday activities: ascend-descend stairs, change of body position, etc.

  Practical: Movements of the human body and muscle work IV. Identification, analysis and performance by the students of movements that impose the adaptation of muscle work regarding the type of muscle contraction and the cooperation between muscle groups. Examples and application. Student assessment.

- **Effect of extrinsic factors on movement**

  Movement and physical environment: earth pull, air resistance, effect of fluids, external resistance, etc. Movement and external objects: push and pull, throwing, striking, kicking, impact, friction, hang and support. Presentation and analysis of characteristic examples.

  Practical: Identify and demonstrate the effect of extrinsic and intrinsic factors on muscle work: increase-decrease of the force/resistance lever arm, change of kinetic chain, use of objects (springs, elastic bands, etc). Examples and applications. Student assessment.

- **Biomechanical study of human movement**

Observation. Quantitative parameters of movement: record time and distance. Kinematic analysis: Definition, basic principles, techniques (photographic, goniometry, etc.). Alignment – cyclic motion, kinematics in 2D and 3D. Translation, velocity, etc.

Kinetic analysis: Definition, basic principles, techniques. Scalar and vector quantities. Internal-external product. Internal & external forces.

Energy requirements of motion. Connection between kinetic and kinematic analysis. Techniques: Force plates, optoelectronic markers, electrogoniometers, EMG, etc.).

Practical: Presentation, analysis and demonstration of translations of the human body with emphasis placed on particular musculoskeletal structures, e.g. shoulder girdle & scapulohumeral rhythm, torso-pelvis and pelvic rhythm, etc. Examples and applications. Student assessment.

- **Neuromuscular control of human movement**

  Neurophysiological foundation of the human movement. Central and peripheral nervous system. Proprioceptors. Motor unit. Muscle tone. Volitional and reflex movement.

  Practical: Presentation and analysis of human movement examples that incorporate the elements already taught in previous sections in order to integrate knowledge. Student assessment.

- **Standing posture & Balance**

  Centre of gravity, stability and equilibrium. Balance control and the factors that affect it. Muscle work in standing. Significance of standing posture. Support and factors regarding standing posture. Postural and balance adaptations and external factors. Adaptations due to change of position: quadrupedal, kneeling position, etc.

  Practical: Presentation, performance and analysis by the students of movements & the locomotion of the human body, as well as everyday activities (e.g. ascend stairs, sit to stand, etc). Exercises in the methodology of motion analysis. Examples and applications with emphasis placed on standing posture and balance. Student assessment.

- **Basic principles of biomechanics and of the mechanics of biological materials and fluids**

  Basic principles of strength of materials. Types of loading (compressive, tension, shear, rotational, flexion, complex). Stress-strain graphs (yield points, failure points, fatigue, latency, elasticity, plasticity). Constants of properties of materials (young modulus, shear modulus, poison's ratio, etc). Isotropic, anisotropic, orthotropic materials. Biological materials – Introduction. Viscosity – elasticity – viscoelasticity. Viscoelastic properties and simple mathematical models of viscoelastic materials (creep, etc.).

  Mechanical properties: Bone, cartilage, tendon, ligament, skin, neural tissue. Effects of aging and immobilization on biological materials. Basic principles of gas and fluid mechanics. Types of flow.

  Practical: Analysis of complex activities. Presentation and analysis of complex activities (e.g. sport) that include propulsion, pull, throwing, striking, kicking, impact, support etc. Presentation and analysis of complex hypothetical activities (e.g. body activities with constriction of the movement of a body segment) aiming at the observation and identification of the differences compared to normal movement and at the utility of such information for clinical practice. Examples and applications. Student assessment.

- **Introduction to human gait**

Historical perspective. Utility of the study of gait. Description. Definitions and phases – the gait cycle. Anatomical and kinesiological analysis. Mechanical principles of gait. Macroscopic kinematic analysis temporal and spatial parameters. Gait variations. Running. Differences in the phases of gait/running.

Practical: Observation and performance of the gait cycle. Gross recording of temporal and spatial characteristics. Relationship between temporal and spatial parameters. The effect of various factors (speed, terrain, etc.) on the gait cycle. Examples and applications. Student assessment.

- **Kinesiology and biomechanics of the shoulder girdle**

  Scapula, clavicle, humerus. Scapulothoracic, glenohumeral, acromioclavicular and sternoclavicular joint. Ligaments. Bone geometry of joint surfaces. Arthrokinematics and osteokinematics of the region.

  Muscles of the region and their function. Agonists, antagonists, neutralizers. Stabilizing role of the muscles & stability mechanisms. Muscular force couples and comparison of muscle forces. Rotator cuff muscles. Analysis of the forces and loads in the shoulder girdle during activities. Analysis of functional activities and clinical scenarios. Pathokinesiology.

  Practical: Observation – overview of the region of the shoulder girdle of a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing. Analysis of movements in open and closed kinetic chain with the use of equipment (elastic bands, weights, horizontal bar, etc.). Examples and applications. Student assessment.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence.
USE OF INFORMATION & COMMUNICATION TECHNOLOGY (ICT)	Open e-class platform
TEACHING ORGANIZATION	***Activity*** / ***Semester workload*** Lectures: 150 Practical: 60 Total: 210
STUDENT ASSESSMENT	Final written examination (50%), which may include: ✓ Multiple choice questions covering the whole course ✓ Short or full answer questions covering the whole course The practical part will be assessed during the semester with obligatory practical exercises, which are required for the final oral examination (50%) for the demonstration of relevant skills and motion analysis. There will be a questions' bank with the questions of previous examinations and projects.

(5) SUGGESTED READING

- *Abernethy, B. The biophysical foundations of human movement. Champaign: Human Kinetics, 2005.*
- *Craik, R.L., Oatis, C.A. Gait analysis: theory and application. St. Louis: Mosby, 1995.*
- *Cutter, N.C., Kevorkian, G.C. Handbook of manual muscle testing. New York: McGraw-Hill, 1999.*
- *Daniels & Worthingham. Έλεγχος Μυϊκής Ισχύος. Salto, 2000.*
- *Enoka, R.M. Αρχές Εμβιομηχανικής & Φυσιολογίας της Κίνησης. Εκδόσεις Πασχαλίδης, 2007.*
- *Floyd, R. T. Manual of structural kinesiology. Boston: McGraw Hill, 2007.*
- *Frost, R. Applied kinesiology: a training manual and reference book of basic principles and practices. Berkeley: North Atlantic Books, 2002.*
- *Hall, S.J. Εμβιομηχανική. Επιστημονικές Εκδόσεις Παρισιάνου, Αθήνα, 2005.*
- *Hamill, J., Knutzen, K.M. Βασική βιομηχανική της ανθρώπινης κίνησης. Αθήνα, Πασχαλίδης, 2007.*
- *Hamilton, N., Luttgens, K. Κινησιολογία: επιστημονική βάση της ανθρώπινης κίνησης. Αθήνα: Επιστημονικές εκδόσεις Παρισιάνου Α.Ε , 2013.*
- *Hoffman, S.J. Introduction to kinesiology: studying physical activity. Champaign: Human Kinetics, 2005.*
- *Houglum P.A. & Bertoli D.B. Brunnstrom's κλινική κινησιολογία. Αθήνα :Επιστημονικές εκδόσεις Παρισιάνου Α.Ε , 2012.*
- *Kapandji, I. A. Λειτουργική Ανατομική των Αρθρώσεων. (Vol. I,II,III), Πασχαλίδης, 2021.*
- *Levangie, P.K., Norkin, C.C. Joint structure and function: a comprehensive analysis. Philadelphia: F.A. Davis Company, 2001.*
- *Muscolino J.E. Κινησιολογία. Εκδόσεος Λαγός 2021.*
- *Neumann, D.A. Kinesiology of the musculoskeletal system: foundations for physical rehabilitation. 3rd edition, Elsevier 2017*
- *Nordin, M., Frankel, V.H. Basic biomechanics of the musculoskeletal system. Philadelphia: Lippincott Williams & Wilkins, 2001.*
- *Oatis, C.A. Κινησιολογία. Η μηχανική & η παθομηχανική της ανθρώπινης κίνησης. Τόμος Ι-ΙΙ, Εκδόσεις Gotsis 2013.*
- *Ozkaya, N.,Nordin, M. Fundamentals of biomechanics: equilibrium, motion and deformation. New York: Springer, 1999.*
- *Perry J. Gait analysis: Normal and Pathological function. SLACK Incorporated 1992.*
- *Perry, J.F., Rohe, D.A., Garcia, A.O. The kinesiology workbook, Philadelphia: F.A. Davis Company, 1992.*
- *Rose, J., Gamble, J.G. Human walking. Philedelphia: Lippincott Williams & Wilkins, 2006.*

Related scientific journals

- *Journal of Biomechanics*
- *Journal of Anatomy*
- *Clinical Biomechanics*
- *Electromyography and Clinical Neurophysiology*

- *Journal of Electromyography and Kinesiology*
- *Spine*

MODULE OUTLINE OF 'FIRST AIDS'

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDEGRADUATE		
MODULE CODE	Π2-1040	**SEMESTER**	**1st**
MODULE TITLE	FIRST AIDS		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Theory (Lectures)	3	5

MODULE TYPE	General Core Course
PRE-REQUIRED MODULES	
TEACHING AND EXAMINATION LANGUAGE	Greek
MODULE SUITABLE for ERASMUS STUDENTS	
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
First Aid is without doubt a useful subject, not only for students, but also for the general public, since emergency incidents in the streets, at work or at home that require assistance have recently been on the increase. The aim of this course is to teach the student in a scientific yet simple way how to use available means to provide care to patients or injured people in sudden life-threatening situations.
Learning Outcomes
After completing the course the students should be able to: • Recognize the objectives of first aid • Assess emergency situations that require specialized assistance • Recognize the symptoms of injuries and pathological conditions that require immediate first aid • To determine the way to transport the victim in emergency situations • Provide first aid in specific situations (e.g. drowning, choking) if necessary. • Provide first aid to a collapsed victim • Know how to use simple objects/instruments to provide first aid. • To use the first aid pharmacy
General Competences
• Analysis and synthesis of data and information • Decision making • Autonomous work • Critical Thinking

(3) MODULE CONTENT

Introduction, aims of first aid, first steps, assessment of the patient, examination and removal of clothes. • Introduction, purpose of first aid, first steps of first aid, patient assessment and examination and removal of clothing. • Injury from mechanical causes, traffic injuries, abrasion, contusion, trauma, fractures, dislocations, sprains, fractures of limbs, skull fracture facial fracture, spine fracture, identification, first aid. • Injury from mechanical causes, chest, abdomen and eye injuries, identification, first aid. • Haemorrhage. Types of haemorrhage, clinical presentation, first aid. Haemorrhage from various organs, abnormal haemorrhage (rhinorrhagia, otorrhagia, gastrorrhagia, haemoptysis, varicose/haemorrhoids). Haemostasis, Shock, first aid.

- Introduction to basic cardiopulmonary resuscitation (CPR). Adult Basic Life Support (BLS). CPR with a defibrillator. Obstruction of airways by a foreign body / choking, Provision of first aid.
- Emergencies in Children and infants: basic cardiopulmonary resuscitation resuscitation, foreign body airway obstruction/ choking. Provision of first aid.
- Urgent Respiratory and Cardiovascular problems. Shortness of breath, asthma, acute pulmonary edema, angina pectoris, myocardial infarction, drowning. Provision of first aid.
- Urgent Neurological problems. Stroke, seizure, behavioral disorders. Provision of first aid.
- Allergic reactions, anaphylactic shock. Specimens of insects, snakes, scorpions, dogs. Poisonings, signs and symptoms, removal and neutralization of the poison. Classification of symptoms, special treatments and antidotes of poisons. Recognition and first aid.
- Injury due to natural causes. Heat (burn, heatstroke), cold (frostbite, perniosis), sun, sunstroke, electricity (electrocution, lightning strike), irradiation, drowning, choking, crash syndrome.
- Emergencies from environmental impact. Hypothermia, hyperthermia, electric shock, burns. Recognition and first aid.
- Bandages, types and varieties. Triangular bandages, head bandages, bandages for the upper extremity, the chest, the hand and foot, the mandible, the knee and elbow. Cylindrical bandages: wrist and upper extremity. Figure-eight bandaging of the elbow, the upper extremity, the fingers and the foot. Bandaging the head and the eye. Reticular bandages. Splints. First Aid kit.
- Carrying a patient. Stretchers, deploying a stretcher, placing a patient on the stretcher, other types of stretchers. Carrying the patient or injured person, carrying on a stretcher, with the hands, on the shoulders, transfer to vehicle.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform	
TEACHING ORGANIZATION	**Activity a**	**Semester workload**
	Lectures	140
	Course Total	140

STUDENT ASSESSMENT	Final written examination (100%) of all module content, through : ✓ Multiple choice questions ✓ True-or-false questions ✓ Gap-filling ✓ Short answer questions ✓ Open ended questions

(5) SUGGESTED READING

1. *AAOS (American Academy of Orthopaedic Surgeons :Επείγουσα Ιατρική Broken Hill-Πασχαλίδης 2014*
2. *Μπαλτόπουλος Γ. Πρώτες βοήθειες. Αθήνα: Ιατρικές Εκδόσεις Π.Χ Πασχαλίδης,2001.*
3. *Πετρίδης Α, Ευτυχίδου ΕΠ, Τσόχας Κ. Πρώτες Βοήθειες. Αθήνα: Ιατρικές Εκδόσεις Π.Χ Πασχαλίδης, 2012.*
4. *Πρώτες Βοήθειες Βρετανικού Ερυθρού Σταυρού. Αθήνα: Ιατρικές Εκδόσεις Λίτσας, 2010.*
5. *American Red Cross. Textbook of first aid fast. American National Red Cross, 2003.*
6. *Jones & Bartlett Learning. Emergency Care and transportation of the sick and injured. NY: American Academy of Orthopaedic Surgery, 2010.*
7. *Επείγουσα ιατρική με έγχρωμες εικόνες, Knoop Kevin J.,Lawrence Stack B.,Storrow Alan B., Πασχαλίδης – Broken Hill, Αθήνα 2008*
8. *Σεραφείμ Νανας: Πρώτες Βοήθειες-Προνοσοκομειακή Ιατρική-Καρδιοπνευμονική Αναζωογόννηση Εκδόσεις Ι.Παρισιάνος 2013*
9. *Schua S. Εγχειρίδιο επειγόντων περιστατικών. Αθήνα: Επιστημονικές Εκδόσεις Παρισιάνου ΑΕ, 2006*
10. *Olasveengen, Theresa M., et al. "European resuscitation council guidelines 2021: basic life support." Resuscitation 161 (2021): 98- 114.*
11. *Lott, Carsten, et al. "European Resuscitation Council Guidelines 2021: cardiac arrest in special circumstances." Resuscitation 161 (2021): 152-219.*
12. *Van de Voorde, Patrick, et al. "European resuscitation council guidelines 2021: paediatric life support." Resuscitation 161 (2021): 327-387.*
13. *Ong, Gene Y., et al. "Comparison of paediatric basic life support guidelines endorsed by member councils of Resuscitation Council of Asia." Resuscitation Plus 16 (2023): 100506.*

Related scientific journals
- Resuscitation
- Scandinavian journal of trauma, resuscitation and emergency medicine
- Critical care and resuscitation : journal of the Australasian Academy of Critical Care Medicine
- Resuscitation Plus

MODULE OUTLINE OF DEONTOLOGY AND BIOETHICS

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	П2-1050	**Semester**	**1st**
Module Title	**Deontology and Bioethics**		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
THEORY: Interactive Lectures	3	5
Total	3	

Module Type	Special Core Module
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	
Module Website (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes

The course is the introduction to the education of students on issues related to the written and "unwritten" laws-principles of Bioethics and health profession Ethics, governing the health professions in Greece and internationally. Students are taught the role and contribution of the science of physiotherapy in the field of health and the relationship of the physiotherapist with the patient, with his relatives and with other health professionals. The specialized modules that constitute the curriculum of the course focus mainly on:

a) understanding the historical course of the concept of "health-disease" in the evolution of humanity,
b) the understanding of the basic principles of ethics and bioethics in the application of physiotherapy techniques and methods,
c) the recognition of indications and contra-indications according to the bioethical dimension of the therapeutic objectives;
d) the understanding of basic ethical principles in health research and specializing in physiotherapy,
e) the understanding of the basic ethical principles in the exercise of a health profession and specializing in physiotherapy;
f) understanding and analyzing the Codes of Ethics of institutions and professional bodies in the field of health and specializing in physiotherapy
g) analysis of basic contemporary bioethical concerns arising from developments in the field of health and
h) analyzing the history of physiotherapy and understanding the legal status of the profession.

In this way, students will be able to understand the value of respect for the patient and the importance of securing consent in decision-making. In addition, they will be able to understand the importance of bioethics in the field of research. Particular emphasis is placed on the investigation of the modern perception of the established position of the physiotherapist in multipurpose health service centers, at all levels of health care and his/her participation in interdisciplinary working groups.

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

- Understand the basic concepts of Bioethics and health profession Ethics
- Be aware of the importance of these sciences in the exercise of the profession
- Acquire skills in the preparation and design of research programs in terms of bioethics
- Have the ability to analyze simple and complex concepts related to sociology in the field of health Have the ability to collaborate with his/her fellow students to analyze and present complex issues related to interdisciplinary cooperation
- Have the ability to understand the importance of adherence to the principles of bioethics and ethics in the field of health

General Competences

- Analysis and synthesis of data and information
- Decision-making
- Individual work
- Teamwork
- Design and management of physiotherapy and other health partnerships

(3) MODULE CONTENT

Theoretical training of students

- HISTORY IN THE FIELD OF HEALTH
- HISTORICAL OVERVIEW OF THE SCIENCE OF PHYSIOTHERAPY
- SOCIAL DIMENSION OF HEALTH
- PRINCIPLE OF AUTONOMY AND RESPECT FOR PPATIENTS
- MEDICAL CONFIDENTIALITY
- PRINCIPLE OF CONSENSUS
- BIOETHICAL PRINCIPLES IN EXPERIMENTATION
- BIOETHICAL PRINCIPLES IN RESEARCH
- PRINCIPLES IN THE PRACTICE OF THE PROFESSION
- PATIENT-HEALTH-FAMILY ENVIRONMENT RELATIONSHIPS
- BIOETHICAL DILEMMAS ARISING FROM EVOLUTION OR SOCIAL CHANGE
- THE PERCEPTIONS OF HEALTH PROFESSIONALS
- QUALITY IN HEALTH PROFESSIONS
- INTERDISCIPLINARY COOPERATION-PROTOCOLS
- LEGALLY REGULATED WORKPLACES - PHYSIOTHERAPISTS

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery	Face to Face	
Use of Information and Communication Technology (ICT)	Use of ICT in Teaching and Communication with students (e-class)	
Teaching Organization	**Activity**	**Semester Workload**
	Lectures	110
	Exercise	10
	Group work on bioethics analysis and study of legislation	10
	Small individual tasks of understanding topics	10

	Total	**140**
Student Assessment	Το μάθημα αξιολογείται με • Παρουσίαση ομαδικής εργασίας (30%) και • γραπτή τελική εξέταση (70%) που περιλαμβάνει χορήγηση ερωτηματολογίων που καλύπτουν όλη την ύλη του μαθήματος και αφορούν σε ερωτήσεις πολλαπλής επιλογής, σωστού-λάθους, συμπλήρωση κενών και ανάπτυξη κειμένου	

(5) SUGGESTED READING

Suggested Reading:

1. Ι.Πουλής, Π.Βλάχου :ΒΙΟΗΘΙΚΗ ΚΑΙ ΔΕΟΝΤΟΛΟΓΙΑ ΣΤΑ ΕΠΑΓΓΕΛΜΑΤΑ ΥΓΕΙΑΣ, ΑΘΗΝΑ 2017, ΕΚ.ΚΩΣΤΑΝΤΑΡΑΣ
2. Μ.Ηγουμενίδης : Βασική Βιοηθική , BROKEN HILL PUBLISHERS LTD, CYPRUS,2020
3. M.Kuczewski & R.Polansky, ΒΙΟΗΘΙΚΗ-ΑΡΧΑΙΑ ΘΕΜΑΤΑ ΣΕ ΣΥΧΓΡΟΝΟΥΣ ΠΡΟΒΛΗΜΑΤΙΣΜΟΥΣ,εκ.Τραυλός, Αθήνα 2007

Relevant Scientific Journals:

- Bioethics, © John Wiley & Sons Ltd
- The American Journal of Bioethics
- Welcome to Bioethics Today

2nd SEMESTER

s/n	MANDATORY			LECTURE		WORKSHOP		TOTAL		SEMESTER WORKLOAD	ECTS
	MODULES			HOURS	WORKLOAD	HOURS	WORKLOAD	HOURS	WORKLOAD		
	MANDATORY MODULES	CATEGORY	CODE								
1	ANATOMY II	GBM	П2-2010	3	135			3	135	135	5
2	KINESIOLOGY & BIOMECHANICS II	SBM	П2-2020	3	135	2	45	5	180	180	6
3	NEUROPHYSIOLOGY	GBM	П2-2030	3	135			3	135	135	4
4	INTERNAL MEDICINE I	GBM	П2-2040	3	135			3	135	135	4
5	ORTHOPAEDICS	GBM	П2-2050	3	135			3	135	135	5
6	ELECTROPHYSICAL AGENTS IN PT	SM	П2-2060	3	135	2	45	5	180	180	6
TOTAL				**18**	**810**	**4**	**90**	**22**	**900**	**900**	**30**

MODULE OUTLINE OF 'ANATOMY II'

(1) GENERAL

FACULTY	FACULTY OF HEALTH & CARING SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	**Π2-2010**	**SEMESTER**	**2nd**
MODULE TITLE	ANATOMY II		

INDEPENDENT TEACHING ACTIVITIES	**Weekly Teaching Hours**	**ECTS**
Theory (Lectures)	3	5

MODULE TYPE	General Core Module
PRE-REQUIRED MODULES:	
TEACHING AND EXAMINATION LANGUAGE	Greek
SUITABLE FOR ERASMUS STUDENTS	Yes (English), undertaking an essay
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

After completing the module, students should be able to:

- Know the fundamental structure of nerve cell and its functional role.
- Recognize the anatomical, developmental and functional-anatomic divisions of the nervous system (somatic-vegetative nervous system, central-peripheral nervous system, forebrain-hindbrain).
- Know the detailed description of the structures compromised the central nervous system: cerebrum (hemispheres and basal ganglia), diecenphalon midbrain, cerebellum, romboid brain, spinal cord.
- Recognize the separate functional systems and structures that compose them and their connections (motor-somatosensory-limbic system).

- Know the structure of the peripheral nervous system, the muscle groups in which the peripheral nerves are distributed, and the movements subserved by them.
- Know the general description of the parts of the respiratory, urinary, gastrointestinal and endocrine system.
- Know the general description of the sensory organs.
- Use the knowledge gained to deepen the clinical problem and plan appropriate therapeutic intervention with safety for the patient.
- Participate in interdisciplinary working groups to holistically manage patient problems.
- Be familiar with the mechanisms of searching for new scientific knowledge, evaluating new information and applying innovative therapeutic methods.

GENERAL COMPETENCES

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Group work- participation in interdisciplinary groups
- Respect for diversity and multiculturalism
- Demonstration of social, professional and ethical responsibility and sensibility on gender issues

(3) MODULE CONTENT

- Structure and function of the neuron -neuroglia.
- Development of nervous system.
- Meninges, cerebrospinal fluid, brain ventricles.
- Brain vascular anatomy (arteries and veins).
- Cerebrum: hemispheres, basal ganglia.
- Diencephalon: thalamus, hypothalamus, the epithalamus, subthalamus, subthalamic nucleus.
- Cerebellum.
- Brainstem: midbrain, pons, medulla, cranial nerves.
- Spinal cord.
- Peripheral nervous system.
- Autonomic nervous system.
- Functional systems (pyramidal, extrapyramidal, sensory (exteroceptive, proprioceptive).
- Sensory organs: eye, ear.
- Structure of respiratory system parts (nose, larynx, trachea, bronchi, lungs).

- Structure of the urogenital system parts (kidney, ureter, bladder, urethra, internal and external genital organs).
- Structure of the gastrointestinal tract (oral cavity, pharynx, esophagus, stomach, small and large intestine, liver, pancreas, gall bladder).
- Structure of endocrine system parts (thyroid, parathyroid, adrenal, pancreatic islets, diffuse endocrine system).
- Skin: layers and skin components.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT DELIVERY

<table>
<tr><td>DELIVERY</td><td>Physical presence</td></tr>
<tr><td>USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)</td><td>Open e-class platform</td></tr>
<tr><td>TEACHING ORGANIZATION</td><td>
<table>
<tr><th>Activity</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td></td></tr>
<tr><td>Posting and distribution of literature</td><td></td></tr>
<tr><td>Interactive teaching</td><td></td></tr>
<tr><td>Guest speakers approved by the Physiotherapy Department</td><td></td></tr>
<tr><td>Information relating to scientific activity (conferences, meetings)</td><td></td></tr>
<tr><td>Total</td><td>135</td></tr>
</table>
</td></tr>
<tr><td>STUDENT ASSESSMENT</td><td>Final written examination (100%) of all module content, through:

✓ Multiple choice questions
✓ True-or-false questions
✓ Gap-filling
✓ Short answer questions
✓ Open ended questions</td></tr>
<tr><td colspan="2"></td></tr>
</table>

(5) SUGGESTED READING

- ✓ Platzer W, Fritsch H, Kohnel W, Kahle W, Frotscher M. Εγχειρίδιο Περιγραφικής Ανατομικής. 4/2023. BROKEN HILL PUBLISHERS LTD
- ✓ Hansen J, Rubin M, Safdieh J. Netter's Κλινική Ανατομία και Νευροανατομία 3/2023. BROKEN HILL PUBLISHERS LTD
- ✓ Johnson. ΝΕΥΡΟΑΝΑΤΟΜΙΑ,1/2011. ΙΩΑΝΝΗΣ ΚΩΝΣΤΑΝΤΑΡΑΣ
- ✓ Waxman St.Κλινική Νευροανατομία, 1/2013. BROKEN HILL PUBLISHERS LTD
- ✓ Παπαδόπουλος ΓΧ, Κεντρικό Νευρικό Σύστημα του ανθρώπου. 1/2021. UNIVERSITY STUDIO PRESS
- ✓ Marieb, Wilhelm, Mallatt. Ανατομία. 8/2018. ΛΑΓΟΣ ΔΗΜΗΤΡΙΟΣ ΕΚΔΟΣΕΙΣ ΜΟΝΟΠΡΟΣΩΠΗ Ι.Κ.Ε.

MODULE OUTLINE OF 'KINESIOLOGY & BIOMECHANICS II'

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	Π2-2020	SEMESTER	2nd
TITLE	KINESIOLOGY & BIOMECHANICS II		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Theory (lectures) and Practical (practical exercises)		Theory: 3 Practical: 2 Total: 5	6
MODULE TYPE	Special Core Course		
PRE-REQUIRED MODULES			
TEACHING AND EXAMINATION LANGUAGE:	Greek		
MODULE SUITABLE for ERASMUS STUDENTS	Yes (English)		
MODULE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes

The course aims are for the student to acquire the necessary knowledge about kinesiology and biomechanics in the field of Physiotherapy, i.e. the study and the analysis of human movement, with emphasis placed on the study of the activity of musculoskeletal structures, as well as on the study of the effect of loading on structures and systems of the human body. More specifically, the student will study in-depth all the structures of the human body, as well as the way each structure contributes to stabilization and motion. The student will comprehend the effect of various factors on motion, therefore he/she will gain awareness of the abnormal motion and of the differences between normal and ab normal motion.

After completing the course successfully, the student will be able to:

- Have an in-depth knowledge of the structure and function of the musculoskeletal system and its contribution to the movements and locomotion of the human body.
- Comprehend and analyze normal and abnormal motion.
- Recognize the neuromuscular mechanisms that underlie motion and define objectively the muscle work performed by each musculoskeletal structure
- Comprehend the effect of intrinsic and extrinsic factors on motion and be able to modify motion accordingly (e.g. decrease of demands for a given muscle work, decrease of stress, etc.)
- Palpate the regions under study and perform a manual strength test of the body muscles.

General Competences - Learning Outcomes

- Search, analyze and compose data and information through the use of appropriate technology (internet, databases, software, etc.)
- Decision making
- Individual work
- Team work
- Evaluation and self-evaluation
- Promote of free, creative and deductive thinking
- Develop skills of oral and written presentation of scientific knowledge

(3) MODULE CONTENT

- **<u>Kinesiology and Biomechanics of the elbow and forearm</u>**

  Distal forearm, proximal radius and ulna. Humeroulnar, radiohumeral and proximal radioulnar joints. Ligaments. Bone geometry of joint surfaces. Arthrokinematics and osteokinematics of the region.
  Muscles in the region and their function. Agonists, antagonists, neutralizers. Stabilizing role of muscles and stability mechanisms. Comparison between muscle forces and differentiation between pronation, supination and neutral position. Analysis of forces and loads in the elbow during activities and the use of aids (crutches, etc.). Analysis of functional activities an clinical scenarios. Pathokinesiology.
  <u>Practical</u>: Observation-overview of the elbow region of a volunteer and comparison to a model. Palpation of muscles and non-contractile structures of the region. Muscle strength testing of the region. Motion analysis in open and closed kinetic chain with the use of equipment (elastic bands, weights, horizontal bar, etc.). Examples and applications. Student assessment.
- **<u>Kinesiology and Biomechanics of the wrist</u>**

  Distal radius, distal ulna, carpal bones. Distal radioulnar joint, radiocarpal joint and other carpal joints. Ligaments. Bone geometry of joint surfaces. Arthrokinematics and osteokinematics of the region.
  Muscles in the region and their function. Agonists-antagonists- neutralizers. Stabilizing role of muscles and stability mechanisms. Comparison of muscles forces with radial and ulnar deviation. Force and loads analysis in the wrist during activities and use of aids (crutches, etc.). Analysis of functional activities and clinical scenarios. Pathokinesiology.
  <u>Practical</u>: Observation-oveview of the capral region of a volounteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis in open and closed chain with the use of equipment (elastic bands, weights, horizontal bar, etc.). Examples and application. Student assessment.
- **<u>Kinesiology and Biomechanics of the hand</u>**

  Metacarpals and phalanges of the thumb and fingers. Carpometacarpal, midcarpal, metacarpophalangeal and interphalangeal joints of the thumb and fingers. Ligaments. Bone geometry of joint surfaces. Arthrokinematics and osteokinematics.
  Muscles in the region and their function. Agonists-antagonists- neutralizers. Stabilizing role of muscles and stability mechanisms. Comparison of muscle forces. Synergistic function of the forearm muscles in the wrist and hand. The role of multi-joint muscles and their pulleys in hand function. Architecture of the hand as a whole. The hand as tool. Grips – prehension. Deformities in functional positions. The strength of fist. Force and loads analysis in the thumb and fingers

during activities and the use of objects (e.g. pencil). Analysis of functional activities and clinical scenarios. Pathokinesiology.
Practical: Observation-overview of the hand region in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis in open and closed kinetic chain with the use of equipment (elastic bands, weights, horizontal bar, etc.). Awareness of the grips in action. Examples and applications. Student assessment.

- **Kinesiology and Biomechanics of the head**

  The role of the facial and ocular muscles. Mechanics of voice and relevant musculature. Mechanics of swallowing. Tempomandibular joint and function. Force analysis in the tempomandibular joint.
  Practical: Observation-overview of the head region in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis with emphasis placed on the activation of isolated structures. Examples and applications. Student assessment.

- **Kinesiology and Biomechanics of the cervical spine**

  Bones, joints, ligaments and muscles: structure, kinematics, arthrokinematics, kinetics. Muscles and their function. Agonists – antagonists, neutralizers, stabilizers. Force and loads analysis in the cervical spine during function. Pathokinesiology. Clinical observations.
  Practical: Observation-overview of the cervical spine in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis with emphasis placed on the activation of isolated structures. Examples and applications. Student assessment.

- **Kinesiology and Biomechanics of the thoracic region – Chest – Breathing**

  Bones, joints, ligaments & muscles: structure, kinematics, arthrokinematics and kinetics. Muscles and their function. Agonists- antagonists – neutralizers – stabilizers. Force and loads analysis in the thoracic spine during function. Pathokinesiology. Clinical observations.
  Practical: Observation-overview of the thoracic spine in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis with emphasis on the activation of isolated structures during breathing. Examples and applications. Student assessment.

- **Kinesiology and Biomechanics of the lumbar region**

  Bones, joints, ligaments & muscles: structure, kinematics, arthrokinematics and kinetics. Muscles and their function. Agonists- antagonists – neutralizers – stabilizers. Force and loads analysis in the lumbar spine during function. Pathokinesiology. Clinical observations.
  Practical: Observation-overview of the lumbar spine in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis with emphasis placed on the activation of isolated structures. Examples and applications. Student assessment.

- **Kinesiology and Biomechanics of the pelvis and spine as a whole**

  Bones, joints, ligaments & muscles: structure, kinematics, arthrokinematics and kinetics. Muscles and their function. Agonists- antagonists – neutralizers – stabilizers. Force and loads analysis in the pelvic during function. Pathokinesiology. Clinical observations. Pelvic floor. Cooperation between the spine regions and the pelvis during body motion. Motion analysis.

Practical: Observation-overview of the pelvic region in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis with emphasis placed on the activation of isolated structures. Pelvic floor exercises. Examples and applications. Student assessment.

- **Kinesiology and Biomechanics of the hip**

  Innominate bone and proximal femur. The hip joint. Ligaments. Bone geometry of joint surfaces & normal joint alignment. Arthrokinematics and osteokinematics of the region.
  Muscles in the region and their function. Agonists- antagonists – neutralizers – stabilizers. Stabilizing role of the muscles and stability mechanisms. Muscle forces comparison. Force and loads analysis in the hip during activities (e.g. single-leg stance) and use of aids (crutches, etc.). Analysis of functional activities and clinical scenarios. Pathokinesiology.
  Practical: Observation-overview of the hip region in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis in open and closed kinetic chain with the use of equipment (elastic bands, weights, etc.). Examples and applications. Student assessment.

- **Kinesiology and Biomechanics of the knee and the patellofemoral joint**

  Distal femur, patella and proximal tibia and fibula. Tibiofemoral and patellofemoral joint. Ligaments. Bone geometry of joint surfaces & normal joint alignment. Arthrokinematics and osteokinematics of the region.
  Muscles in the region and their function. Agonists- antagonists – neutralizers – stabilizers. Stabilizing role of the muscles and stability mechanisms. Muscle forces comparison. Force and loads analysis in the knee during activities (e.g. single-leg stance) and use of aids (crutches, etc.). Analysis of functional activities and clinical scenarios. Pathokinesiology.
  Practical: Observation-overview of the knee region in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis in open and closed kinetic chain with the use of equipment (elastic bands, weights, etc.). Examples and applications. Student assessment.

- **Kinesiology and biomechanics of the ankle and the foot**

  Distal tibia and fibula, tarsal bones, metatarsals and toe phalanges. Proximal and distal tibiofibular, ankle, subtalar and other joints of the foot. Ligaments. Bone geometry of joint surfaces & normal joint alignment. Arthrokinematics and osteokinematics of the region. Total motion of the foot. Foot arches.
  Muscles in the region and their function. Agonists- antagonists – neutralizers – stabilizers. Stabilizing role of the muscles and stability mechanisms. Muscle forces comparison. Force and loads analysis in the ankle and other joints of the foot during activities (e.g. single-leg stance) and use of aids (crutches, etc.). Loads on the plantar surface of the foot during stance. Analysis of functional activities and clinical scenarios. Pathokinesiology.
  Practical: Observation-overview of the ankle and foot region in a volunteer and comparison to a model. Palpation of muscles and non-contractile structures in the region. Muscle strength testing in the region. Motion analysis in open and closed kinetic chain with the use of equipment (elastic bands, weights, etc.). Examples and applications. Student assessment.

- **Kinesiology and biomechanics of human activities I**

  Walking, walking with aids, running, ascend-descend stairs, standing and standing posture, roll over from supine to prone, rise from the floor, sit to stand, lift and carry weight, use of home utensils, use of work space, lifting objects, activities of personal hygiene, activities of dressing

and wearing footware, driving. Emphasis is placed on the kinetic and kinematic analysis of specific activities and especially in muscle involvement and action. Pathokinesiology.
Practical: Performance, observation and analysis of activities presented during theoretical lectures. Examples and applications. Student assessment.

- **Kinesiology and biomechanics of human activities II**

  Sports activities: throwing, kicking, swimming. Leisure activities: golf, tennis, cycling. Activities that incorporate impact, push and pull, locomotion with suspension and without support.
  Emphasis is placed on the kinetic and kinematic analysis of specific activities and especially in muscle involvement and action. Pathokinesiology.
  Practical: Performance, observation and analysis of activities presented during theoretical lectures. Examples and applications. Student assessment.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence.
USE OF INFORMATION & COMMUNICATION TECHNOLOGY (ICT)	Open e-class platform
TEACHING ORGANIZATION	***Activity*** / ***Semester workload*** Lectures: 135 Practical: 45 Total: 180
STUDENT ASSESSMENT	Final written examination (50%), which may include: ✓ Multiple choice questions covering the whole course ✓ Short or full answer questions covering the whole course The practical part will be assessed during the semester with obligatory practical exercises, which are required for the final oral examination (50%) for the demonstration of relevant skills and motion analysis. There will be a questions' bank with the questions of previous examinations and projects.

(5) RECOMMENDED READING

Suggested reading

- *Abernethy, B. The biophysical foundations of human movement. Champaign: Human Kinetics, 2005.*
- *Craik, R.L., Oatis, C.A. Gait analysis: theory and application. St. Louis: Mosby, 1995.*
- *Cutter, N.C., Kevorkian, G.C. Handbook of manual muscle testing. New York: McGraw-Hill, 1999.*
- *Daniels & Worthingham. Έλεγχος Μυϊκής Ισχύος. Salto, 2000.*
- *Enoka, R.M. Αρχές Εμβιομηχανικής & Φυσιολογίας της Κίνησης. Εκδόσεις Πασχαλίδης, 2007.*
- *Floyd, R. T. Manual of structural kinesiology. Boston: McGraw Hill, 2007.*
- *Frost, R. Applied kinesiology: a training manual and reference book of basic principles and practices. Berkeley: North Atlantic Books, 2002.*
- *Hall, S.J. Εμβιομηχανική. Επιστημονικές Εκδόσεις Παρισιάνου, Αθήνα, 2005.*
- *Hamill, J., Knutzen, K.M. Βασική βιομηχανική της ανθρώπινης κίνησης. Αθήνα, Πασχαλίδης, 2007.*

- *Hamilton, N., Luttgens, K. Κινησιολογία: επιστημονική βάση της ανθρώπινης κίνησης. Αθήνα: Επιστημονικές εκδόσεις Παρισιάνου Α.Ε , 2013.*
- *Hoffman, S.J. Introduction to kinesiology: studying physical activity. Champaign: Human Kinetics, 2005.*
- *Houglum P.A. & Bertoli D.B. Brunnstrom's κλινική κινησιολογία. Αθήνα :Επιστημονικές εκδόσεις Παρισιάνου Α.Ε , 2012.*
- *Kapandji, I. A. Λειτουργική Ανατομική των Αρθρώσεων. (Vol. I,II,III), Πασχαλίδης, 2021.*
- *Levangie, P.K., Norkin, C.C. Joint structure and function: a comprehensive analysis. Philadelphia: F.A. Davis Company, 2001.*
- *Muscolino J.E. Κινησιολογία. Εκδόσεος Λαγός 2021.*
- *Neumann, D.A. Kinesiology of the musculoskeletal system: foundations for physical rehabilitation. 3rd edition, Elsevier 2017*
- *Nordin, M., Frankel, V.H. Basic biomechanics of the musculoskeletal system. Philadelphia: Lippincott Williams & Wilkins, 2001.*
- *Oatis, C.A. Κινησιολογία. Η μηχανική & η παθομηχανική της ανθρώπινης κίνησης. Τόμος Ι-ΙΙ, Εκδόσεις Gotsis 2013.*
- *Ozkaya, N.,Nordin, M. Fundamentals of biomechanics: equilibrium, motion and deformation. New York: Springer, 1999.*
- *Perry J. Gait analysis: Normal and Pathological function. SLACK Incorporated 1992.*
- *Perry, J.F., Rohe, D.A., Garcia, A.O. The kinesiology workbook, Philadelphia: F.A. Davis Company, 1992.*
- *Rose, J., Gamble, J.G. Human walking. Philedelphia: Lippincott Williams & Wilkins, 2006.*
- *Soderberg, G.L. Kinesiology: application to pathological motion. Baltimore: Williams & Wilkins, 1996.*
- *Trew, M., Everett, T. Human movement: an introductory text. Edinburg: Elsevier / Churchill Livingstone, 2005.*
- *Tyldesley, B., Grieve, J.I. Μύες, Νεύρα και Κίνηση. Αθήνα, Παρισιάνος, 1995.*
- *Zatsiorsky, V.M. Kinetics of human motion. Champaign: Human Kinetics, 2002.*
- *Wood, T.M., Zhu, W. Measurement theory and practice in kinesiology. Champain: Human Kinetics, 2006.*
- *Whittle, M.W. Gait analysis: an introduction. Oxford: Butterworth-Heinemann, 1996.*
- *Winter, D.A. Biomechanics and motor control of human movement. Hoboken: Wiley, 2005.*
- *Σφετσιώρης, Δ. Κινησιολογία Άνω Άκρου. Αθήνα: d.K.S., 2005.*

Related scientific journals

- *Journal of Biomechanics*
- *Journal of Anatomy*
- *Clinical Biomechanics*
- *Electromyography and Clinical Neurophysiology*
- *Journal of Electromyography and Kinesiology*
- *Spine*

MODULE OUTLINE OF 'NEUROPHYSIOLOGY'

(1) GENERAL

FACULTY	FACULTY OF HEALTH & CARING SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	**Π2-2030**	**SEMESTER**	**2nd**
MODULE TITLE	NEUROLOPHYSIOLOGY		

INDEPENDENT TEACHING ACTIVITIES	**Weekly Teaching Hours**	**ECTS**
Theory (Lectures)	3	4

MODULE TYPE	General Core Module
PRE-REQUIRED MODULES:	
TEACHING AND EXAMINATION LANGUAGE	Greek
SUITABLE FOR ERASMUS STUDENTS	Yes (English), undertaking an essay
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

After the completion of the module, students:

- Know the role, the structure, and the function of the nerve cell and the nervous system.
- Understand the principles underlying the basic functional systems of the nervous system.
- Apply the knowledge gained to the understanding and interpretation of the clinical picture of neurological patients, and consequently to plan rationally therapeutic interventions.

- Use the knowledge gained to analyze the clinical and paraclinical data, and to develop an integrated approach of neurological disease.
- Evaluate the patients holistically and set up diagnostic and therapeutic strategies based on neurophysiological evidence

GENERAL COMPETENCES

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Group work- participation in interdisciplinary groups
- Respect for diversity and multiculturalism
- Demonstration of social, professional and ethical responsibility and sensibility on gender issues

(3) **MODULE CONTENT**

- Nerve cells and behavior: Cellular structure and molecular biology of neurons.
- Brain and behavior.
- Nervous System Development.
- Neuroglial cells.
- Autonomic Nervous System.
- Electrical Neuron Properties: Membrane potential, action potential, action potential propagation.
- Synaptic transmission-Neurotransmitters.
- Neuromuscular junction.
- Muscle cell-Motor unit.
- Muscle contraction.
- Anatomical and functional organization of nervous system-by levels (telencephalon, diencephalon, mesencephalon, rhomboid brain, spinal cord, cranial nerves, spinal nerves).
- Anatomical and functional organization of sensation (exteroceptive and proprioceptive).
- Anatomical and functional organization of motor system (voluntary-involuntary, pyramidal-extrapyramidal system).
- Visual pathway.
- Vestibular system.
- Cognitive functions: language, learning, memory.
- Neurophysiologic diagnostic examinations: Fundamental principles.

- Electroencephalography.
- Electromyography-Electroneurography.
- Evoked potentials: somatosensory, visual, acoustic, cognitive.
- Transcranial Magnetic Stimulation (TMS).

(4) TEACHING AND LEARNING METHODS – ASSESSMENT DELIVERY

DELIVERY	Physical presence
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform
TEACHING ORGANIZATION	

Activity	***Semester Workload***
Lectures	
Posting and distribution of literature	
Interactive teaching	
Guest speakers approved by the Physiotherapy Department	
Information relating to scientific activity (conferences, meetings)	
Total	135

STUDENT ASSESSMENT	Final written examination (100%) of all module content, through: ✓ Multiple choice questions ✓ True-or-false questions ✓ Gap-filling ✓ Short answer questions ✓ Open ended questions

(5) SUGGESTED READING

- ✓ Kandel E.R., Schwartz J.H. Βασικές Αρχές Νευροεπιστημών.1/2006. BROKEN HILL PUBLISHERS LTD
- ✓ M. BAEHR, M. FROTSCHER. DUUS ΕΝΤΟΠΙΣΤΙΚΗ ΔΙΑΓΝΩΣΗ ΣΤΗ ΝΕΥΡΟΛΟΓΙΑ.1/2009. ΙΩΑΝΝΗΣ ΚΩΝΣΤΑΝΤΑΡΑΣ
- ✓ Roger A. Barker, Francesca Cicchetti, Michael J. Neal. Νευροανατομία και Νευροεπιστήμες με μια Ματιά. 4/2016. ΠΑΡΙΣΙΑΝΟΥ ΜΟΝΟΠΡΟΣΩΠΗ ΑΝΩΝΥΜΗ ΕΚΔΟΤΙΚΗ ΕΙΣΑΓΩΓΙΚΗ ΕΜΠΟΡΙΚΗ ΕΤΑΙΡΕΙΑ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΒΙΒΛΙΩΝ

- ✓ https://www.aanem.org/ American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM)
- ✓ https://www.ifcn.info/ International Federation of Clinical Neurophysiology: IFCN
- ✓ https://www.sciencedirect.com/journal/clinical-neurophysiology Official Organ of the International Federation of Clinical Neurophysiology, the Brazilian Society of Clinical Neurophysiology, the Czech Society of Clinical Neurophysiology, and the International Society of Intraoperative Neurophysiology.
- ✓ https://www.acns.org/ American Clinical Neurophysiology Society: ACNS
- ✓ https://journals.physiology.org/journal/jn (Journal of Neurophysiology)
- ✓ https://journals.lww.com/clinicalneurophys/pages/default.aspx (Journal of Clinical Neurophysiology)
- ✓ https://www.e-acn.org/ (Annals of Clinical Neurophysiology)
- ✓ https://www.sciencedirect.com/journal/neurophysiologie-clinique (Neurophysiologie Clinique)
- ✓ https://bmcneurosci.biomedcentral.com/ (BMC Neuroscience)
- ✓ https://www.jneurosci.org/content/about-jneurosci (Journal of Neuroscience)
- ✓ https://www.nature.com/neuro/ (Nature Neuroscience)

MODULE OF INTERNAL MEDICINE I

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
LEVEL OF STUDY	UNDERGRADUATE		
CODE	Π2-2040	**SEMESTER OF STUDIES**	**2ND**
TITLE	INTERNAL MEDICINE I		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
THEORY - LECTURES	3	4
TOTAL	3	4

MODULE TYPE	GENERAL BACKGROUND
PRE-REQUIRED MODULES	
TEACHING AND EXAMINATION LANGUAGE:	GREEK
MODULE SUITABLE for ERASMUS STUDENTS	YES
COURSE WEBPAGE (URL)	

(2) LEARNING OUTCOMES

Learning outcomes
The aim of the course is to train students in understanding cardiovascular, respiratory, hematologic, rheumatic, and neoplastic diseases, as well as their impact on patients and society. It aims to develop an appropriate level of knowledge and skills for the diagnosis, prevention, treatment, and rehabilitation of those conditions. The course provides knowledge and competencies related to the interpretation, definition, classification, understanding, mechanisms, diagnostics, and specific characteristics of

diseases. Additionally, it informs students about prevention strategies, pathophysiological and pathogenic mechanisms, fundamental principles of therapeutic management, biopsychosocial impacts, and rehabilitation approaches.

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

- Recognize the mechanisms underlying various diseases in their onset, symptomatology, and progression.
- Identify and contribute to solving diagnostic and therapeutic problems in collaboration with medical personnel.
- Develop the necessary skills to effectively contribute to disease prevention, treatment, and rehabilitation.

General Competencies

- Autonomous Work
- Teamwork
- Decision Making
- Research, Analysis, and Synthesis of Data and Information, utilizing the necessary technologies

(3) CONTENT OF THE COURSE

Cardiovascular disorders – Lipids – Metabolic Syndrome

Description of the thematic unit: Cardiac cycle, arrhythmogenesis, arrhythmias, valvular diseases, atherosclerosis, coronary artery disease, ischemia - myocardial infarction, heart failure, cardiomyopathies, lipid metabolism disorders, metabolic syndrome, obesity.

Diseases of the lungs and respiratory tract

Description of the thematic unit: Physiological structure and function of the respiratory system, respiratory tests, blood gases, clinico-pathological correlations, bronchial asthma, chronic obstructive pulmonary disease, restrictive lung diseases, mechanisms of pulmonary embolism and pulmonary hypertension, respiratory failure.

Oncology and Carcinogenesis

Description of the thematic unit: Common types of cancer, malignancy grade, staging, cancer epidemiology, cancer risk factors, primary and secondary prevention, mechanisms of carcinogenesis, oncogenes and tumor suppressor genes, signaling mechanisms, apoptosis and necrosis, principles of chemotherapy and targeted therapies.

Hematological disorders

Description of the thematic unit: Physiological hematopoiesis, regulation of hematopoiesis, red blood cell metabolism, iron metabolism, vitamin B12 metabolism, folic acid metabolism, anemia, hemolytic anemias, thalassemias, sickle cell anemia, physiological functions of blood cells, clinical and hematological evaluation of hematologic disorders, white blood cell count disorders, myelodysplastic syndromes, myeloproliferative neoplasms, acute leukemias, lymphoplasmacytic neoplasms, bleeding disorders.

Immune-related and Rheumatic diseases

Description of the thematic unit: Structure of the immune system, acquired immunity, dendritic cells, granulocytes, macrophages, T and B lymphocyte receptors, antigen presentation, major histocompatibility complex, immunoglobulins, cytokines, autoantibodies, apoptosis, inflammation, tissue damage, hypersensitivity reactions, gout and pseudogout, synovial fluid analysis, rheumatic diseases, systemic lupus erythematosus, rheumatoid arthritis, osteoporosis.

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

Mode of course delivery	Face to face.
Use of information and communication technologies	Use of information and communication technologies - Communication with students (e-class).
Organization of teaching	

Activity	***Semester workload***
Interactive lectures	135
Total	135

Student assessment

Written examination covering the entire course material (100%).

(5) SUGGESTED READING

- *Τζιούφας Α, Βλαχογιαννόπουλος Π. Μουτσόπουλου Αρχές Παθοφυσιολογίας. Broken Hill Publishers Ltd., 2018*
- *Hart M, Loeffler A.G. Παθοφυσιολογία Νόσων. Broken Hill Publishers Ltd., 2014*
- *Papadakis MA, et al. Current Medical Diagnosis & Treatment 2024. 63rd edition. N.Y.: The McGraw-Hill Companies Inc, 2024.*
- *Loscalzo, J. et al. Harrison's Principles of Internal Medicine. 21st edition. N.Y.: The McGraw-Hill Companies Inc.,2022.*
- *Wilkinson IB, et al. Oxford Handbook Κλινικής Ιατρικής. 10η έκδοση Ιατρικές Εκδόσεις Λίτσας, Αθήνα 2019.*

- *McPhee S, Canong W. Pathophysiology of disease: An introduction to Clinical Medicine. 8th edition. N.Y.: The McGraw-Hill Companies Inc, 2018.*
- *Runge MS, Greganti MA. F. Netter Παθολογία. 2η Έκδοση. Εκδόσεις ΠΧ Πασχαλίδης, 2015.*
- *Χανιώτης Φ, Χανιώτης Δ. Νοσολογία – Παθολογία. Αθήνα: Εκδόσεις Λίτσας, 2002.*
- *Epstein O, Perkin GD, de Bono DP, Cookson G. Κλινική Εξέταση. Ιατρικές Εκδόσεις Λίτσας, Αθήνα 2004*
- *. Kumar P, Clark M. Παθολογία (2 τόμοι). Αθήνα: Ιατρικές Εκδόσεις Λίτσας, Αθήνα 2007.*
- *Zatouroff M. Έγχρωμος Άτλας - Τα Κλινικά Σημεία στην Παθολογία. Εκδόσεις ΠΧ Πασχαλίδης, 2005*

MODULE OUTLINE of 'ORTHOPAEDICS'

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDEGRADUATE		
MODULE CODE	Π2-2050	**SEMESTER**	**2nd**
MODULE TITLE	ORTHOPAEDICS		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures / Theoretical	3	5
Total	3	5

MODULE TYPE	General Core Course
PRE-REQUIRED MODULES	
TEACHING AND EXAMINATION LANGUAGE	Greek
MODULE SUITABLE for ERASMUS STUDENTS	
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
The aim of the course is for the students to understand the basic concepts of pathology and trauma of the musculoskeletal system and of the organs and systems that affect its function, to acquire skills related to the evaluation of the orthopaedic patient and the associated therapeutic intervention, in order to contribute to the best possible outcome of the conservative or operative orthopaedic treatment, and also to the prevention of the most frequent diseases of the musculoskeletal system. After completing the course the students should be able to: • Recognise the main signs and symptoms of a musculoskeletal disease and the other possible systems that may be involved in the said disease. • Be aware of the main signs and symptoms of a musculoskeletal injury and recognise it in various imaging methods. • Utilise the proper clinical examination and assessment techniques. • Participate in a differential diagnosis. • Be aware of the therapeutic options for every disease/injury of the musculoskeletal system. • Be aware of the main therapeutic protocols that are applied to musculoskeletal disorders for prevention and treatment (conservative or operative). • Participate in the rehabilitation of the patient in a hospital unit.
General Competences - Learning Outcomes
• Individual work • Teamwork • Decision making • Searching, analyzing and composing of data and information using the appropriate technological means

(3) MODULE CONTENT

- **Introduction – Musculoskeletal system.** Anatomy – Pathology – Kinesiology. History of orthopaedics, terminology, orthopaedic practice, subspecialties, materials for orthopaedics. Approach to the orthopaedic patient: a) diagnosis, b) prognosis, c) treatment.
- **Genetic and congenital diseases.** Down syndrome, neurofibromatosis, Klinefelter syndrome, Ehlers–Danlos syndrome, impact of foetal environment, osteogenesis imperfecta, achondroplasia, multiple exostoses, radioulnar synostosis, congenital aplasias, congenital elevation of the scapula, congenital differentiation of the shape of the fingers, Klippel–Feil syndrome, congenital torticollis. Brief description of the definition, the prevalence, the clinical manifestation, the diagnosis and differential diagnosis, and the protocols for prevention and treatment.
- **Genetic and congenital diseases.** Congenital hip dislocation. Congenital equinovarus, flatfoot, congenital disorders of the spine – kyphosis, lordosis, scoliosis. Brief description of the definition, the prevalence, the clinical manifestation, the diagnosis and the differential diagnosis and of the protocols for prevention and treatment.

- **Metabolic diseases.** Bone, bone metabolism, components of the regulation of the bone metabolism. Bone metabolism and growth. Diseases that lead to the failure of the structure of the bone tissue: osteoporosis, osteomalachia, Paget disease. Clinical manifestation, diagnosis, treatment.
- **Inflammation in orthopaedics.** Definition, ways of dispersal, classification, factors, clinical manifestation, diagnosis. Osteomyelitis (description of the various types and classification with emphasis on the clinical manifestation, diagnosis, therapeutic goals and treatment). Tuberculosis.
- **Inflammatory diseases**. Rheumatoid arthritis, systemic lupus erythematosus, ankylosing spondylitis, gout. Description of the clinical manifestation, the diagnosis, the specialised laboratory and imaging diagnostic methods, protocols of intervention.
- **Osteonecrosis**. Definition, traumatic/non-traumatic osteonecrosis, pathology, stages, therapeutic intervention. Osteonecrosis in the child/teenager (Legg–Calvé–Perthes osteochondritis, fissuring osteochondritis, osteochondritis of the tibial tuberosity, osteochondritis of the heel, Scheuermann disease). Osteochondritis in the adult (osteonecrosis of the lunate/Kienbock disease, osteonecrosis of the femoral head, dysbaric osteonecrosis, secondary osteonecrosis).
- **Osteoarthritis**. Definition, causative and risk factors, pathology, frequency and usual manifestations, clinical picture, diagnostic methods, treatment. Description of clinical picture, imaging methods and treatment of the most frequent types that present in clinical practice.
- **Neuromuscular diseases**. Introduction and gross description of the nervous system. Patient history, clinical examination and evaluation, laboratory and imaging techniques, principles of therapeutic treatment. Poliomyelitis. Cerebral palsy (causative factors, classification, diagnosis based on the age of the patient during examination, therapeutic goals, conservative treatment, operative treatment per region, physiotherapy and occupational therapy protocols).
- **Neuromuscular diseases.** Spastic palsy in the adult. Friedreich ataxia. Spinal cord lesions (clinical picture relative to the level of the lesion, aetiology). Spina bifida (clinical picture, classification, treatment). Reference to motor neuron diseases.
- **Peripheral neuropathies.** Mononeuropathies, multiple neuropathies, polyneuropathies. Seddon & Sunderland classification of neural lesions, clinical picture, clinical tests, assessment of patient, therapeutic goals. Detailed description of peripheral neuropathies per region. Lesions of plexuses and peripheral nerves (cervical, brachial, lumbar plexus and of the main final rami, with emphasis on the clinical picture and the assessment, as well as the treatment).
- **Peripheral neuropathies.** Syndromes of nerve entrapment. Syndrome of thoracic outlet, entrapment of suprascapular nerve, syndromes of entrapment of the ulnar nerve (cubital tunnel, Guyon's canal), entrapment of the radial nerve (dorsal interosseous nerve, paresis), syndromes of entrapment of the median nerve (carpal tunnel syndrome, syndrome of pronator teres, entrapment of anterior interosseous nerve), tarsal tunnel syndrome, femoral paraesthesia.
- **Pain**. Perception of pain, acute, chronic, complex.
- **Compartment syndromes.** Definition, clinical picture, treatment. Syndrome of anterior leg compartment, Volkmann syndrome.
- **Fractures (#).** Definition. Classifications. Mechanism, process and timetable of porosis. Diagnosis, clinical picture, imaging methods. General guidelines for treatment. A) Reduction: closed

reduction (with manipulation, skin or skeletal traction), open reduction (indications). B) Immobilisation, preservation of reduction: traction, braces, casts, callipers, functional braces, external fixation, internal fixation (indications, advantages, disadvantages, complications). C) Exercise, functional rehabilitation.

- **Fractures (#).** Open fractures. Classification. Treatment. Complications of fractures: Immediate, further, gereralised. Fatigue fractures: Definition, usual locations, diagnosis, treatment. Fractures in the child: Particularities of the growing skeleton, description of the structure of the epiphysis. Salter–Harris classification, treatment principles.
- **Painful syndromes of the spine.** Discopathy. Gross description of the anatomy of the intervertebral disc and of the pathology of the disc and the spine ligaments. **Low back pain/sciatica.** Definitions, terminology, frequency of manifestation, clinical picture, assessment of patient, clinical tests, imaging methods, conservative or operative treatment, rehabilitation protocols. **Spondylolisthesis**. Definition, pathology, classification/stages, treatment. **Prolapse in the cervical spine**. Clinical picture, imaging methods, diagnosis, treatment. **Ossification of the posterior longitudinal ligament** and **spinal stenosis**.
- **Spinal injuries.** Classification, mechanisms, neurological assessment, clinical picture, treatment principles relative to manifestation or not of neural lesion and location of injury. Injuries of the spine per region, with emphasis on clinical/laboratory tests, assessment and treatment. **Cervical spine injuries**. Atlantooccipital dislocation, #C1, #C2, # of mid – lower cervical spine, whiplash injury. Injuries of the thoracic spine. Compression, burst, sphenoid fractures, fractures/dislocations, “safety belt” fractures.
- **Painful syndromes of the upper extremity**. Per region: Gross anatomical description, clinical picture, diagnostic methods, therapeutic treatment and rehabilitation of disorders of the upper extremity. **Shoulder girdle**: Anatomy of the shoulder joint. Impingement syndrome. Acute calcifying myositis. Tendinitis of the shoulder rotator cuff. Tear of the rotator cuff. Injuries of the glenoid labrum (SLAP & Bankart), biceps brachii tendinitis. Shoulder instability. Frozen shoulder. **Elbow**: Bursitis. Epicondylitis (tennis & golfer’s elbow). Tendinitis of the distal insertion of the biceps brachii. **Wrist**: De Quervain tenosynovitis. Trigger finger (stenosing tenosynovitis), flexor/extensor tendinitis (overuse). Wrist nodules. DuPuytren syndrome (shortening of the palmar aponeurosis).
- **Injuries of the upper extremity**. Fractures. Muscle and tendon injuries. Clinical picture, diagnosis, classification, treatment-rehabilitation. **Shoulder girdle**: # clavicle, # scapula, #/dislocation of shoulder, # arm. **Elbow**: # distal end of arm in children and adults, # radius, # olecranon. **Forearm**: fractures of the forearm bones (one or both). # Monteggia. # Galeazzi.
- **Injuries of the upper extremity. Forearm and wrist.** Fractures of the distal end of the forearm (# Coles, # Smith, # Barton). **Wrist and hand.** Wrist sprain, # of a wrist bone (# navicular, # capitate, # hamate). Injury of the triangular fibrocartilage complex. Instability of the wrist (VISI/DISI). Fractures of the metacarpal bones (# of neck, shaft, base). Fractures of the thumb (Rolando’s, Bennet’s). Fractures of the phalanges (types, treatment, fracture of the distal phalange). Injuries of joints (fractures/dislocation of carpometacarpal joints, metacarpophalangeal joints and phalangophalangeal joints, injuries of collateral ligaments).

- **Injuries of the upper extremity.** Injuries of flexors/extensors. Amputations and reattachments.
- **Painful syndromes of the lower extremity**. Per region: Gross anatomical description, rehabilitation of the injuries of the lower extremity. **Hip**. Bursitis. Tronchanteritis. **Knee**. Baker cyst. Bursitis. Syndrome of patellofemoral overloading, chondromalacia patellae. Plica syndrome of the knee. **Ankle and foot**. Achilles tendinitis. Plantar aponeurositis. Peroneal tendinitis. Metatarsalgia. Hallux valgus. Hallux rigidus. Mallet toes. Crossover small toe.
- **Injuries of the lower extremity**. Fractures. Muscle and tendon injuries. Clinical picture, diagnosis, classification, treatment – rehabilitation. **Pelvis**. Isolated fractures with the pelvic ring intact, # with tear of the pelvic #, # of acetabulum. **Hip joint**. Hip dislocation (anterior/posterior). Femoral neck fractures. Transtrochanteric and subtrochanteric fractures. Femoral shaft fractures. Knee. Supracondylar femoral fractures. Femoral condyles fractures. Epiphysiolisthesis of femoral condyles.
- **Injuries of the lower extremity**. **Knee**. Patellar fractures. Tear of extensor mechanism. Detachment of tibial tuberosity. Dislocation of the patella. Injuries of collateral patellar ligaments. Quadriceps tears. Menisci tears. Injuries of the anterior and/or posterior cruciate ligament. Injuries of the lateral ligaments of the knee. Fractures of the proximal end of the tibia (# plateau). Tibial shaft fractures. Peroneal fractures. **Ankle and foot**. Ankle sprains. Injuries of the lateral ligaments of the ankle. Injuries of the distal tibioperoneal joint. Fractures of the distal end of the tibia. Fracture of one malleolus, bimalleolus, trimalleolus. Fractures of the tarsal bones (fracture of the talus, the heel, the navicular). Fractures of the metatarsal bones. Fractures of the phalanges. Achilles tendon tear.
- **Neoplasms in orthopaedics**. Clinical picture, history, imaging methods, laboratory tests, principles of treatment. **Benign tumours**. Nonossifying fibroma. Osteoid osteoma. Osteoblastoma. Chondroma (enchondroma/ecchondroma). Osteochondroma. Aneurysmal cyst. Simple solitary cyst. Gigantocytic tumour. **Malignant neoplasms**. Classification based on tissue. Stages of neoplasms. Osteosarcoma. Fibrosarcoma. Chondrosarcoma. Ewing's sarcoma.
- Presentation of case studies with musculoskeletal disorders, simulation of diagnosis, clinical examination of patient, diagnostic and treatment tools.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform	
TEACHING ORGANIZATION	**Activity a**	**Semester workload**
	Interactive Lectures	135
	Practice	
	Course Total	135
STUDENT ASSESSMENT	Final written examination (100%).	

(5) SUGGESTED READING

Suggested reading:

- *Καμμάς Α. Εισαγωγή στην Ορθοπεδική. Αθήνα: Εκδόσεις Α. Καμμάς, 1999.*
- *Συμεωνίδης Π. Ορθοπεδική. Κακώσεις και Παθήσεις του Μυοσκελετικού Συστήματος. Θεσσαλονίκη: University Studio Press, 1999.*
- *Χαρτοφυλακίδης Γ. Θέματα Ορθοπεδικής και Τραυματολογίας. Αθήνα: Εκδόσεις Παρισιάνου Α.Ε, 1990.*
- *Appley AG. Solomon L. Σύγχρονη Ορθοπεδική και Τραυματολογία. Αθήνα: Εκδόσεις Πασχαλίδη, 2007.*
- *Brotzman S. Wilk E. Kevin. Ορθοπαιδική Αποκατάσταση στην Κλινική Πράξη. Αθήνα: Ιατρικές Εκδόσεις Κωνσταντάρας, 2007.*
- *Evans CR. Instant Access to Orthopedic Physical Assessment. MO:Mosby, 2009. 7. Fu HF. Master techniques in orthopaedic Surgery: Sports Medicine. NY: Lippincott Williams & Wilkins, 2010.*
- *Huvos A. Bone tumors. Diagnosis, Treatment, Prognosis. Saunders, 1990.*
- *Leversedge JF, Boyer IM, Goldfarb AC. A Pocketbook Manual of Hand and Upper Extremity Anatomy: Primus Manus. NY: Lippincott Williams & Wilkins, 2010.*
- *Magee JD. Orthopedic Physical Assessment. Saunders, 2007.*
- *McRae R. Clinical Orthopaedic Examination. Αθήνα: Κωνσταντάρας Ιατρικές Εκδόσεις, 2010.*
- *Norkin C, White DJ. Measurement of Joint Motion: A Guide to Goniometry. Davis Company, 2009.*
- *Russell Stephen. Κλινική εκτίμηση της βλάβης των περιφερικών νεύρων. Αθήνα: Ιατρικές Εκδόσεις Κωνσταντάρας, 2010.*
- *Thompson CJ. Netter's Concise Orthopaedic Anatomy. Saunders, 2009.*
- *Weinstein SL, Buckwalter JA. Turek's Orthopaedics. Principles and their application. JB. Lippincott, 2005.*

- *Wiss D. Master Techniques in Orthopaedic Surgery: Fractures, NY: Lippincott Williams & Wilkins, 2012.*
- *Mark D. MiLler, Jeniffer A. Hart, John M. Macknight. Βασική Ορθοπαιδική. Αθήνα: Ιατρικές εκδόσεις Πασχαλίδης, 2020.*

MODULE OUTLINE OF 'ELECTROPHYSICAL AGENTS IN PHYSIOTHERAPY'

(1) GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-2060	**Semester**	2nd
Module Title	Electrophysical Agents in Physiotherapy		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Theory (Lectures)	3	**6**
Laboratory (lab training)	2	
Total	5	

Module Type	Specialty Module
Pre-Required Modules	
Teaching and Examination Language	Greek
Suitable for ERASMUS students	Yes (English)
Module Website (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
The purpose of the course is to prepare students for the selection and application of the appropriate electrophysical agent, as part of a therapeutic clinical regimen for the rehabilitation of diseases and injuries of the human body. Students must understand the mechanism of effect of each agent separately, assess the magnitude of the pain, and be able to choose the indicated agent in each clinical case, based on scientifically documented studies (evidence-based research). After having successfully completed the module, students: • They will know and apply Personal Protection Measures • They will have acquired the fundamental knowledge of the application indications, contraindications, biological effects, and therapeutic effects of Electrophysical agents. • They will have acquired the necessary skills to assess their patient and apply the appropriate treatment regimens and protocols for the application of Electrophysical agents. • They will be able to inform the patient about the purpose of the application of each Electrophysical agent, the benefits, the expected therapeutic effect, and the possible risks. • They will recall and rank the theories that support the application of parameters • They will evaluate the inflammatory process and pain mechanisms and apply ways to inhibit them • They will recognize the agents of surface and deep increase of temperature • They will argue for their choices • They will evaluate the effectiveness of the methods through a search in scientific databases • They will adopt a patient-centered approach, respecting diversity and interculturality. • They will be aware of environmental protection issues, such as reducing the environmental footprint, to be able to help European citizens stay healthy and properly prepared to face the effects of climate change by adopting healthy behaviors. • They will be trained in the clinical application of digital health transformation
General Competences
• Analysis and synthesis of data and information • Decision making • Independent work • Group work • Plan and management of physiotherapy interventions

(3) MODULE CONTENT

<u>Theory Content</u> • ***Introduction – Categorization of Electrophysical agents*** • ***Presentation and explanation of injuries*** • ***Soft tissue healing, fracture healing, and pain physiology – Fundamentals*** • **Thermotherapy** • ***Diathermy*** • ***Ultrasound 1 (parameters)*** • ***Ultrasound 2 (mechanism of action, indications/contraindications, research etc)*** • ***Cryotherapy***

- ***ESWT***
- ***Phototherapy 1 - LLLT***
- ***Phototherapy 2 -HILT, Bioptron light:***
- ***Magnetotherapy***
- ***Revision***

Laboratory Content

- Introductory part, presentation of technical equipment, guidelines, preventive measures, risk management, and equipment calibration.
- Training for the sensory examination, Application of therapeutic conduction heating, hot packs
- Application of therapeutic conduction heating, methods of application of paraffin wax baths, infrared radiation.
- Hydrotherapy-Whirlpool Bath, Contrast Baths.
- Clinical Applications of Cryotherapy.
- Clinical Applications of Therapeutic Ultrasound – Choice of Parameters
- Clinical Applications of Laser – Choice of Parameters – Safety Measures.
- Clinical Applications of Electromagnetic Fields.
- Combination of Electrophysical Agents.

(4) **TEACHING AND LEARNING METHODS – ASSESSMENT**

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform	
TEACHING ORGANIZATION	**Activity**	**Semester Workload**
	Lectures	135
	Laboratory Training	45
	Total	180
STUDENT ASSESSMENT	**Theory** Final written examination (50%), which may include: ✓ Multiple choice questions ✓ Short-answer or open-ended questions, analysis of roles and interest parts in a brief case study ✓ Solving problems relating quantitative data of a working time and cost ✓ Comparative evaluation of theory elements **Laboratory (50%)**	

	✓ Continuous assessment of students throughout the semester with practical exercises or questions about what subjects they studied. ✓ Final examination of all the modules taught.

(5) SUGGESTED READING

- *ΘΕΡΑΠΕΥΤΙΚΑ ΜΕΣΑ ΣΤΗΝ ΑΠΟΚΑΤΑΣΤΑΣΗ, WILLIAM PRENTICE.*
- *ΘΕΡΑΠΕΥΤΙΚΑ ΗΛΕΚΤΡΟΦΥΣΙΚΑ ΜΕΣΑ.ΒΙΟΦΥΣΙΚΗ ΚΑΙ ΕΦΑΡΜΟΓΗ ΤΟΥΣ, Alain Y. Belanger*
- *Ηλεκτροθεραπεία-Βασικές Αρχές, Kumar Nanda Basanta*
- *Ηλεκτροθεραπεία, Watson T.*
- *Φυσικά μέσα και Ηλεκτροθεραπεία στην Αποκατάσταση. Κλινική Προσέγγιση Με Βάση τα Ερευνητικά Δεδομένα, MICHELLE H. CAMERON.*
- *Ηλεκτροθεραπεία - Βασικές Αρχές και Πρακτική Εφαρμογή, VAL ROBERTSON, ALEX WARD, JOHN LOW, ANN REED.*
- *Bellew, J, Michlovitz, S. and Nolan, T. 2016. Michlovitz's Modalities for Therapeutic Intervention. F A Davis 978-0-8036-4563*
- *Knight, K.L. and Draper, D.O. 2013 Therapeutic Modalities: The Art and Science. Lippincott Williams and Wilkins 978-1451102949.*

3nd SEMESTER

s/n	MANDATORY			LECTURE		WORKSHOP		TOTAL		SEMESTER WORKLOAD	ECTS
	MODULES			HOURS	WORKLOAD	HOURS	WORKLOAD	HOURS	WORKLOAD		
	MANDATORY MODULES	CATEGORY	CODE								
1	NEUROLOGY	GBM	П2-3010	3	135			3	135	135	5
2	KINESIOTHERAPY	SM	П2-3020	3	135	2	45	5	180	180	6
3	SOFT TISSUE MOBILISATION	SM	П2-3030	3	135	2	45	5	180	180	5
4	CLINICAL ELECTROTHERAPY	SM	П2-3040	3	135	2	45	5	180	180	6
5	CLINICAL WORK PHYSIOLOGY	SM	П2-3050	3	135	-		3	135	135	5
6	INTERNAL MEDICINE II	GBM	П2-3060	3	90	-		3	90	90	3
TOTAL				**18**	**765**	**6**	**135**	**24**	**900**	**900**	**30**

MODULE OUTLINE OF 'NEUROLOGY'

(1) GENERAL

FACULTY	FACULTY OF HEALTH & CARING SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	**П2-3010**	**SEMESTER**	**3rd**
MODULE TITLE	NEUROLOGY		

INDEPENDENT TEACHING ACTIVITIES	**Weekly Teaching Hours**	**ECTS**
Theory (Lectures)	3	5

MODULE TYPE	General Core Module
PRE-REQUIRED MODULES:	
TEACHING AND EXAMINATION LANGUAGE	Greek
SUITABLE FOR ERASMUS STUDENTS	Yes (English), undertaking an essay
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

After the completion of the module, students:

- Will have acquire basic knowledge in Topical Neurology.
- Will be able to carry out neurological clinical examination and interpret the findings by linking them to specific anatomical areas and functional systems.
- Will be able to recognize the neurological disorder and the underling pathophysiology.
- Will be able to develop clinical and differential-diagnostic thinking on a specific clinical neurological symptomatology.

- Will have acquire UpToDate and well-established knowledge of understanding the most important neurological diseases in terms of the epidemiology, the etiology, the clinical picture, the diagnosis and the therapy.
- Will have acquire basic knowledge of the UpToDate diagnostic methods in Neurology.
- Will have acquire basic knowledge of the UpToDate therapeutic methods in Neurology.
- Will be able to understand the type and the severity of the neurological deficit of the patients, set the appropriate therapeutic goals and plan the appropriate therapeutic intervention.
- Will be able to participate in interdisciplinary working groups to better manage patient problems.
- Will have acquired general principles and skills in dealing with neurological patients in terms of patient safety, respect for their personality and diversity, and safeguarding personal data.
- Will be familiar with the mechanisms of searching for new scientific knowledge, evaluating new information and applying innovative therapeutic methods.

GENERAL COMPETENCES

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Group work- participation in interdisciplinary groups
- Respect for diversity and multiculturalism
- Demonstration of social, professional and ethical responsibility and sensibility on gender issues

(3) **MODULE CONTENT**

GENERAL PART

- General principles of Anatomy of Nervous System (Brain, Spinal Cord, Peripheral Nervous System)
- General Principles of Physiology-Pathophysiology of Nervous System
- Motor system: Centres-pathways-connections-Functional systems (Pyramidal system, Extrapyramidal system)
- Somatosensory system: Centres-pathways-connections-Sensory types (exteroceptive, proprioceptive)
- General symptomatology in damage per level of nervous system
- Disorders of symbolic and mental functions
- Anatomical-clinical associations Pathophysiological-clinical associations.

Nosology: Epidemiology, Etiology, Clinical picture, Diagnosis and Therapy of most important neurological diseases.

- Stroke
- Demyelinating diseases
- Degenerative diseases (Alzheimer d., Parkinson d., Motor Neuron Disease, Huntington's Chorea, Cerebellar Ataxia)
- Peripheral Nervous System Diseases (peripheral nerve diseases, plexopathies, ganglionopathies, radiculopathy)
- Myopathies
- Neuromuscular junction disease
- Nervous System Tumors
- Nervous System Infections
- Toxic Disorders of the Nervous System
- Traumatic Brain Injuries
- Spinal Cord Injuries
- Autonomic Nervous Systems Disorders
- Epilepsy
- Dizziness
- Headache
- Systemic and Metabolic disorders
- Pediatric Neurology -Neonatal Neurological Examination
- Congenital anomalies
- Basic diagnostic examinations in Neurology: indications, limitations and outcome evaluation.
- Neuroimaging methods (Computed Tomography, Magnetic Resonance Imaging, angiography)
- Functional Neuroimaging methods (fMRI, SPECT, PET)
- Neurophysiological examinations (electroneurography, electromyography, electroencephalography, evoked potential, transcranial magnetic stimulation)
- Doppler ultrasonography of cerebral vessels
- Lumbar puncture-cerebrospinal fluid examination
- Neuroimmunology
- Neurogenetics

(4) TEACHING AND LEARNING METHODS – ASSESSMENT DELIVERY

<table>
<tr><td>DELIVERY</td><td>Physical presence</td></tr>
<tr><td>USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)</td><td>Open e-class platform</td></tr>
<tr><td>TEACHING ORGANIZATION</td><td>
<table>
<tr><th>Activity</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td></td></tr>
<tr><td>Posting and distribution of literature</td><td></td></tr>
<tr><td>Interactive teaching</td><td></td></tr>
<tr><td>Guest speakers approved by the Physiotherapy Department</td><td></td></tr>
<tr><td>Information relating to scientific activity (conferences, meetings)</td><td></td></tr>
<tr><td>Total</td><td>135</td></tr>
</table>
</td></tr>
<tr><td>STUDENT ASSESSMENT</td><td>Final written examination (100%) of all module content, through:
✓ Multiple choice questions
✓ True-or-false questions
✓ Gap-filling
✓ Short answer questions
✓ Open ended questions</td></tr>
<tr><td colspan="2"></td></tr>
</table>

(5) SUGGESTED READING

- ✓ ΝΕΥΡΟΛΟΓΙΑ, HEINRICH MATTLE, MARCO MUMENTHALER , 1/2019, ΙΩΑΝΝΗΣ ΚΩΝΣΤΑΝΤΑΡΑΣ
- ✓ Netter Παθολογία-Νευρικό Σύστημα, Runge M., Jones H.R. , 1/2008, BROKEN HILL PUBLISHERS LTD
- ✓ Current Σύγχρονη Νευρολογία Διάγνωση και Θεραπεία, Brust John, 1/2016, BROKEN HILL PUBLISHERS LTD

- ✓ Εγχειρίδιο κλινικής νευρολογίας, Bradley Walter G.,Daroff Robert B.,Fenichel Gerald M.,Marsden David, 1/2009, BROKEN HILL PUBLISHERS LTD
- ✓ Κλινική νευρολογία, J.A. AMINOFF, D.A. GREENBERG, R.P. SIMON, 9/2017, ΠΑΡΙΣΙΑΝΟΥ ΜΟΝΟΠΡΟΣΩΠΗ ΑΝΩΝΥΜΗ ΕΚΔΟΤΙΚΗ ΕΙΣΑΓΩΓΙΚΗ ΕΜΠΟΡΙΚΗ ΕΤΑΙΡΕΙΑ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΒΙΒΛΙΩΝ
- ✓ ΝΕΥΡΟΛΟΓΙΑ ΚΑΙ ΝΕΥΡΟΧΕΙΡΟΥΡΓΙΚΗ ΕΙΚΟΝΟΓΡΑΦΗΜΕΝΗ, ΚΕΝΝΕΤΗ W. LINDSAY, IAN BONE, GERAINT FULLER, 5/2015, ΠΑΡΙΣΙΑΝΟΥ ΜΟΝΟΠΡΟΣΩΠΗ ΑΝΩΝΥΜΗ ΕΚΔΟΤΙΚΗ ΕΙΣΑΓΩΓΙΚΗ ΕΜΠΟΡΙΚΗ ΕΤΑΙΡΕΙΑ ΕΠΙΣΤΗΜΟΝΙΚΩΝ ΒΙΒΛΙΩΝ
- ✓ https://www.jneurology.gr/ Αρχεία Κλινικής Νευρολογίας
- ✓ https://www.neurology.org/ (Neurology)
- ✓ https://jamanetwork.com/journals/jamaneurology (JAMA Neurology_
- ✓ https://www.thelancet.com/journals/laneur/home (The Lancet Neurology)
- ✓ https://link.springer.com/journal/415 (Journal of Neurology)
- ✓ https://www.frontiersin.org/journals/neurology (Frontiers in Neurology)
- ✓ https://jnnp.bmj.com/ (Journal of Neurology, Neurosurgery, and Psychiatry)
- ✓ https://link.springer.com/journal/10072 (Neurological Sciences)
- ✓ https://www.jns-journal.com/ (Journal of the Neurological Sciences)
- ✓ https://onlinelibrary.wiley.com/journal/15318249 (Annals of Neurology)
- ✓ https://www.aan.com/ American Academy of Neurology
- ✓ https://www.ean.org/ European Academy of Neurology
- ✓ www.efns.org European Federation of Neurological Societies (EFNS)

MODULE OUTLINE OF 'KINESIOTHERAPY'

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDEGRADUATE		
MODULE CODE	Π2-3020	**SEMESTER**	**3rd**
MODULE TITLE	KINESIOTHERAPY		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Theoretical (lectures)	3	
Practical (laboratory exercises and clinical education)	2	
Total	5	6

MODULE TYPE	Specialty Course
PRE-REQUIRED MODULES	
TEACHING AND EXAMINATION LANGUAGE	Greek
MODULE SUITABLE for ERASMUS STUDENTS	YES
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes

The aim of the course is the detailed analysis of the factors that influence motion and underlie the planning of kinesiotherapy and exercise programmes.
The basic kinesiotherapy principles and the types of motion are taught, together with the relationship between gravity, initial muscle length (length-tension relationship), speed (force-velocity relationship) and motion. The principles of planning programmes of passive, assisted and active exercise are developed, with the aim of conserving or increasing the mobility and the range of motion, as well as improving the strength, power, endurance and flexibility of the muscle system. In particular, issues such as the concept of proprioception, kinaesthesia, and the role of neuromuscular coordination in skill acquisition are explored.
The aim is for the students to acquire skills for the organisation and application of preventive and therapeutic programmes through motion, with emphasis on relaxation, stretching and resistance exercises for the maintenance or improvement of the function of the muscular system.

After completing the course the students:

- Will be able to comprehend and apply in detail the methodology of organising and planning kinesiotherapy and exercise programmes based on the short-term and long-term goals of the physiotherapy intervention.
- Will be able to organise and apply kinesiotherapy and exercise programmes for the maintenance or improvement of joint mobility and function (mainly passive and assisted movements) under various conditions (starting position, limits of range of movement, relationship of plane of movement with gravity, surrounding environment) with the goal of maintaining and rehabilitating dysfunctions of the musculoskeletal system.
- Will be able to organise and apply kinesiotherapy and exercise programmes for the maintenance or improvement of muscle function (strength, power, endurance), with the goal of maintaining and rehabilitating dysfunctions of the musculoskeletal system.
- Will be able to adequately plan and apply appropriate kinesiotherapy and exercise programmes with the goal of maintaining or improving the neuromuscular coordination and developing new skills or preserving already acquired ones.
- Will be able to adequately plan and apply the basic principles of relaxation programmes.
- Will be able to adequately plan and apply the basic principles of postural (and the most common deviations) and balance (under different conditions) assessment.

General Competences - Learning Outcomes

- Searching, analyzing and composing of data and information using the appropriate technological means.
- Adapting to new conditions
- Decision making
- Individual work
- Teamwork
- Working in interdisciplinary environment
- Planning and management of physiotherapeutic interventions
- Design and management of physiotherapy interventions
- Respect diversity
- Able to critically analyse situations and self-actions (reflection skills)
- Promotion of free, creative and inductive thought processes

(3) MODULE CONTENT

Theoretical Part

- Factors that influence motion. Analysis of the role of strength, muscle tone, elasticity and endurance. Influence of neuromuscular coordination on the execution of motion.
- Analysis of the mode of the assessment of motion based on the SOAP model. Subjective – assessment – assessment and planning of programme.
- Planning to improve motion. Goals for desirable functional outcomes. Checking of factors that affect function. Applications for the therapeutic plan.
- Analysis of the goals of therapeutic exercise. Prevention of dysfunction and improvement or conservation of strength, mobility, balance and functional skills.
- Analysis of factors that affect muscle strength. The effect of muscle unit firing on muscle output and of muscle contraction on the muscle tension capability.
- Ways to increase muscle strength: a) muscle hypertrophy, analysis of causative factors, b) hyperplasia, c) muscle unit recruitment.
- Effect of motion on the human body. Discrimination between active and passive motion. Analysis of the effect of active and passive motion. Types and characteristics of motion: a) isometric, b) isotonic, c) isokinetic.
- Analysis of the range of motion. Discrimination between active, passive and assisted range of motion. Modes of assessing the range of motion. Goniometry.
- Resistance exercises. Description of resistance exercises, modes of application and analysis of outcomes, contraindications. Type and characteristics of resistance exercises: a) isometric, b) isotonic, c) isokinetic.
- Length-tension and force-velocity relationship. Effects on the increase of muscle strength, power and endurance.
- Relaxation: definition and relaxation principles. Analysis and method principles for general relaxation.
- Effect of motion on relaxation. Physiotherapeutic modes for relaxation. Autogenic relaxation.
- Stretching. Analysis of the therapeutic technique of stretching, influencing factors. Indications – goals. Effects, outcomes of stretching programmes, applications for the prevention and for physiotherapeutic rehabilitation.

Practical Part

- Passive motion. Starting positions – grips. Applications for the joints of the upper and lower extremity.

- Assessment of motion and of range of motion. Analysis of goniometry methods. Measurements. Applications.
- Active motion. Motion in relation to gravity. Open – closed kinetic chain.
- Assisted exercise. Assessment of factors relative to the effect of gravity on the execution of motion.
- Simple active exercise. Applications for the muscle systems of the upper and lower extremity.
- Planning of exercise programmes with the goal of conserving muscle strength.
- Resistance exercises. Technical points of application. Muscle strength programmes. Assessment. Application.
- Planning and application of programmes to conserve and improve muscle endurance.
- Planning of rehabilitation, proprioception and skill acquisition programmes. Applications. Assessment.
- Relaxation, general. Psychogenic approach. Mental and physical methods. Exercise – applications. Assessment.
- Relaxation, local. Pain – exercise. Planning and application of programmes. Assessment.
- Elasticity. Checking the elasticity of contractile and non-contractile structures.
- Planning of exercise programmes for the conservation and improvement of the elasticity of the muscle systems of the trunk, the upper and the lower extremity.
- Exercises – stretching programmes. Self stretching. Planning, application and assessment of stretching programmes with active movements.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform	
TEACHING ORGANIZATION	**Activity a**	**Semester workload**
	Theoretical part Presentations and lectures using audiovisual media	135
	Theoretical part Using e-class to post and distribute scientific articles, lectures, useful links, questionnaires, course	

	attendance information, etc.	
	Theoretical part Visiting speakers after approval by the Department of Physiotherapy.	
	Laboratory Part Practice of the students in the organization and implementation of passive and active movement programs with specific therapeutic goal	45
	Laboratory Part Students practicing on theirselves active exercise programs. Evaluation of application results. Adaptation and redesign of the exercise.	
	Laboratory Part Organizing kinesiotherapy programs applying the methods taught and aiming to prevention.	
	Course Total	180
STUDENT ASSESSMENT	Theoretical part Final written examination (50%) which can include: • Multiple choice questions • Short answer or development questions • Comparative evaluation of theory elements Practical part (50%) • The laboratory part has student mid-term evaluations of laboratory unit applications • Final examination of all the material taught.	

(5) RECOMMENTED READING

Greek:

- *Houglum P.A. (2018) Κινησιοθεραπεία. Θεραπευτικές Ασκήσεις για Μυοσκελετικές Παθήσεις. Εκδόσεις, Π.Χ. Πασχαλίδης, Αθήνα..*
- *Bryan E. (2019) Εγχειρίδιο Θεραπευτικών Ασκήσεων.. Εκδόσεις, Π.Χ. Πασχαλίδης, Αθήνα.*

- *Κουτσαμπέλας Χ.Ν. (2006).Εφαρμογή ειδικών διατάσεων σε όλους τους μυς του ανθρώπινου σώματος. Εκδόσεις Παρισιάνου, Αθήνα.*
- *Ryf C, Weymann A. Εύρος κίνησης-ουδέτερη-0-μέθοδος της Α.Ο. μέτρηση και τεκμηρίωση Αθήνα: Ιατρικές Εκδόσεις Π.Χ. Πασχαλίδης, 2004.*

English:

- *Alter M. Science of flexibility. 3nd edition. USA: Human Kinetics, 2004.*
- *Brody L., Geigle P.R. Aquatic Exercise for Rehabilitation and Training. USA: Human Kinetics, 2009.*
- *Butler D. The sensitive nervous system. 1st Edition. Australia: Noigroup, 2006.*
- *Donatelli R, et al. Physical therapy of the shoulder. 5th Edition. New York: Churchill Livingstone, 2011.*
- *Dvir Z. Isokinetics, muscle testing, interpretation and clinical applications. 2nd Editon. Edinburgh: Churchill Livingstone, 2004.*
- *Enoka R. Neuromechanics of Human Movement. 5th Edition. USA.: Human Kinetics, 2015.*
- *Francis E. Stretching Therapy: A Comprehensive Guide to Individual & Assisted Stretching. 1st edition. Indianapolis: Blue River Press, 2013.*
- *Hodges P. W., Cholewicki J., van Dieën J.H. Spinal Control-The Rehabilitation of Back Pain. London: Churchill Livingstone, 2013.*
- *Kenyon K. Kenyon J. The Physiotherapist's Pocketbook: Essential Facts at Your Fingertips. 2nd edition. New York: Churchill Livingstone, 2009.*
- *Laban R., Ullmann L. The Mastery of Movement. United Kingdom: Dance Books Publication, 2011.*
- *Lederman E. Therapeutic Stretching, 1st Edition. London: Churchill Livingstone, 2013.*
- *Levine P, Phillips M. Freedom from Pain: Discover Your Body's Power to Overcome Physical Pain. Colorado: Pap/Com, 2012.*
- *MacIntosh B. Gardiner P. Mc Comas A. Skeletal Muscle. Form and function. 2nd Edition. USA.: Human Kinetics, 2005.*
- *Myers T. Anatomy Trains: Myofascial Meridians for Manual Therapists and Movement Professionals 4th Edition. USA: Elsevier, 2020.*
- *Payne R., Donaghy M. Payne's Handbook of Relaxation Techniques. A Practical Guide for the Health Care Professional. 4th Edition. New York: Churchill Livingstone, 2010.*
- *Perrin D. Isokinetic exercise and assessment. USA.: Human Kinetics, 1993.*
- *Pitt-Brooke J, Reid H, Lockwood J, et al. Rehabilitation of Movement. Theoretical Basis of Clinical Practice. Philadelphia: W.B. Saunders Company, 1998.*
- *Schoen J, Pearl L. Keep Calm and Stretch: 44 Stretching Exercises to Increase Flexibility Relieve Pain, Prevent Injury, and Stay Young! USA: Little Pearl Publishing, 2012.*
- *Snyder KT, Goodman C. Differential Diagnosis in Physical Therapy. 7th Edition. Philadelphia: W.B. Saunders Company, 2022.*

- *Related scientific Journals:*

- *Journal of Electromyography and Kinesiology* – https://www.sciencedirect.com/journal/journal-of-electromyography-and-kinesiology
- *Physical Therapy & Rehabilitation Journal* – https://academic.oup.com/ptj
- *Journal of Bodywork & Movement Therapies* - https://www.sciencedirect.com/journal/journal-of-bodywork-and-movement-therapies
- *Journal of Functional Morphology and Kinesiology* - https://www.mdpi.com/journal/jfmk
- *Kinesiology* - https://hrcak.srce.hr/ojs/index.php/kinesiology/index
- *Journal of Kinesiology and Exercise Sciences* - https://jkes.eu/resources/html/cms/MAINPAGE

- *International Journal of Kinesiology and Sports Sciences* - https://journals.aiac.org.au/index.php/IJKSS/index

MODULE DESCRIPTION SOFT TISSUE MOBILIZATION

(1) **GENERAL**

School	Health and Care Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	П2-3030	**Semester**	**3rd**
Module Title	**Soft tissue mobilisation**		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
THEORY: Interactive Lectures	3	5
LABORATORY: Laboratory exercises	2	
Total	5	

COURSE TYPE	Specialty
PREREQUISITES:	
LANGUAGE OF INSTRUCTION AND EXAMINATIONS:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes (English)
WEBPAGE (URL)	

(2) **LEARNING OUTCOMES**

Learning Outcomes

The module will build on prior anatomy and physiology knowledge obtained. Students will be taught ethical issues relating to scope of practice. This module provide students with the opportunity to learn a wide range of modern manual therapy soft tissue techniques applied to the skin, myofascial tissue, tendons, ligaments, peripheral lymphatic system. Students will learn to assess and devise treatment plans for treatment of soft tissue pathologies using therapeutic massage techniques to include massage therapy, trigger point therapy, connective tissue mobilisation, myofascial release, sports massage, deep transverse frictions, and lymphoedema massage, scar tissue mobilisation. This module focuses on commonly encountered patient presentations which map to case studies. Techniques for special populations will also be taught. They are given the opportunity to integrate learning into their own clinical practice and develop clinical reasoning skills, understand the principles of patient assessment and management, including contraindications and indications, as well as the integration of pain science. Students will also be able to analyse the different approaches to massage techniques and specific soft tissue mobilisation techniques, evaluate existing approaches using current literature and develop communication and clinical reasoning skills that can allow more effective management of patients with soft tissue dysfunctions.

On completion of the module the student will:

- know and apply the Personal Protection Measures both in terms of hygiene and ergonomics
- act on the basis of the basic principles of ethics and bioethics of the physiotherapy profession, with responsibility, conscientiousness, consistency, confidentiality and empathy.
- Understand the ethics concerned with practice of therapeutic massage
- have acquired the basic skills in the assessment and differential diagnosis of the tissues responsible for the dysfunction of a joint
- be able to collect and interpret the results of the assessment, as well as decide on the application of the most appropriate technique to repair soft tissue dysfunction through clinical reasoning and research documentation
- demonstrate knowledge, understanding and practical application of therapeutic massage for a range of musculoskeletal conditions.
- Demonstrate knowledge of contra-indications and assessment techniques for application of therapeutic massage in pathological conditions.
- Be able to demonstrate awareness of what members of the multidisciplinary healthcare team do, be able to communicate and work effectively in a professional manner with them when appropriate with regards to the patient assessment and treatment, adhering to relevant practice standards and ethical conduct.
- Demonstrate the ability to search, retrieve and appraise the literature and evidence base for therapeutic massage techniques. Be able to integrate current literature into physiotherapy practice.
- Adopt a patient-centred approach, respecting diversity and interculturality.
- Be sensitive to environmental protection issues, such as reducing the environmental footprint, to be able to help European citizens stay healthy and properly prepared to

face the effects of climate change by adopting healthy behaviours.

- During the assessment:
  Following patient consent be able to demonstrate competencies on the comprehensive and safe assessment of the patients soft tissue.
  Be able to record assessment and treatment outcomes accurately
  Be able to interpret findings with what is expected for the condition, including or excluding alternative diagnoses

- During physiotherapy treatment:
  Be able to prioritise the patients needs in terms of soft tissue massage
  Demonstrate an understanding of the ethics concerned with practice of therapeutic massage.
  Have the ability to select and apply therapeutic massage techniques safely and competently.
  Be able to evaluate the effectiveness of the therapeutic massage interventions, and modify and progress treatment as appropriate
  Demonstrate professional practice and behaviour in relation to massage within the scope of the module including communicating and appropriately interpreting communications with the patient, and at all times recognising cultural and linguistic diversity

General Skills

- Analysis and synthesis of data and information
- Decision making
- Design and management of physiotherapy interventions

(3) MODULE CONTENT

- Personal Protection Measures – Patient/physiotherapist safety
- History of soft mobilization techniques
- Physiotherapeutic evaluation, interpretation and design of treatment plan
- Combination during management of massage therapy with other therapeutic approaches
- Assessment, palpation and differential diagnosis of the structures responsible for dysfunction (muscles, tendons, fascia, ligaments) as well as training in the principles of progressivity of mobilizations. Laboratory exercises.
- Basic principles of massage therapy
- Basic principles of specific soft tissue mobilisation (Cyriax, Hunter)
- Trigger point assessment and management
- Sports Massage
- Assessment and management of lymphoedema. Laboratory exercises.
- Scar tissue massage

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

METHOD OF DELIVERY	Face to face

<table>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td colspan="2">Use of ICT and Communication with students (e-class)</td></tr>
<tr><td>TEACHING ORGANIZATION</td><td colspan="2"><table>
<tr><th>Activity</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>135</td></tr>
<tr><td>Laboratory Training</td><td>45</td></tr>
<tr><td>Total</td><td>180</td></tr>
</table></td></tr>
<tr><td>STUDENT ASSESSMENT</td><td colspan="2">The theoretical part of the course is evaluated by a written final exam that includes the administration of questionnaires of the entire material (multiple choice, true-false questions, filling in gaps and text development)

The laboratory part is evaluated by:
• Continuous evaluation of students throughout the semester to assess the adequacy of the skills taught
• Final examination of all the material taught</td></tr>
</table>

(5) SUGGESTED READING

Suggested Reading:

- *Lewit K. Manipulative therapy: Musculoskeletal medicine. London: Elsevier 2009.*
- *Jones, M. and Rivett, D. (2005) Clinical Reasoning for Manual Therapists. Edinburgh: Elsevier.*
- *Atkinson, K., Coutts, F. and Hassenkamp, A-M. (2005) Physiotherapy in Orthopaedics: A problem solving approach. 2nd edn. Edinburgh: Churchill Livingstone.*
- *Bogduk, N. (2005) Clinical Anatomy of the Lumbar Spine and Sacrum. 4th edn. Edingburgh: Churchill Livingstone.*
- *Boyling, J. and Palastanga, N. (1998) Grieve's Modern manual Therapy. 2nd edn. Edinburgh: Churchill Livingstone.*
- *Dandy, D. (2003) Essential Orthopaedics and Trauma, 4th edn. Edinburgh: Churchill Livingstone.*
- *Hertling, D. and Kessler, R.M. (2006) Management of Common Musculoskeletal Disorders. Physical Therapy Principles and Methods. 4 edn. Philadelphia: Lippincott, Williams & Wilkins.*
- *Kendall, F.P., McCreary, E.K. and Provance, P.G. (2005) Muscles: Testing and Function. 5th edn. Baltimore: Williams & Wilkins.*
- *Levangie P.K. and Norkin, C.C. (2005) Joint Structure and Function; A Comprehensive Analysis. 4rd edn. Philadelphia: Davis & Co.*
- *Palastanga, N., Field, D. and Soames, R. (2011) Anatomy and Human Movement. Structure and Function. 6th edn. Edinburgh: Elsevier.*
- *Whitney W. Lowe. Orthopedic Massage Theory and Practice Elsevier*
- *Chaitow, L. Modern Neuromuscular Techniques, 3e (Advanced Soft Tissue Techniques Churchill Livingstone*
- *Cantu RJ and Grodin AJ. Myofascial manipulation.Therapy and clinical application. 3rd edition.Gaithersburg: Aspen Publication, 2011.*
- *Dicke E, Schliack H and Wolf A. A manual of reflexive therapy of the connective tissue .Scarsdale, NY: Sidney's Simon Publishers, 1978 Giovanni De Domenico. Principles and Practice of Soft Tissue Manipulation.5th Edition.*
- *Hammer, W. I. (Ed.). (2007). Functional soft-tissue examination and treatment by manual methods. Jones & Bartlett Learning.*
- *Simmonds, N., Miller, P., & Gemmell, H. (2012). A theoretical framework for the role of fascia in manual therapy. Journal of bodywork and movement therapies, 16(1), 83-93.*
- *Chaitow, L. (Ed.). (2006). Muscle energy techniques. Elsevier Health Sciences.*
- *Riggs, A (2014). Deep Tissue Massage. Berkeley: North Atlantic Books.*
- *Travell, J., and Simons, D., (1998). Myofascial Pain and Dysfunction: The Trigger Point Manual. Vol 1: Upper Half of Body. Baltimore: LWW.*
- *Travell, J., and Simons, D., (1992). Myofascial Pain and Dysfunction: The Trigger Point Manual. Vol 2: Lower Extremities. Baltimore: LWW*
- *Ryan C Traumatic Scar Tissue Management Jessica Kingsley Publishers, 2016*

- *DamstraJ.R. (2010) Diagnostic and therapeutical aspects of lymphedema. Bonn: Rabe Medical Publishing*
- *Drainage Λεμφική παροχέτευση προσώπου Αθήνα Εκδόσεις ΑΛΜΑ ΕΠΕ*
- *Benjamin Patricia J. , Lamp Scott P., Understanding Sports Massage-Second Edition, Human Kinetics, 2005.*

Relevant Scientific Journals:

Journal of Manual and Manipulative Therapy
Journal of Manipulative and Physiological Therapeutics
Journal of Orthopaedic& Sports Physical Therapy
Musculoskeletal Science & Practice
BMC Musculoskeletal Disorders
Physiotherapy
International Journal of Therapeutic Massage and Bodywork

MODULE DESCRIPTION OF CLINICAL ELECTROTHERAPY

(1) GENERAL

FACULTY	**SEYP**		
DEPARTMENT	**Physiotherapy**		
STUDY LEVEL	**Undergraduate**		
MODULE CODE	**Π2-3040**	**SEMESTER**	3rd΄
MODULE TITLE	**CLINICAL ELECTROTHERAPY**		

ΑΥΤΟΤΕΛΕΙΣ ΔΙΔΑΚΤΙΚΕΣ ΔΡΑΣΤΗΡΙΟΤΗΤΕΣ	**WEEKLY TEACHING HOURS**	**ECTS**
Theory (lectures)	3	
Practical (practical exercises)	2	
Total	5	6

MODULE TYPE	Special Core Course
PRE-REQUIRED MODULES	
TEACHING AND EXAMINATION LANGUAGE:	Greek
MODULE SUITABLE for ERASMUS STUDENTS	Yes (English)
COURSE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
Clinical Electrotherapy is a basic and core course of the curriculum of studies in Physiotherapy Department. After completing the course, the students should be able to: • Understand the effects, indications and contraindications of the use of therapeutic electrical currents. • Inform the patient about the goal of the application of electrical stimulation, the benefits, the expected therapeutic result, the potential dangers, and obtain the patient's written informed consent. • Select, after assessment and with the patient's cooperation, the proper therapeutic schemas and application protocols of clinical electrical stimulation and its special

applications.

- Adapt the therapeutic protocol to the condition and to the particularities of each patient, considering issues related to the patient's ethnicity, religion and beliefs.
- Cooperate with other health care professionals when necessary (multidisciplinary meetings).
- They will act based on the basic principles of ethics and bioethics of the physiotherapist profession, with responsibility, conscientiousness, consistency, confidentiality, and empathy.
- They will adopt a patient-centred approach, respecting diversity and interculturality, in line with principles of active citizenship.
- They will have acquired a positive attitude towards "green" respiratory physiotherapy, which uses interventions mostly hands-on, contributing to the reduction of the environmental footprint by adapting interventions to the natural environment and adopting physical activity.
- They will be sensitive to environmental protection issues, such as reducing the environmental footprint, to be able to help European citizens stay healthy and properly prepared to face the effects of climate change by adopting healthy behaviours (wellness).

(3) COURSE OUTLINE

Theoretical – Teaching Units

- Introduction to clinical electrical stimulation: Summary of components of the physics of electrical stimulation. Classification and types of electrical therapeutic currents. Detailed description of the parameters for the planning of clinical electrical stimulation.
- Summary of components of biophysics and the biological effects of electrical stimulation. Physiological effects of electrical stimulation. Thermal, chemical effects and contraindications of electrical stimulation.
- Electrical muscular stimulation of enervated muscles. Neurophysiology of the normal muscle contraction. Indications and outcomes. Description, analysis and justification of the parameters of the electrical stimulation of enervated muscles.
- Electrical muscular stimulation of denervated muscles. Neurophysiology of the muscle contraction post denervation. Indications and outcomes. Description, analysis and justification of the parameters of the electrical stimulation of denervated muscles
- Specific instructions for the application of electrical muscular stimulation of denervated muscles. Methods of application. Examples of application to specific disorders or peripheral nerve injuries.
- Sensory electrical stimulation. Neurophysiology of elecroanalgesia.
- Sensory electrical stimulation. Transcutaneous electrical nerve stimulation (TENS). Indications and outcomes. Description, analysis and justification of the parameters of electrical stimulation with TENS.
- Sensory electrical stimulation. Interferential currents. Indications and outcomes. Description, analysis and justification of the parameters of electrical stimulation with interferential currents.

- Electrical stimulation in disorders of the central nervous system (CNS). Applications of electrical muscular stimulation. Application of TENS. Special applications for the reduction of spasticity, for motor retraining and muscle activation in disorders of the CNS.
- Application of functional electrical stimulation (FES) and retraining of the extremities for gait.
- Electromyography – Techniques of neural conductivity. Retraining of neuromotor system with EMG biofeedback.
- Iontophoresis: Indications and outcomes. Description, analysis and justification of the parameters of electrical stimulation in iontophoresis.
- Application of electrical stimulation for special therapeutic goals: Reduction of postsurgical pain. Prevention and treatment of deep thrombosis. Rehabilitation of cardiac and respiratory failure.
- Digital health transformation: telehealth services that leverage technology to provide remote patient education on care issues and can be carried out through a variety of methods such as telecommunications, remote patient monitoring tools such as wearables, live video chatting, transmission of electronic files, health applications for mobile devices (mobile health-mHealth apps) and therapeutic platforms (Digital Therapeutics-DTx).

Practical – Teaching Units

- Classification and types of electrical therapeutic currents. Detailed presentation of parameters for the planning of clinical electrical stimulation.
- Presentation of conditions that are associated with undesirable thermochemical effects and contraindications for electrical stimulation (errors in the selection of parameters and in the planning of the application protocol).
- Electrical muscular and sensory electrical stimulation. Techniques of locating and stimulating special therapeutic points. Motor points, trigger points, tender points, electroacupuncture points.
- Electrical muscular stimulation of enervated muscles. Methods, application techniques, application protocols, regulation of parameters.
- Electrical muscular stimulation of denervated muscles. Methods, application techniques, application protocols, regulation of parameters.
- Electrical sensory stimulation – Electroanalgesia. TENS: Methods, application techniques, application protocols, regulation of parameters.
- Electrical sensory stimulation – Electroanalgesia. Interferential currents: Methods, application techniques, application protocols, regulation of parameters.
- Electrical sensory stimulation – Electroanalgesia. Electroacupuncture: Methods, application techniques, application protocols, regulation of parameters
- Clinical application of functional electrical stimulation (FES): Methods, application techniques, application protocols, regulation of parameters.
- Electromyography, Techniques of neural conductivity, EMG-biofeedback. Methods, application techniques, application protocols, regulation of parameters.
- Iontophoresis: Methods, application techniques, application protocols, regulation of parameters.
- Special applications of electrical stimulation. High voltage electrical stimulation. Microcurrents.

(4) TEACHING METHODS - STUDENT ASSESSMENT

<table>
<tr><td>TEACHING METHODS</td><td>Theoretical
Lectures and presentations.
Use of e-class for the uploading and circulation of scientific articles, instructions, lectures, useful links, questionnaires, information related to the course conferences, etc.
Guest speakers approved by the Physiotherapy Department.
Practical
The students practice on practical and clinical problems in relation to planning and applying the protocols of electrical stimulation.</td></tr>
<tr><td>USE OF INFORMATION & COMMUNICATION TECHNOLOGY (ICT)</td><td>Open e-class platform</td></tr>
<tr><td>TEACHING ORGANIZATION</td><td><table><tr><th>Activity</th><th>Semester workload</th></tr><tr><td>Lectures</td><td>135</td></tr><tr><td>Practical</td><td>45</td></tr><tr><td>Total</td><td></td></tr><tr><td>Activity</td><td>180</td></tr></table></td></tr>
<tr><td>STUDENT ASSESSMENT</td><td>Final written examination with the option for written assignments (50%).
Periodical assessments of the students in practical teaching units (50%).</td></tr>
</table>

(5) SUGGESTED READING

Suggested Reading:

1. *Belanger AY. Therapeutic Electrophysical Agents. 3rd edition. Volters Kluner / Lippincott Williams & Wilkins, 2014.*
2. *Cameron MH. Physical Agents in Rehabilitation. An Evidence-Based Approach to Practice. 6th Edition. Elsevier Health Sciences Division, 2022.*
3. *Nelson RM, Currier DP, Hayes KW. Clinical Electrotherapy. Third Edition. USA: Apleton & Lange, 1999.*
4. *Robertson V, Ward A, Low J, et al. Electrotherapy Explained. Principles and Practice. 4th edition. Elsevier Health Sciences, 2006.*

5. *Watson T, Nussbaum E. Electrophysical Agents. Evidence-based Practice. 13th Edition. Elsevier, 2020.*

MODULE OUTLINE OF CLINICAL WORK PHYSIOLOGY

(1) GENERAL

SCHOOL	Health Science and Care Faculty		
DEPARTMENT	PHYSIOTHERAPY		
LEVEL OF STUDY	UNDERGRADUATE		
MODULE CODE	**П2-3050**	**SEMESTER OF STUDY**	**3rd**
MODULE TITLE	CLINICAL WORK PHYSIOLOGY		

INDEPENDENT TEACHING ACTIVITIES	**TEACHING WEEKS**	**CREDITS**
Theory-Interactive lectures	3	
Laboratory		
Total	3	5

MODULE TYPE	Special Background
PREREQUISITES:	
LANGUAGE OF INSTRUCTION AND EXAMINATIONS:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes (English)
COURSE WEBSITE (URL)	

(2) LEARINING OUTCOMES

Learning Outcomes
The presentation of the syllabus of Clinical Work Physiology will provide students with information on the study of the physiological actions required to perform a physical and mental/mental function from the resting state to the state of movement. This objective of this module investigates the regulatory mechanisms of the human body in combination with the activation of energy sources, biological adaptations and the physical/mental factors that affect exercise to improve health.

Clinical Work Physiology focuses on the physiological basis of exercise for all population groups, as well as the effects of exercise on biological (brain, endocrine, neuromuscular and cardiorespiratory systems) psychological and social/environmental factors. The main objective of the course is to understand the immediate and long-term effects of the clinical application of pre-planned exercise in the context of prevention and expansion of cognitive perception. Also, through the applied exercise physiology, a conscious and then an automated process of holistic therapeutic rehabilitation of trauma / injuries, diseases or dysfunctions of human body systems is caused by applying: a) the physiological mechanisms that bring about adaptations in the various systems of the human body for the design of exercise programs in athletes / athletes, b) the understanding of the basic differences between training and the implementation of exercise for the safe return to sports/daily activities, c) the design of therapeutic exercise programs but also the factors that shape the parameters of physical fitness and their progressivity and d) the use of new scientifically substantiated means to regain performance and a safe return to sport in athletes/athletes.

After completing the course, students:

- Will know and apply screening methods regarding the application of exercise to various populations.
- Will be able to evaluate different population groups and develop a relationship of cooperation/trust.
- Will be able to connect theory with evidence-based clinical practice in the application of exercise.
- Will be aware of global guidelines for designing safe exercise programs for all age groups.
- will be able to understand and manage the findings of the evaluation of biological systems of exercise participation in the clinical and physical environment, through an integrated clinical reasoning.
- Will be able to share the results of the assessment with the other health professionals involved in the design of exercise programs.
- Will be able to identify short- and long-term goals of therapeutic exercise in all solar populations.
- Will have acquired the ability to select appropriate and safe clinical practices, combining scientific documentation with the capabilities of each participant individually.
- Will have acquired proficiency in the skills of applying measurement and evaluation procedures to all categories of participants and age groups in exercise both in the clinical and physical environment.
- Will be able to re-evaluate the chosen therapeutic exercise intervention by identifying signs of improvement or deterioration of the clinical picture.
- Will have adopted the global self-management guidelines of the exercise participants themselves to teach them competently.
- Will act based on the basic principles of ethics and bioethics of the physiotherapist profession, with responsibility, conscientiousness, consistency, confidentiality, and empathy.
- Will adopt a patient-centered approach, respecting diversity and interculturality.
- Will have acquired a positive attitude towards the "green" clinical application of Work Physiology, which uses environmentally friendly and harmonious interventions, contributing to the reduction of the environmental footprint by adapting to the natural environment and adopting physical activity.
- Will be sensitive to environmental protection issues, such as reducing the environmental footprint, to be able to help European citizens stay healthy and properly prepared to face the effects of climate change by adopting healthy behaviors.

- Will be trained in the clinical application of digital transformation of exercise application to improve health.

General Skills

- Analysis and synthesis of data and information
- Cooperation with the multidisciplinary team
- Design and management of exercise interventions in different populations, athletes/athletes
- Autonomous work
- Teamwork

(3) MODULE CONTENT

THEORY

- Introduction to the course of Clinical Work Physiology. Criteria for applying exercise to the physiological systems of the human body. Short-term and long-term adjustments. Applications of Clinical Work Physiology in clinical therapeutic practice in compliance with personal protection and patient / physiotherapist safety measures. Identify the role of the exercise specialist in the clinical and physical environment with communication skills and scientific training. Behavioral adoption theories: Health belief model, Trans-theoretical model, Planned behavior theory. Research documentation for the application of these theories in organizing therapeutic exercise programs.
- Basic energy systems, energy base of exercise and correlation with training parameters of exercise participation. Homeostasis and energy expenditure at rest and exercise.
- Aerobic capacity - Aerobic endurance. Maximum oxygen uptake. Factors affecting aerobic capacity. Clinical examples, design of exercise programs for athletes/athletes.
- Anaerobic capacity. Factors affecting anaerobic capacity. Clinical examples, design of exercise programs for athletes/athletes.
- Lactic acid and exercise. Aerobic/anaerobic threshold, oxygen debt. Factors affecting aerobic/anaerobic capacity and improvement of alactic/lactate oxygen debt. Clinical examples, design of exercise programs for athletes/athletes.
- Methods and procedures for measuring/evaluating aerobic and anaerobic capacity. Laboratory tests, field tests. Clinical examples, design of exercise programs for athletes/athletes. ACSM (American College of Sports Medicine) guidelines.
- Muscle function and adjustments to exercise. Muscle contraction and adaptations after pathology or injury. Clinical examples, design of exercise programs for athletes/athletes.
- Muscle function and muscle performance factors. Mechanical principles of strength (Length/speed dynamic relationship). Muscle Strength parameters and adjustments after exercise or after pathology or injury. Clinical examples, design of exercise programs for athletes/athletes.
- Methods and procedures for measuring/evaluating muscle strength. Laboratory tests, field tests. Clinical examples, design of exercise programs for athletes/athletes. ACSM (American College of Sports Medicine) guidelines.
- Adaptations of the respiratory and cardiovascular systems to exercise. Clinical examples, design of exercise programs for athletes/athletes.
- Hormones, immune system and thermoregulation. Adjustments and exercise. Clinical examples for athletes/athletes.
- Body composition and body mass index. Diet and exercise. Caloric intake/consumption assessment systems. Clinical examples, design of exercise programs for athletes/athletes.
- Organization - design of exercise/nutrition programs and prevention after injury or pathology for prevention and improvement of performance. Determination of exercise load/volume and ACSM (American College of Sports Medicine) guidelines.
- Clinical application of digital health transformation in sports physiotherapy: telerehabilitation and virtual reality services that leverage technology to provide remote patient education on

healthcare issues such as digital wearable technologies, live video chatting, electronic file transmission, mobile health applications and therapeutic digital platforms.

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

DELIVERY METHOD	Face to face
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of ICT Communication with students (e-class) Use of Electronic Applications (apps): Posture checking, Kinvet equipment, Digital assessment tools and VR apps.

TEACHING ORGANIZATION

Activity	***Semester Workload***
Theory-Lectures	135
Visit to clinical areas for measurement/evaluation and implementation of exercise programs	
Total	135

STUDENT EVALUATION

The theoretical part of the course is assessed (50%) by:

1. Written final exam (70%) with the administration of questionnaires of all material (multiple choice, true-false questions, filling in gaps and text development)
1. Elaboration and presentation of group work (30%)

*** The grade of evaluation of the theoretical part constitutes 100% of the total grade of students in the course of **Clinical Ergophysiology***

(5) SUGGESTED READING

1. *American College of Sports Medicine. ACSM's exercise management for persons with chronic diseases and disabilities. 3rd Edition. Champagne, IL: Human Kinetics, 2009.*
2. *American College of Sports Medicine. ACSM's guidelines for exercise testing and prescription. Baltimore: Lippincott Williams & Wilkins, 2006.*
3. *American College of Sports Medicine. ACSM's Introduction to Exercise Science. 1st Edition. USA: Lippincott Williams & Wilkins, 2011.*
4. *ACSM ΚΛΙΝΙΚΗ ΦΥΣΙΟΛΟΓΙΑ ΤΗΣ ΑΣΚΗΣΗΣ, Walter Thompson, Εκδόσεις Κωνσταντάρας. 2019.*
5. *Astrand PO, Rodahl K, Dahl HA, et al. Textbook of work physiology. Physiological basis of Exercise. Champagne, IL: Human Kinetics, 4th Edition, 2003.*
6. *Bloomfield J, Fricker PA, Fitch KD. Science and Medicine in Sports. 2nd Edition. USA: Blackwell Science Pty Ltd, 1996.*
7. *Bromley PD. Clinical Skills for Exercise Science. Routledge: Taylor & Francis Group, 2010.*
8. *Ehrman JK, Gordon P, Paul SV, Steven J. Keteyian. Clinical Exercise Physiology. 3rd Edition. IL: Human Kinetics, 2013.*
9. *Κλεισούρας Β. Εργοφυσιολογία (Τόμοι Ι, ΙΙ, ΙΙΙ). Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης, 2011.*
10. *McArdle W. Φυσιολογία της Άσκησης (Τόμοι Ι, ΙΙ, ΙΙΙ). Αθήνα: Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης, 2001.*
11. *McArdle WD, Katch FI, Katch VL. Exercise physiology: energy, nutrition, and human performance. 7th Edition. Lippincott Williams & Wilkins, 2009.*
12. *Melvin WH. Nutrition for fitness and sport. 4th Edition. Chicago: William C Brown Pub, 1995.*
13. *Powers S, Howley E. Exercise Physiology: Theory and Application to Fitness and Performance. 8th Edition. USA: McGraw-Hill Humanities, 2011.*
14. *Powers Scott, Howley Edward. Φυσιολογία της άσκησης: Θεωρία και εφαρμογές ευρωστίας και απόδοσης, BROKEN HILL PUBLISHERS LTD, 2018.*
15. *16.Wilmore J, Costill D. Φυσιολογία της Άσκησης και του Αθλητισμού (Τόμοι Ι, ΙΙ, ΙΙΙ). Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης, 2006.*
16. *Raven B.P, Wasserman H.D, Squires G.W, Murray D.T (2016). Φυσιολογία της άσκησης. Μια ολιστική προσέγγιση. Ιατρικές Εκδόσεις, Λαγός Δημήτριος*

Journals

- *Medicine and Science in Sports and Exercise*
- *Functional exercise and rehabilitation*
- *Qualitative research in sports and exercise and health*
- *Journal of clinical exercise physiology*
- *Journal of exercise science and fitness*
- *International journal of physiology exercise and physical education*
- *Journal of sports and exercise physiology*
- *International journal of sports physiology and performance*
- *International journal of research and exercise physiology*
- *The journal of strength and conditioning research*
- *International journal of strength and conditioning*

MODULE OF INTERNAL MEDICINE II

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
LEVEL OF STUDY	UNDERGRADUATE		
CODE	П2-3060	**SEMESTER OF STUDIES**	**3RD**
TITLE	INTERNAL MEDICINE II		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
THEORY - LECTURES	3	3
TOTAL	3	3

MODULE TYPE	GENERAL BACKGROUND
PRE-REQUIRED MODULES	
TEACHING AND EXAMINATION LANGUAGE:	GREEK
MODULE SUITABLE for ERASMUS STUDENTS	YES
COURSE WEBPAGE (URL)	

(2) LEARNING OUTCOMES

Learning outcomes
The aim of the course is to train students in understanding diseases of the kidneys, endocrine glands, gastrointestinal system, liver–pancreas–biliary tract, and acid-base balance disorders, as well as their impact on patients and society. It aims to develop an appropriate level of knowledge and skills for the diagnosis, prevention, treatment, and rehabilitation of diseases affecting the kidneys, endocrine glands, gastrointestinal system, liver–pancreas–biliary tract, and acid-base balance disorders. The course provides knowledge and competencies related to the interpretation, definition, classification, understanding, mechanisms, diagnostics, and specific characteristics of

diseases. Additionally, it informs students about prevention strategies, pathophysiological and pathogenic mechanisms, fundamental principles of therapeutic management, biopsychosocial impacts, and rehabilitation approaches.

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

- Recognize the mechanisms underlying various diseases in their onset, symptomatology, and progression.
- Identify and contribute to solving diagnostic and therapeutic problems in collaboration with medical personnel.
- Develop the necessary skills to effectively contribute to disease prevention, treatment, and rehabilitation.

General Competencies

- Autonomous Work
- Teamwork
- Decision Making
- Research, Analysis, and Synthesis of Data and Information, utilizing the necessary technologies

(3) CONTENT OF THE COURSE

Kidney Diseases – Acid-Base Balance Disorders – Electrolytes

Description of the thematic unit: Disorders of sodium homeostasis (hypernatremia, hyponatremia), potassium (hypokalemia, hyperkalemia), calcium and magnesium Disorders, acid-base balance disorders, volume disorders, acute kidney failure, chronic kidney disease, glomerulonephritis, nephrotic syndrome, interstitial nephropathy, nephrolithiasis, cystic kidney diseases, methods of renal function replacement.

Diseases of endocrine glands

Description of the thematic unit: diseases of the hypothalamus – anterior and posterior pituitary, thyroid disorders, parathyroid gland disorders, adrenal gland disorders, diabetes mellitus, hypoglycemia.

Infectious diseases

Description of the thematic unit: viral diseases, COVID-19 infection, HIV/AIDS, respiratory syncytial virus, influenza, adenovirus infections, enterovirus infections, herpesvirus infections, mumps. bacterial infections, Gram-positive

and Gram-negative bacteria, sepsis and septic shock, salmonellosis, tetanus, brucellosis, listeriosis, tuberculosis, fungal infections, protozoan and parasitic infections, principles of antimicrobial chemotherapy and antibiotic use policies.

Gastrointestinal system diseases

Description of the thematic unit: diseases of the esophagus, diseases of the stomach and duodenum, peptic ulcer, gastritis, diseases of the small and large intestine, idiopathic inflammatory bowel diseases, irritable bowel syndrome, diverticular disease. upper and lower gastrointestinal bleeding.

Diseases of the liver – pancreas – biliary tract

Description of the thematic unit: hepatitis, liver cirrhosis, cholelithiasis, cholecystitis, acute and chronic pancreatitis

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

Mode of course delivery	Face to face.
Use of information and communication technologies	Use of information and communication technologies - Communication with students (e-class).
Organization of teaching	

Activity	*Semester workload*
Interactive lectures	90
Total	90

Student assessment

Written examination covering the entire course material (100%).

(5) SUGGESTED READING

- *Τζιούφας Α, Βλαχογιαννόπουλος Π. Μουτσόπουλου Αρχές Παθοφυσιολογίας. Broken Hill Publishers Ltd., 2018*
- *Hart M, Loeffler A.G. Παθοφυσιολογία Νόσων. Broken Hill Publishers Ltd., 2014*
- *Papadakis MA, et al. Current Medical Diagnosis & Treatment 2024. 63rd edition. N.Y.: The McGraw-Hill Companies Inc, 2024.*
- *Loscalzo, J. et al. Harrison's Principles of Internal Medicine. 21st edition. N.Y.: The McGraw-Hill Companies Inc.,2022.*
- *Wilkinson IB, et al. Oxford Handbook Κλινικής Ιατρικής. 10η έκδοση Ιατρικές Εκδόσεις Λίτσας, Αθήνα 2019.*
- *McPhee S, Canong W. Pathophysiology of disease: An introduction to Clinical Medicine. 8th edition. N.Y.: The McGraw-Hill Companies Inc, 2018.*
- *Runge MS, Greganti MA. F. Netter Παθολογία. 2η Έκδοση. Εκδόσεις ΠΧ Πασχαλίδης, 2015.*
- *Χανιώτης Φ, Χανιώτης Δ. Νοσολογία – Παθολογία. Αθήνα: Εκδόσεις Λίτσας, 2002.*
- *Epstein O, Perkin GD, de Bono DP, Cookson G. Κλινική Εξέταση. Ιατρικές Εκδόσεις Λίτσας, Αθήνα 2004.*
- *Kumar P, Clark M. Παθολογία (2 τόμοι). Αθήνα: Ιατρικές Εκδόσεις Λίτσας, Αθήνα 2007.*
- *Zatouroff M. Έγχρωμος Άτλας - Τα Κλινικά Σημεία στην Παθολογία. Εκδόσεις ΠΧ Πασχαλίδης, 2005*

4th SEMESTER

s/n	MANDATORY			LECTURE		WORKSHOP		TOTAL		SEMESTER WORKLOAD	ECTS
	MODULES			HOURS	WORKLOAD	HOURS	WORKLOAD	HOURS	WORKLOAD		
	MANDATORY MODULES	CATEGORY	CODE								
1	MUSCULOSKELETAL PHYSIOTHERAPY FOR INJURIES	SM	П2-4010	3	135	2	45	5	180	180	6
2	MOTOR CONTROL	SM	П2-4020	3	135	2	45	5	180	180	6
3	RESPIRATORY PT	SM	П2-4030	3	120	2	45	5	165	165	5
4	CARDIOVASCULAR PHYSIOTHERAPY	SM	П2-4040	3	120	2	45	5	165	165	5
5	PHYSIOTHERAPY IN SPECIAL POPULATIONS	SM	П2-4050	3	105		-	3	105	105	4
6	RESEARCH METHODS	SBM	П2-4060	3	105		-	3	105	105	4
TOTAL				**18**	**720**	**8**	**180**	**26**	**900**	**900**	**30**

MODULE OUTLINE OF 'MSK INJURIES

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-4010	**Semester**	**4th**
Module Title	PHYSIOTHERAPY IN MUSCULOSKELETAL INJURIES		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
THEORY: Interactive Lectures - practice	3	
LABORATORY: Laboratory exercises	2	
Total	5	6

Module Type	Special Core Module
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	Yes
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes

The purpose of the module is the study and understanding of physiotherapeutic assessment and treatment of injuries of the musculoskeletal and peripheral nervous system. In particular, the evaluation of the musculoskeletal system and the treatment of musculoskeletal injuries related to bones, muscles, tendons, capsular and ligamental elements, as well as peripheral nerve injuries are taught in detail.

The physiotherapy programs that will be discussed in the module Musculoskeletal Physiotherapy in Injuries include choices of therapeutic means and tools depending on the goal set during the Physiotherapy Assessment and mainly the principles of Evidence-based Practice.

The goal remains the holistic, documented design of an individualized physiotherapy protocol designed for the deficits recorded during the patient's assessment.

After completing the module, students :

- They will acquire the ability to systematically complete the assessment of the patient with musculoskeletal problems
- They will have the ability to understand subjective and objective findings, to reproduce them using the clinical trials that are most appropriate both theoretically and clinically/practically.
- They will be able to understand and record physiotherapy assessment, and define the short- and long-term goals of physiotherapy intervention in musculoskeletal injuries.
- They will be able to organize and develop a documented physiotherapy protocol, as well as the ability to explain goals to the patient through effective communication.
- They will be able to design and choose the most appropriate approach for each patient, but also to re-evaluate it by understanding the needs (work, social, family), modifying and adapting their interventions.
- They will be able to apply the methods and techniques they choose for each musculoskeletal condition, with safety, effectiveness respecting the dignity of the patient and their own.
- They will understand and recognise the expected evolution of an intervention, and revise their approach if necessary.
- They will be able to use tools (questionnaires, scales, machines, etc.) to record subjective and objective findings, while they will be able to identify any weaknesses of either the examination or treatment, and they will be able to proceed to the development of other more appropriate tools.
- They will act on the basis of the basic principles of ethics and bioethics of the physiotherapist profession, with responsibility, conscientiousness, consistency, confidentiality and empathy.
- They will adopt a patient-centered approach, respecting diversity and interculturality, in accordance with principles of active citizenship.
- They will have acquired a positive attitude towards "green" physiotherapy Physiotherapy for musculoskeletal injuries, which uses interventions mostly with the hands (hands on), contributing to the reduction of the environmental footprint by adapting interventions to the natural environment and adopting physical activity.
- They will be sensitive to environmental protection issues, such as reducing the environmental footprint, in order to be able to help European citizens stay healthy and properly prepared to face the effects of climate change; adopting healthy behaviors (wellness)

General Competences
• Data Collection and Analysis • Synthesis of information, design of intervention plan and decision making • Autonomous work. • Teamwork. • Working in an interdisciplinary environment. • Respect for diversity and multiculturalism Demonstration of social, professional and ethical responsibility and sensitivity to issues of medical confidentiality, special populations • Observation and production of new techniques • Production of new research ideas.

(3) MODULE CONTENT

Theoretical Part

1. **Introduction (1) Introduction to the basic theoretical background of physiotherapeutic assessment and treatment of musculoskeletal injuries.** Concepts of inflammation, healing principles of collagen, connective, nervous and bone tissue. Adaptive changes of muscular, nervous connective, collagen and bone tissue in the pathology of injury/fracture.
2. **Introduction (2).** Complications of fractures. Principles of normal motor control and recognition of its malfunctions. Principles of application of therapeutic exercise in musculoskeletal injuries.
3. **Principles of physiotherapeutic evaluation and recording in musculoskeletal problems**. History Taking, Physical examination, Diagnostic tests, Clinical reasoning, and Treatment selection based on clinical and research evidence. Clinical relevance of findings during evaluation/rehabilitation of the musculoskeletal system**.**
4. **Musculoskeletal injuries of the shoulder - shoulder girdle.** Physiotherapeutic assessment and treatment of injuries in the area. Shoulder-shoulder girdle fractures- bursitis, adhesive capsulitis (frozen shoulder). Physiotherapeutic rehabilitation after conservative or surgical approach (tendon and ligament repair, internal and external fixation, arthroplasty, etc.)
5. **Musculoskeletal elbow injuries.** Physiotherapeutic evaluation and physiotherapeutic treatment of elbow area injuries. In particular, tests to assess the integrity of tendons, ligaments, muscles, bursa/serous pocket, nerve entrapment. Fractures of the elbow area. Physiotherapeutic rehabilitation after conservative or surgical approach (tendon and ligament repair, internal and external fixation, arthroplasty, etc.)
6. **Musculoskeletal injuries of the wrist and hand.** Physiotherapeutic evaluation and treatment of injuries of the hand and wrist area. In particular, tests to assess the integrity of tendons, ligaments (instability), muscles, capsule/bursa, fibrocartilaginous lesions, nerve entrapment. Fractures of the wrist and limb. Physiotherapeutic rehabilitation after conservative or surgical approach (tendon and ligament repair, internal and external fixation, arthroplasty, nerve decompression, etc.)
7. **Musculoskeletal injuries of the hip area.** Physiotherapeutic assessment and treatment of hip injuries. In particular, tests to assess the capsule/bursae, dislocation/subluxation, muscles, fibrocartilaginous lesions, nerve entrapment. Pelvic-hip fractures. Physiotherapeutic

rehabilitation after conservative or surgical approach (tendon and ligament repair, internal and external fixation, arthroplasty,, total/semi-total arthroplasty, etc.)

8. **Musculoskeletal injuries of the knee area.** Physiotherapeutic assessment and treatment of knee area injuries. In particular, tests for the assessment of the tibiofemoral and patellofemoral joints. Fractures of the knee. Physiotherapeutic rehabilitation after conservative or surgical approach (tendon repairs, internal and external osteosynthesis, total/semi-total arthroplasty, etc.)
9. **Musculoskeletal injuries of the foot area.** Physiotherapeutic assessment and treatment of foot injuries. In particular, muscle integrity assessment tests, etc. Fractures of the area of the lower 1/3 of the tibia / fibula and foot. Physiotherapeutic rehabilitation after conservative or surgical approach (ligament and tendon repair, internal and external fixation, arthroplasty, etc.)
10. **Musculoskeletal injuries of the spine area (cervical, thoracic and lumbar spine).** Physiotherapeutic evaluation and physiotherapy treatment of injuries of the SS. In particular, tests to assess the integrity of muscles, tendons, ligaments (instability). Fractures of the SS. Physiotherapeutic rehabilitation after conservative or surgical approach (laminectomy, kyphoplasty, spinal fusion, etc.)
11. **Peripheral nerve injuries (neurapraxia, axonotomy, neurotomy) with regional application to the upper limbs and face.** Neurological assessment pertaining to the lumbar, cervical and thoracic spine and upper limb as well brain nerves. Physiotherapy protocols for their treatment based on evidenced-based practice.
12. **Peripheral nerve injuries with regional application to the lower limb.** Neurological assessment pertaining to the lower limb and lumbar spine. Physiotherapy protocols for their treatment based on evidenced-based practice.
13. **Principles of implementation of physiotherapy programs for the treatment of peripheral nerve injuries** in relation to the treatment of choice (conservative physiotherapy and postoperative physiotherapy).

Laboratory Part

- Introductory concepts. Assessment of a patient with musculoskeletal injury. History taking, recording of data in accordance with international standards. Practical examples with recording of findings.
- Assessment of a patient with musculoskeletal injury (adults and children). Physical examination. Basic principles of its application. Good practice parameters (patient/therapist position, particularities depending on body type, type of injury, severity, any urgent symptomatology, etc.). Complications of fractures. Practical examples with recording of findings.
- Assessment and physiotherapeutic rehabilitation of musculoskeletal shoulder injuries in adults and children. Demonstration and practical application of subjective and objective data recording for the shoulder/shoulder girdle. Clinical reasoning, design and practical implementation of the appropriate physiotherapy protocol depending on the type of injury (fracture, ligament and muscle injury, injury/rupture of bursa, tendon, etc.), in conservative and / or surgical treatment. Practical examples.
- Assessment and physiotherapeutic rehabilitation of elbow musculoskeletal injuries in adults and children. Demonstration and practical application of clinical tests used to check the integrity of the various structures/tissues of the area. Recording of subjective and objective data for the elbow area. Clinical reasoning, design and practical application of the appropriate physiotherapy

protocol depending on the type of injury (fracture, ligament and muscle injury, injury/tear of the capsule and tendon, etc.), in conservative and/or surgical treatment. Practical examples.

- Assessment and physiotherapeutic rehabilitation of musculoskeletal injuries of the wrist / hand in adults and children. Demonstration and practical application of clinical tests used to check the integrity of the various structures/tissues of the area. Recording of subjective and objective data for the wrist/hand area. Clinical reasoning, design and practical implementation of the appropriate physiotherapy protocol depending on the type of injury (fracture, ligament and muscle injury, injury / tear of capsule, tendon, etc.) in conservative and / or surgical treatment. Practical examples.
- Assessment and physiotherapeutic rehabilitation of musculoskeletal injuries of the pelvic and hip area in adults and children. Demonstration and practical application of clinical tests used to check the integrity of the various structures/tissues of the area. Recording of subjective and objective data for the pelvis/hip area. Clinical reasoning, design and practical application of the appropriate physiotherapy protocol depending on the type of injury (fracture, ligament and muscle injury, injury/tear of capsule, tendon, etc.), in conservative and/or surgical treatment. Practical examples.
- Assessment and physiotherapeutic rehabilitation of musculoskeletal injuries of the knee area in adults and children. Demonstration and practical application to test the integrity of the various structures/tissues of the area. Recording of subjective and objective data on the knee area. Clinical reasoning, design and practical implementation of the appropriate physiotherapy protocol depending on the type of injury (fracture, muscle injury, injury / tear of capsule, tendon, etc.) and medical treatment (conservative or surgical). Practical examples.
- Assessment and physiotherapeutic rehabilitation of musculoskeletal injuries of the foot area in adults and children. Demonstration and practical application of clinical tests used to check the integrity of the various structures/tissues of the area. Recording of subjective and objective data for the foot area. Clinical reasoning, design and practical implementation of the appropriate physiotherapy protocol depending on the type of injury (fracture, ligament and muscle injury, injury / tear of capsule, tendon, etc.) in conservative and / or surgical treatment. Practical examples.
- Assessment and physiotherapeutic rehabilitation of musculoskeletal spinal injuries in adults and children. Demonstration and practical application of clinical tests used to check the integrity of the various structures/tissues of the area. Recording of subjective and objective data for the area of the CC. Clinical reasoning, design and practical implementation of the appropriate physiotherapy protocol depending on the type of injury (fracture, ligament or muscle injury, etc.) in conservative and/or surgical treatment. Practical examples.
- Assessment of neurological levels of cervical spine and brachial plexus. Elements of physiotherapeutic intervention in problems of these vertebral levels. Practical examples.
- Assessment of neurological levels of thoracic spine, lumbar spine and sacrococcyegeal roots/sciatic nerve. Elements of physiotherapeutic intervention in problems of these vertebral levels. Practical examples.
- Protocol for the application of physiotherapeutic intervention in conservative or surgical treatment of brachial plexus injury (example of physiotherapy during conservative treatment of a peripheral nerve, or after surgery). Practical examples.
- Evaluation and rehabilitation in cranial nerve problems. Treatment of facial palsy. Practical examples.

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

<table>
<tr><td>Delivery</td><td>Face to Face</td></tr>
<tr><td>Use of Information and Communication Technology (ICT)</td><td>Use of information and communication technologies. Communication with students (e-class) Lectures-presentations using a whiteboard, transphanescent, overhead projector, video and television Class discussion and feedback Work in small groups or individually Student presentations, Exercise of students with case studies of clinical cases aiming at the comprehensive assessment and physiotherapeutic intervention in injuries of the musculoskeletal system.</td></tr>
<tr><td>Teaching Organization</td><td>
<table>
<tr><th>Activity</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>135</td></tr>
<tr><td>Workshop</td><td>45</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Total</td><td>180</td></tr>
</table>
</td></tr>
<tr><td>Student Assessment</td><td>Theoretical part:
Written final exam.
Laboratory part:
Continuous evaluation of students in laboratory exercises, as well as in their weekly performance and participation in the teaching of the course
Final oral examination</td></tr>
</table>

(5) SUGGESTED READING

- *Lovell B., Lander M., Murch N. Κλινικές Δεξιότητες – Διάγνωση και αιτιολόγηση, Εκδότης Broken Hill Publishers LTD, 2024.*
- *Hecker H-U., Steveling A., Peuker E., Liebchen K. Άτλας σημείων Βελονισμού και πυροδότησης Μυοπεριτονιακού Πόνου. Επιμέλεια Ελληνικής έκδοσης: Γ. Γεωργούδης, Κωνσταντάρας Ιατρικές Εκδόσεις, 2023*
- *Hoogenboom B., Voigt M.I., Prentice W.E. Φυσικοθεραπευτικές Παρεμβάσεις στο Μυοσκελετικό Σύστημα, Fourth Edition 4th Edition, Ελληνική Έκδοση Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
- *Παναγόπουλος Α. Κλινικές Δοκιμασίες Του Μυοσκελετικού Συστήματος Στην Ορθοπαιδική. Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
- *Miller M., Hart JA. Review Ορθοπαιδικής Κωνσταντάρας Ιατρικές Εκδόσεις, 2010*
- *Ευσταθόπουλος Ν. Αρθρίτιδες: Διάγνωση και θεραπεία. Κωνσταντάρας Ιατρικές Εκδόσεις, 2010*
- *Staheli LT. Παιδοορθοπαιδική. Κωνσταντάρας Ιατρικές Εκδόσεις, 2007*
- *Goodman CC, Snyder TEK. Differential Diagnosis for Physical Therapists: Screening for Referral, Saunders. 2012*
- *Kellogg CC. Heick J., Lazaro RT. Differential Diagnosis for Physical Therapists 6th Edition, Elsevier, 2017*
- *Melzack R & Wall P. Textbook of pain. 6th edition. London Saunders, 2013.*
- *Hoppenfeld S: Ορθοπεδική Νευρολογία. Αθήνα: Μαρία Γρ. Παρισιάνου, 2000.*

- *Kisner C, Colby L. Therapeutic Exercise: Foundations and Techniques. 6th edition. Philadelphia, Published by Davis Plus, 2012.*
- *Butler DS. Explain Pain Supercharged Spiral-bound. NOI Group, 2017*
- *Musolino GM. Κλινικός συλλογισμός και λήψη αποφάσεων στη φυσικοθεραπεία, Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
- *Petty NJ., Ryder D., Lewis J. Μυοσκελετικό Σύστημα-Κλινική Εξέταση, Αξιολόγηση, Θεραπεία, Διαχείριση. Εκδότης Broken Hill Publishers LTD, 2022*
- *Brotzman B., Manske R. Ορθοπεδική αποκατάσταση στην κλινική πράξη. Κωνσταντάρας Ιατρικές Εκδόσεις, 2015*

MODULE OUTLINE OF MOTOR CONTROL

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-4020	**Semester**	4th
Module Title	Motor control		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Theory (lectures)	3	**6**
Laboratory (specific laboratory exercises and clinical training)	2	
Total	5	

Module Type	Specialty Module
Pre-Required Modules	
Teaching and Examination Language	Greek
Suitable for ERASMUS students	YES (English), undertaking an essay
Module Website (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
The module PHYSIOTHERAPEUTIC METHODS AND TECHNIQUES IN DISEASES OF THE NERVOUS SYSTEM is a basic introductory course for the concepts of physiotherapeutic interventions in patients with neurological deficits. The module content aims to provide students with an understanding of the concept of disability, the role of PTs in its management, the theories of motor control and motor learning as well as the theoretical basis and philosophy of the various methods, techniques and interventions applied to the treatment of people with neurological diseases. The module describes the principles of each method, its indications and contraindications to the patient with neurological deficits. This module is the basis on which the student will gain knowledge about the therapeutic approach through the methods and techniques applied to patients with neurological diseases. The aim of the module is to provide students with an understanding of the basic principles of motor control and motor learning theories, the motor development of the individual, and the choice of the most appropriate physiotherapeutic intervention to promote the various stages of motor control. After having successfully completed the module, " Physiotherapeutic Methods and Techniques in Diseases of the Nervous System " students will be able to: • Understand the disability model • To explain the role of PT in the treatment of patients with neurological deficits • Understand the relationship between motor control, motor learning and movement development • To distinguish the hierarchical theory from the systems theory of the motor control • Describe the development of posture and balance control • Associate theories of motor control and motor learning with physiotherapy intervention • To describe the philosophy of the various methods and techniques • Describe the motor learning strategies used in the methods and techniques • To act based on the basic principles of ethics and bioethics of the physical therapist profession, with responsibility, conscientiousness, consistency, confidentiality and empathy. • To adopt a patient-centered approach, respecting diversity and

interculturality
General Competences
• Analysis and synthesis of data and information • Decision making • Independent work • Group work • Work in an interdisciplinary context

(3) MODULE CONTENT

- Introduction to Neuroscience of Physiotherapy (The most important nervous system structures. The main functions of the nervous system structures)
- Nagi disability model (The role of PT in the treatment of adults and children with neurological deficits)
- Theories of motor control I
- Theories of motor control II
- Theories of motor relearning
- Relationship of motor control with therapeutic exercise (Therapeutic Session Planning)
- Positioning and handling to foster motor function
- Neurophysiological methods I (PNF, Brunnstrom method, Rood technique: theoretical background and therapeutic approach)
- Neurophysiological methods II (Bobath/NDT, Vojta t Method, theoretical background and therapeutic approach)
- Motor learning methods I (Carr & Shepherd, Perfetti; Peto-Conductive Education, Ayres-Sensory Integration theoretical background and therapeutic approach)
- Motor learning methods II (Peto-Conductive Education, Ayres-Sensory Integration; theoretical background and therapeutic approach)
- Constraint Induced Movement Therapy (CIMT); Reference of the theoretical basis, basic protocols applied to children and adults with hemiplegia)
- Association of theories with therapeutic intervention

(4) TEACHING AND LEARNING METHODS

DELIVERY	Physical presence
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform

TEACHING ORGANIZATION	Activity	Semester Workload
	Lectures	135
	Laboratory training and exercise	45
	Educational visits	
	Submission of an individual or team project	
	Total	**180**
STUDENT ASSESSMENT	**The theoretical part of the module** is assessed by final written examination (50%), which may include multiple choice questions, true-or-false questions, gap-filling and open-ended questions **The laboratory part** (50%) is evaluated with continuous assessment of the students throughout the semester (with practical demonstration of assessment methods, therapeutic intervention planning and demonstration of physiotherapy techniques)	

(5) SUGGESTED READING

- *Suggested books:*

1. Martin and Kessler. Φυσικοθεραπευτικές Παρεμβάσεις σε Ασθενείς με Νευρολογικές Παθήσεις. Επιμέλεια ελληνικής Έκδοσης: Δάφνη Μπακαλίδου. Αθήνα. Εκδόσεις: Κωνσταντάρας-Ιατρικές εκδόσεις , 2015

2.Anne Shumway-Cook, Marjorie Woollcott. Κινητικός έλεγχος. Από την έρευνα στην κλινική πράξη , Επιμέλεια ελληνικής Έκδοσης : Γ. Παράς 3η έκδοση,2012

3. Magill RA. Motor learning and control: concepts and application. 9th ed McGraw Hill; 2011.

4. Shumway-Cook A, Woollacott MH. Motor control : translating research into clinical practice. Lippincott Williams &wilkins;2006

5. Gentile A. skill acquisition : action, movement, and neuromotor processes. In : Carr JA, Shephard RB, editors. Movements science: foundations for physical therapy in rehabilitation. Aspen Publishers; Rockville, MD;2000

- *Suggested Reading:*

1. Alder SS, Beckers D, Buck M. PNF in practice: an illustrated guide, 2hd ed. Berlin, Springer, 2000.

2.. Richard A. Schmidt .Motor Schema theory after 27 years: Reflections and implications for a new theory. Research Quarterly for Exercise and sport. 2003;74(4):366-375

3..From motor learning to physical therapy and back again: the state of art and science of motor learning rehabilitation research. Jneurol phys Ther.2014;38(3):149-150.

4. Carr J, Shepherd R. Neurological Rehabilitation Optimizing Motor Performance. Woburn, MA, Butterworth-Heinemann, 1998.

5. O' Sullivan SB. Strategies to improve motor control and learning. In O' Sullivan SB, Schmidt TZ (eds). Physical Rehabilitation Assessment and Treatment, 4th ed. Philadelphia, FA Davis, 2001a,pp 363-410.

6. Schmidt RA. Motor schema theory after 27 years: reflections and implications for a new theory. Research quarterly for exercise and sport.2003 Dec; 74(4):366-275.

7. Gentile AM. A working model of skill acquisition with application to teaching. Quest. 1972;17(1):3-23

8. Shadmehr R, Holcomb HH. Neural correlates of motor memory consolidation. Science. 1997 Aug 8;277 (5327);821-825.

9. Jeannerod M. the timing of natural prehension movements . Journal of motor behavior. 1984

10.Gentile A. movement science; implicit and explicit process during acquisition of functional skills. Scandinavian journal of Occupational Therapy. 1998;(1):7-16.

11. Dickstein R , Deutsch JE. Motor imagery in physical therapist practice. Physical therapy. 2007 Jul;87(7):942-953.
12.Wulf G, Chiviacowsky S, Schiller E, Avilla LTG. Frequent external focus feedback enhances motor learning. Frontiers in Psychology. 2010 Nov 11;1 2010.
13.Sidaway B, Bates J, Occhiogrosso B, Schlagenhaufer J, Wilkes D. interaction of feedback frequency and task difficulty in children's motor skill learning. Physical therapy. 2012 Jul;92(70948-957.
14.Sidaway B, Ahn S, Boldeau P, Griffin S, Noyes B, Pelletier K. A comparison of manual guidance and knowledge of results in the learning of a weight- bearing skill. Journal of neurologic physical therapy. 2008;32(1);32.
15.Hogan N, Sternad D. On rhythmic and discrete movements: reflections, definitions and implications for motor control. Exp Brain Res. 2007 jul;181(1);13-30.
16.Laible M, Grieshammer S, Seidel G, Rijntjes M, Weiller C, Hamzei F. Association of activity changes in the primary sensory cortex with successful motor rehabilitation of the hand following stroke. Neurorehabilitation and Neural Repair.2012;26(7);881-888.
17.uisselbrink LD, Van Gyn GH. Task characteristics and the contextual interference effect. Percept mot Skills. 2011 aug;11391):19-37
18. . DeLuca, S.C., Case-Smith, J., Stevenson R., Ramey, S.L., (2012), "Constraint-induced movement therapy (CIMT) for young children with cerebral palsy: effects of therapeutic dosage", *J Pediatr Rehabil Med,* 5: 133-42.
19. . Taub, E., (2012), "The Behavior-Analytic Origins of Constraint-Induced Movement Therapy: An Example of Behavioral Neurorehabilitation", *Behav Anal,* , 35: 155–178.
20. Etoom, M., Hawamdeh, M., Hawamdeh, Z., Alwardat, M., Giordani, L., Bacciu, S., Scarpini, C., Foti, C. "Constraint-induced movement therapy as a rehabilitation rehabilitation intervention for upper extremity in stroke patients: systematic review and meta-analysis", *Int J Rehabil Res*, 2016, 39: 197-210.

-Related scientific journals:

- Physical therapy
- Journal of neurologic physical therapy
- Journal of motor behavior
- Research quarterly for exercise and sport.
- J neurol phys Ther
- J Pediatr Rehabil Med
- Int J Rehabil Res,

MODULE OUTLINE OF RESPIRATORY PHYSIOTHERAPY

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-4030	**Semester**	**4th**
Module Title	Respiratory Physiotherapy		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
THEORY: Interactive Lectures - practice	3	3
LABORATORY: Laboratory exercises	2	2
Total	5	5

Module Type	Special Core Module
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	Yes (English)
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes

The Respiratory Physiotherapy course is a basic student preparation course for the Clinical Education course in Respiratory and Cardiovascular Physiotherapy.

Students after successful completion of the Respiratory Physiotherapy course will:

- Have acquired knowledge about the functioning of the affected lung

- Be aware of the guidelines for the self-management of respiratory diseases of children and adults.
- Be able to aggregate, interpret, and synthesize evaluation results through clinical reasoning.
- Be able to identify the short- and long-term goals of physiotherapeutic intervention in respiratory patients.
- They will have acquired proficiency in the skills of applying respiratory physiotherapy interventions to chronic patients, children, and adults, as well as to critically ill patients in both clinical and natural environments.
- They will have adopted the global guidelines for self-management of respiratory diseases themselves to adequately teach them to respiratory patients.
- They will act based on the basic principles of ethics and bioethics of the physiotherapist profession, with responsibility, conscientiousness, consistency, confidentiality, and empathy.
- They will adopt a patient-centred approach, respecting diversity and interculturality, in line with principles of active citizenship.
- They will have acquired a positive attitude towards "green" respiratory physiotherapy, which uses interventions mostly hands-on, contributing to the reduction of the environmental footprint by adapting interventions to the natural environment and adopting physical activity.
- They will be sensitive to environmental protection issues, such as reducing the environmental footprint, to be able to help European citizens stay healthy and properly prepared to face the effects of climate change by adopting healthy behaviours (wellness).

General Competences

• Analysis and synthesis of data and information
•Decision making
•Individual work
•Teamwork
• Design and management of physiotherapeutic interventions

(3) MODULE CONTENT

• Lung function
• Acid-base balance
•Kinesiology of breathing
• Respiratory Pump Function – Dysfunctional reathing.
• Physiotherapeutic evaluation with the international S.O.A.P. system (Subjective Objective Assessment, Assessment of Findings, Organization of Therapy, Assessment of Progress).

• Respiratory Physiotherapy in Asthma (Assessment, Guidelines, Hyperventilation Management with Breathing Pattern Re-education, Respiratory Muscle Training, Asthma Self-Management Training Sessions, Pulmonary Rehabilitation). Laboratory exercises.
• Exercise-induced Asthma and Exercise in Adults and Children (Asthma-induce Exercise, Detection Tests, Adaptation to Exercise, Leisure Physical Activities). Laboratory Exercises.
• Respiratory Physiotherapy in Chronic Obstructive Pulmonary Disease-COPD (Assessment, Guidelines, Management of Dyspnoea with Breathing Pattern Re-education, Respiratory Muscle Training, Self-Management Training Sessions, Oxygen Therapy, Eating Disorders, Pulmonary Rehabilitation). Laboratory exercises.
• Bronchial drainage methods (Positioning-Percussions-Vibrations, Forced Expiratory Trial-FET, Active Cycle of Breathing Techniques-ACBT, Autogenic Drainage, Intrapulmonary Percussive Ventilation-IPV, Devices, Aerobic Exercise). Laboratory exercises.
• Respiratory Physiotherapy in Cystic Fibrosis (Assessment, Guidelines, Bronchial Drainage Techniques, Respiratory Muscle Training, Self-Management Training Sessions, Pulmonary Rehabilitation). Laboratory exercises.
• Respiratory Physiotherapy in patients with restrictive diseases (Pulmonary parenchymal diseases, pleural effusions, thoracic wall, and neuromuscular disorders) (Assessment, Techniques for Increasing Lung Volumes: Positions, Chest Expansion / Mobilization, Flow-oriented and Volume-oriented Incentive Spirometer). Laboratory exercises.
• Preoperative and postoperative respiratory physiotherapy in pulmonary tissue-heart-upper abdominal surgeries (Assessment, Bronchial drainage techniques, Techniques for increasing Lung Volumes, Early mobilization, Non-invasive mechanical ventilation-NIV). Laboratory exercises.
• Respiratory Physiotherapy in Intensive Care Unit-ICU (Functional and Respiratory Assessment, Breathing Exercises, Non-invasive Mechanical Ventilation (NIV), Alveoli Recruitment, Suctioning of Bronchial Secretions, Respiratory Muscle Training, Early Mobilization). Laboratory exercises.
• Digital health transformation: telehealth services that leverage technology to provide remote patient education on care issues and can be carried out through a variety of methods such as telecommunications, remote patient monitoring tools such as wearables, live video chatting, transmission of electronic files, health applications for mobile devices (mobile health-mHealth apps) and therapeutic platforms (Digital Therapeutics-DTx).

Laboratory training of students

Training of students in

- Methods of measuring and evaluating characteristics of respiratory patients as well as
- physiotherapeutic interventions for each respiratory condition to acquire the adequacy of the ability to apply them.

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery	Face to Face
Use of Information and Communication Technology (ICT)	Open e-class platform

Teaching Organization	Activity	Semester Workload
	Lectures	120
	Workshop	45
	Total	**165**
Student Assessment	The theoretical part of the course (50%) is assessed with: • Elaboration and presentation of group work and written final examination by administrating questionnaires of all material (multiple choice questions, right-wrong, fill-in-the-blank and text development) (70%). • and teamwork presentation of the group work (30%). The laboratory part (50%) is evaluated daily to assess the adequacy of the skills students have acquired.	

(5)SUGGESTED READING

Suggested Reading:

- *Γραμματοπούλου Ε. Φυσικοθεραπευτικές Τεχνικές και Μέθοδοι Αξιολόγησης στις Αναπνευστικές Παθήσεις. Αθήνα: Εκδόσεις Κωσταντάρας, 2023.*
- *AACVPR. Κατευθυντήριες οδηγίες για τα προγράμματα Πνευμονικής Αποκατάστασης. Επιμέλεια: Γραμματοπούλου Ε., Σκορδίλης Ε. Αθήνα: Εκδόσεις Πεδίο, 2015.*

- *Global initiative for asthma (GINA) Global strategy for asthma management and prevention 2022 (update). http: //www.ginasthma.org.*
- *Global initiative for Chronic Obstructive Pulmonary Diseases (GOLD) Global strategy for the diagnosis, management, and prevention 2022 (update). http: //www.goldcopd.org.*
- *Wilson LM, Morrison L, Robinson KA. Airway clearance techniques for cystic fibrosis: an overview of Cochrane systematic reviews. Cochrane Database of Systematic Reviews 2019, Issue 1. Art. No.: CD011231. DOI: 10.1002/14651858.CD011231.pub2.*
- *Gkaraveli M, Skordilis E, Grammatopoulou E, Karteroliotis K, Dania A, Morfis P and Fildisis G.* The Effect of Inspiratory Muscle Training on Respiratory Pressure, Pulmonary Function and Walking Ability in Preschool Children with Cerebral Palsy. Annals of Physiotherapy Clinics. 2019; 2(1): 1-8.
- *Grigoriadis K, Tsangaris I, Koutsoukou A, Kopterides P, Grammatopoulou E, Grigoriadou A, Armaganidis A. The respiratory effect of tracheal gas insufflation (TGI) on tracheostomized spontaneously breathing ICU patients. Journal of critical care, 2018; 48: 160-165.*
- *Grammatopoulou E, Charmpas T, Strati E, et al. The scope of physiotherapy services provided in public ICUs in Athens, Greece. Physiotherapy Theory and Practice. 2017; 33: 1-9.*
- *Grammatopoulou E, Skordilis E, Haniotou A, Zarotis J, Athanasopoulos S. The effect of a holistic self-management plan on asthma control. Physiotherapy Theory and Practice. 2017; 33:622-633.*
- *Belimpasaki V, Grammatopoulou E, Philippou A, Doumas I, et al. The implementation of Global asthma management guidelines in two general respiratory outpatient Clinics in Greece. Hospital Chronicles. 2017; 11(3):153–161.*
- *Radtke T, Nevitt SJ, Hebestreit H, et al. Physical exercise training for cystic fibrosis. Cochrane Database of Systematic Reviews 2017, Issue 11. Art. No.: CD002768. DOI: 10.1002/14651858.CD002768.pub4.*
- *Rietberg MB, Veerbeek JM, Gosselink R, et al. Respiratory muscle training for multiple sclerosis. Cochrane Database of Systematic Reviews 2017, Issue 12. Art. No.: CD009424. DOI: 10.1002/14651858.CD009424.pub2.*
- *Evangelodimou A, Grammatopoulou E, Skordilis E, Haniotou A. The Effect of Diaphragmatic Breathing on Dyspnea and Exercise Tolerance During Exercise in COPD Patients. CHEST 2015;148 (4_MeetingAbstracts), 704A-704A.*
- *Grammatopoulou E, Skordilis E, Georgoudis G, Haniotou A, Evangelodimou A, Fildissis G, Katsoulas T, Kalagiakos P. Hyperventilation in asthma: A validation study of the Nijmegen Questionnaire - NQ. Journal of Asthma. 2014; 29:1-8.*
- *Grammatopoulou E, Skordilis E, Evagelodimou A, et al. Validity and reliability evidence of the Nijmegen questionnaire in asthma. European Respiratory Journal. 2013; 42 (S57): 1307.*
- *Myrianthefs P, Gavala A, Skordilis E, Grammatopoulou E, Fildissis G, Gregorakos L, Baltopoulos, G. Spirometric reference values from a sample of an urban Greek population. Respiratory Therapy. 2012; 5:36-4.*
- *Grammatopoulou E, Skordilis E, Evangelodimou A, et al. Adequate physical activity in students with and without asthma. European Respiratory Journal. 2012; 40(S56):144.*
- *Pryor JA, Prasad SA. Physiotherapy for respiratory and Cardiac Problems. Adults and Pediatrics. 4th Edition. Edinburgh: Churchill Livingstone, Elsevier, 2012.*
- *Frownfelter D, Dean E. Cardiovascular and Pulmonary Physical Therapy. Evidence and Practice. 5th Edition. Missouri: Elsevier,Mosby, 2012.*
- *Grammatopoulou E, Haniotou A, Evangelodimou A, Tsamis N, Myrianthefs P, Baltopoulos. Factors associated with asthma control in patients with stable asthma. European Respiratory Journal. 2011; 38 (S55): 1297.*
- *Grammatopoulou E, Stavrou N, Myrianthefs P, et al. Validity and Reliability Evidence of the Asthma Control Test-Act in Greece. Journal of Asthma. 2011; 48(1):57-64.*
- *Grammatopoulou E, Skordilis E, Stavrou N, et al. The effect of physiotherapy-based breathing retraining on asthma control. Journal of Asthma. 2011; 48:593-601.*

- *Gosselink R, Clerckx B, Robbeets C, et al. Physiotherapy in the Intensive Care Unit. Neth J Crit Care. 2011; 15(2):66- 75.*
- *Grammatopoulou E, Belimpasaki V, Valalas A, Michos P, et al. Active Cycle of Breathing Techniques-ACBT contributes to pain reduction in patients with rib fractures. Hellenic Journal of Surgery. 2010; 82, 42-47.*
- *Grammatopoulou E, Haniotou A, Douka G, Koutsouki D. Factors associated with BMI in Greek adults with asthma. Journal of Asthma. 2010; 47, 276-280.*
- *Puhan MA, Gimeno-Santos E, Cates CJ, Troosters T. Pulmonary rehabilitation following exacerbations of chronic obstructive pulmonary disease (Review). Cochrane Database of Systematic Reviews, 2016, Issue Art. No.: CD005305.*
- *Borowitz D, Robinson KA, Rosenfeld M, et al. Cystic fibrosis foundation evidence-based guidelines for management of infants with cystic fibrosis. Journal of Pediatrics. 2009; 155(6Suppl): S73-S93.*
- *Manzano, RM, Carvalho CR, Saraiva-Romanholo BM, et al. Chest physiotherapy during immediate postoperative period among patients undergoing upper abdominal surgery: randomized clinical trial. Sao Paulo Medical Journal. 2008; 126:269-273.*
- *Grammatopoulou E, Skordilis E, Koutsouki D, et al. An 18-item standardized asthma quality of life questionnaire - AQLQ(S). Quality of Life Research. 2008; 17(2):323-33.*
- *Gosselink R. Breathing techniques in patients with chronic obstructive pulmonary disease (COPD). Chronic Respiratory Disease, 2004; 1: 163-172.*
- *Early F, Wilson PM, Deaton C, et al. Pulmonary rehabilitation referral and uptake from primary care for people living with COPD: a mixed-methods study. ERJ Open Res 2020; 6: 00219-2019.*
- *Stiller K. Safety issues that should be considered when mobilizing critically ill patients. Critical care clinics, 2007; 23:35-53.*
- *Ambrosino N, Carpenè N, Gherardi M. Chronic respiratory care for neuromuscular diseases for adults. Eur Respir J 2009; 34: 444–451*
- *Bodin P, Kreuter M, Bake B, et al. Breathing patterns during breathing exercises in persons with tetraplegia. Spinal Cord, 2003; 41:290–295.*
- *Aboussouan LS. Mechanisms of exercise limitation and pulmonary rehabilitation for patients with neuromuscular disease. Chronic Respiratory Disease, 2009; 6(4):231–249.*
- *Naji NA, Connor MC, Donnelly SC, McDonnell TJ. Effectiveness of pulmonary rehabilitation in restrictive lung disease. J Cardiopulm Rehabil. 2006; 26(4):237-43.*
- *Sommers J, Engelbert RH, Dettling-Ihnenfeldt D, Gosselink R, Spronk PE, Nollet F, van der Schaaf M. Physiotherapy in the intensive care unit: an evidence-based, expert driven, practical statement and rehabilitation recommendations. Clin Rehabil. 2015 Nov;29(11):1051-63.*
- *Related Journals:*
  - *Chest*
  - *Respiratory Medicine*
  - *Journal of Asthma*
  - *Quality of Life Research*
  - *American Journal of Critical Care Medicine*
  - *American Journal of Critical Care*
  - *American Journal of Critical Care Nursing*
  - *Physiotherapy Theory and Practice*

MODULE DESCRIPTION OF CARDIOVASCULAR PHYSIOTHERAPY

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	**PHYSIOTHERAPY**		
STUDY LEVEL	**UNDERGRADUATE**		
CODE	Π2-4040	**SEMESTER**	**4th**
TITLE	**CARDIOVASCULAR PHYSIOTHERAPY**		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
THEORY: Interactive Lectures - Practice	3	3
LAB: Laboratory training	2	2
Total	5	5

MODULE TYPE	Specialty
PRE-REQUIRED MODULES	
TEACHING AND EXAMINATION LANGUAGE:	Greek
MODULE SUITABLE for ERASMUS STUDENTS	Yes (English)
COURSE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
Learning Outcomes: After completing the course, the students should be able to: · Assess the basic parameters of the functional capacity of the circulatory system. · Understand in detail the design methodology of preventive cardiovascular adaptation programs and cardiovascular rehabilitation programs and to apply the basic planning principles for exercise programs in cooperation with patients, after obtaining their written informed consent.

· Cooperate with other health professionals when necessary (multidisciplinary meetings).

General Skills

- Analysis and synthesis of data and information
- Decision making
- Individual work
- Teamwork
- Planning and management of physiotherapy interventions

(3) MODULE OUTLINE

Theoretical – Teaching Units
· The extent and severity of cardiovascular disease issues. Epidemiological data. Justification for the necessity of designing prevention and rehabilitation programs. Elements of pathophysiology.
· The energy basis of physical workload and exercise. Aerobic metabolism – anaerobic glycolysis. Aerobic exercise – strength training program. Functional capacity of the circulatory system.
· Adaptation of cardiovascular function during exercise. Economy of myocardial work. Heart rate, arterial pressure, rate-pressure product.
Assessment of the economy of myocardial work. Acute and long-term effects of exercise on the economy of myocardial work.
· Adaptation of cardiovascular function during exercise. Performance of the circulatory system. Stroke volume, cardiac output, oxygen uptake.
· Assessment of the performance of the circulatory system. Maximum oxygen uptake. Acute and long-term effects of exercise on the performance of the circulatory system.
· Assessment of the functional capacity of the circulatory system. Maximum Cardiopulmonary exercise testing. Utilization of data from stress testing for the planning of cardiovascular adaptation programs based on metabolic and cardiovascular parameters.
· Methodology for designing and organizing cardiovascular adaptation programs. Basic principles of exercise design and prescription.
· Primary prevention of cardiovascular diseases. Planning of exercise program.
· Secondary prevention of cardiovascular diseases. Planning of rehabilitation programs. Physiotherapy in the intensive care unit. Physiotherapeutic methods and techniques for the management of cardiac and vascular surgeries.
· Planning of special rehabilitation programs for patients with coronary disease, for patients who have undergone bypass surgery, for patients with heart failure and for patients who have undergone heart transplantation.
· Physiotherapeutic assessment and treatment of peripheral vascular diseases. Planning special rehabilitation programs for patients with metabolic diseases and disorders, such as diabetes and metabolic syndrome.
· Assessment and treatment of cardiovascular patients with orthopedic, neurological, and other associated conditions.

Practical – Teaching Units
· Functional assessment of the cardiovascular patient.

· Heart rate measurement and assessment techniques.
· Arterial pressure measurement and assessment techniques.
· Assessment of pulse waves.
· Assessment of clinical symptoms of the cardiovascular patient.
· Techniques of assessing the economy of myocardial work.
· Techniques of assessing the performance of the circulatory system.
· Maximal exercise stress testing – Cardiopulmonary exercise testing.
· Physiotherapeutic treatment of the cardiovascular patient. Stage I (patients with myocardial infarction, ischemic cardiopathy, etc.).
· Physiotherapeutic treatment of cardiovascular diseases. Stages II, III.
Planning exercise programs for vascular problems. Peripheral arteriopathies - Venous thrombosis – Phlebitis.
· Planning of exercise programs for metabolic diseases, such as diabetes and metabolic syndrome.
· Physiotherapeutic treatment of cardiovascular patients with accompanying musculoskeletal, neurological and other problems.

(4) TEACHING and LEARNING METHODS - EVALUATION

Teaching Method	Face to face
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of ICT Communication with students (e-class)
TEACHING ORGANISATION	***Activity*** / ***Semester workload*** Lectures: 120 Laboratory exercise: 45 Total: **165**
STUDENT ASSESSMENT	The theoretical part of the course is assessed with • A final written examination with the possibility of assigning assignments. • Intermediate assessments of students in laboratory modules.

(5) RECOMMENDED BIBLIOGRAPHY

Suggested Bibliography:

• American College of Sports Medicine: ACSM`s Guidelines for Exercise Testing and Prescription. Wolters Kluwer Health, 11th Edition, 2021. • American College of Sports Medicine: ACSM`s Resource Manual for Guidelines for Exercise Testing and Prescription. Wolters Kluwer/ Lippincott Williams & Wilkins, 7th Edition, 2014.
• American College of Sports Medicine: ACSM`s Κλινική Φυσιολογία της Άσκησης. Επιμέλεια Φιλίππου Αναστάσιος. Κωνσταντάρας Ιατρικές Εκδόσεις, 2022. • American Heart Association. Classification of blood pressure for adults. available at: http: //www. americanheart. org/presenter. jhtml?identifier=4450 • Astrand PO, Rodahl K, Dahl HA,

Stromme SB. Textbook of Work Physiology. Physiological basis of Exercise. Champagne, IL: Human Kinetics, 2003.
• American Association of Cardiovascular and Pulmonary Rehabilitation: Guidelines for Cardiac Rehabilitation and Secondary Prevention Programs. 5th Edition. Champagne, IL: Human Kinetics, 2013.
• American College of Sports Medicine - American Heart Association. Physical Activity and Public Health: Updated Recommendation for Adults. Circulation. 2007; 116:1081-1093. • American Heart Association: A Scientific Statement. Williams MA, et al. Resistance Exercise in Individuals With and Without Cardiovascular Disease: 2007 Update. A Scientific Statement. Circulation. 2007; 116:572-584.
• American Heart Association: A Scientific Statement. Balady GJ, et al. Clinician's Guide to Cardiopulmonary Exercise Testing in Adults: A Scientific Statement. Circulation. 2010; 122:191- 225. • American Heart Association: A Scientific Statement. Thompson PD, et al. Exercise and Physical Activity in the Prevention and Treatment of Atherosclerotic Cardiovascular Disease. Circulation. 2003; 107:3109-3116.
• American Heart Association: A Statement for Healthcare Professionals. Balady GJ, et al. Core Components of Cardiac Rehabilitation/Secondary Prevention Programs. Circulation. 2000; 102:1069-1073. • European Association for Cardiovascular Prevention and Rehabilitation. Piepoli MF, Cora U, Benzer W, et al. Secondary Prevention through Cardiac Rehabilitation. A Position Paper from the Cardiac Rehabilitation Section. European Journal of Cardiovascular Prevention and Rehabilitation. 2010; 17:1-17.
• European Association for Cardiovascular Prevention and Rehabilitation. Perk G, Baker GD, Gohlke H, et al. European Guidelines on cardiovascular disease prevention in clinical practice (version 2012). European Journal of Preventive Cardiology. 2012; 19:585-667.
• European Society of Cardiology Guidelines. Tendera M, et al. Diagnosis and Treatment of Peripheral Artery Diseases. European Heart Journal. 2011; 32:2851–2906.
• Kokkinos P, Myers J, Kokkinos JP, et al. Exercise capacity and mortality in black and white men. Circulation. 2008; 117:614-622.
• Papathanasiou G, Tsamis N, Georgiadou P, Adamopoulos S. Beneficial Effects of Physical Training and Methodology of Exercise Prescription in Patients with Heart Failure. Hellenic Journal of Cardiology. 2008; 49:267-277.
• Papathanasiou G, Georgakopoulos D, Papageorgiou E, et al. Effects of Smoking on Heart Rate at Rest, and During Exercise, and on Heart Rate Recovery in Young Adults. Hellenic Journal of Cardiology. 2013; 54(3):168-177
• Pickering TG, Hall JE, Appel LJ, et al. Recommendations for Blood Pressure Measurement in Humans and Experimental Animals: Part 1: Blood Pressure Measurement in Humans: A Statement for Professionals from the Subcommittee of Professional and Public Education of the American Heart Association Council on High Blood Pressure Research. Hypertension. 2005; 45:142-161.
• Νανάς Σ: Καρδιοαναπνευστική Δοκιμασία Κοπώσεως και Προγράμματα Καρδιοαναπνευστικής Αποκατάστασης. Αθήνα: Εκδόσεις Αθ. Σταμούλης, 2006.
• Παπαθανασίου Γ. Ομάδα Εργασίας της Ελληνικής Επιστημονικής Εταιρείας Φυσικοθεραπείας για την Πρόληψη και Αποκατάσταση των Καρδιοαγγειακών και Αναπνευστικών Παθήσεων. «Αποκατάσταση Καρδιοαγγειακών Παθήσεων. Βασικές Αρχές Σχεδιασμού Προγραμμάτων Άσκησης». Θέματα Φυσικοθεραπείας – Physiotherapy Issues. 2006; 4(3):6-12.

MODULE OUTLINE OF 'PHYSIOTHERAPY IN SPECIAL POPULATIONS'

(1) GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-4050	Semester	**4th**
Module Title	Physiotherapy in Special Populations		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Lectures	3	
Total	3	4

Module Type	Special Core Module
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	Yes (English)
Module Website (URL)	

(2) LEARNING OUTCOMES

Learning outcomes
The course is an introduction to the education of students on issues related to the concept of the different physiotherapeutic approach of the patient with particular medical conditions that may affect his health index (eg. quality of life, life-years saved, health services utilisation). During the course, students are given the opportunity to come in contact with and analyze in detail particular units such as physiotherapy in childhood and adolescence, pregnancy, female and male urinary incontinence, burns, amputations, cancer-related, diabetes related, dialysis-related and immune deficiency-related patients as well as mental health patients. The aim of the course is to acquire the skills to find relevant articles and bibliography and to understand complex clinical cases. Upon successful completion of the course, the students: • Will understand the basic concepts of the special disease entities • They will be able to approach patients with special disease entities and develop a relationship of cooperation/trust • They will be able to link theory with evidence-based clinical practice • They will be aware of the importance of the physical therapy assessment for the holistic treatment of the findings • They will be able to understand and manage the findings of the assessment of patients with specific disease entities in the clinical and physical environment, through an integrated clinical reasoning • They will be able to share the results of the assessment with the other health professionals involved in the treatment of the above patients • They will be able to determine the short-term and long-term goals of physical therapy intervention in patients with special pathological entities • They will have acquired the ability to select appropriate and safe clinical practices, combining scientific evidence with the capabilities of each individual patient and applying them both in the clinical and natural environment • They will be able to re-evaluate the selected therapeutic intervention by recognizing the signs of improvement or deterioration of the clinical picture • They will act based on the basic principles of ethics and bioethics of the physical therapist profession, with responsibility, conscientiousness, consistency, confidentiality and empathy • They will adopt a patient-centered approach, respecting diversity and interculturality. • They will develop the ability to work with their peers to analyze and present issues related to interdisciplinary collaboration between health professionals involved in the treatment of the above patients

General Competences
• Analysis and synthesis of data and information • Decision making • Independent work • Teamwork

(3) MODULE CONTENT

- Physiotherapy in Gynecology
- Physiotherapy in Obstetrics
- Physical therapy and pregnancy, Therapeutic exercise before and after childbirth
- Physiotherapy and female / male urinary incontinence
- Upper / lower limb amputations, Intentions
- Burns and physiotherapy
- Diabetes and Physiotherapy,
- Acquired immune deficiency and physiotherapy
- Hemophilia and physiotherapy
- Oncology and physiotherapy
- Mental illness and physiotherapy
- Hemodialysis and physiotherapy
- Peculiarities in developmental therapeutic exercise
- Splints and physiotherapy
- Therapeutic exercise in water - hydrotherapy - bath therapy

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery	Face to Face
Use of Information and Communication Technology (ICT)	Open e-class platform
Teaching Organization Delivery	

Activity	Semester Workload
Lectures	105
Teamwork for the analysis of therapeutic approaches for patients with special disease entities	
Total	***105***

Use of Information and Communication Technology (ICT)	The theory of the course is evaluated with ✓ Written final examination (50%) which includes questionnaires covering all the course material related to multiple choice, right-to-wrong questions, filling in the blanks and essay-type questions ✓ Teamwork presentation (50%)

(5) SUGGESTED READING

- *Suggested Reading:*

- *Williamson P. Θεραπευτική άσκηση για ειδικούς πληθυσμούς. Αθήνα: Εκδόσεις Κωνσταντάρας 2016*
- *Kisner C., Colby L.A., Borstad J. Θεραπευτικές ασκήσεις. Βασικές αρχές και τεχνικές. Αθήνα: Εκδόσεις Κωνσταντάρας 2020.*
- *Bø K, Berghmans B., Mørkved S. Evidence-Based Physical Therapy for the Pelvic Floor: Bridging Science and Clinical Practice 3rd Ed, Elsevier, 2024.*
- *Santos-Rocha R. Exercise and Physical Activity During Pregnancy and Postpartum. 2nd Ed, Springer, 2022.*
- *Probst M, Skjaerven L.H. Physiotherapy in Mental Health and Psychiatry: a scientific and clinical based approach 1st Ed, Elsevier, 2017.*
- *Colberg S.R. Exercise and Diabetes: A Clinician's Guide to Prescribing Physical Activity. American Diabetes Association, 2013.*
- *Lusardi M.M., Jorge M., Nielsen C.C. Orthotics and Prosthetics in Rehabilitation 3rd Ed, Saunders, 2012.*

-*Related Scientific Journals:*

- *Physical Therapy & Rehabilitation Journal – https://academic.oup.com/ptj*
- *Journal of Bodywork & Movement Therapies - https://www.sciencedirect.com/journal/journal-of-bodywork-and-movement-therapies*
- *Physiotherapy Research International* - https://onlinelibrary.wiley.com/journal/14712865

MODULE OUTLINE OF 'RESEARCH METHODS'

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDIY LEVEL	UNDERGRADUATE		
MODULE CODE	Π2-4060	SEMESTER	4th
MODULE TITLE	RESEARCH METHODS		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
	Theory – practical	3	4
MODULE TYPE	Special Core Module		
PRE-REQUIRED MODULES			
TEACHING AND EXAMINATION LANGUAGE:	Greek		
SUITABLE for ERASMUS STUDENTS	Yes (English)		
MODULE WEBSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes
The course aims to familiarize students with the research methodology in the field of sciences in general, and in particular in the field of health sciences and to describe the basic methodology and scientific information research principles. Also, to guide students to develop skills, in order to actively participate in scientific research, and especially to form research questions, to investigate research fields, statistical concepts, review the literature and develop a scientific protocol and regime. Emphasis is placed on the necessary types of research methodology for answering clinical investigation questions relative to physiotherapy and for comprehending the importance of ethics in conducting a research The student, after the successful completion of the course, will be able to: • Recognize the necessity (aims and objectives) of research in clinical practice and in physiotherapy. • Comprehend the basic principles and the steps for the conduction of a research (qualitative or quantitative). • Implement the proper research design and protocol for the investigation of a research question • Recognize basic concepts of descriptive statistics, like the mean, mean value, standard deviation, standard error, kurtosis, etc. and how to use them in a research • Identify the problems and threats in research literature and how to assess them • Follow the ethics in conducting a research

- Recognize the importance of the reliability and validity concepts both in research and in clinical practice
- Know how to compose and scientific article and how to present the research results
- Know and use up to date means and methods to conduct a scientific research
- Use the international databases for seeking information in the field of health sciences
- Use various statistical software for entering and analyzing research data

Present the research results through the use of IT

General Competences - Learning Outcomes

- Seek, analyze and compose data and information through the use of necessary technology (internet, database, software, etc.).
- Decision making
- Individual work
- Team work
- Work in a multi-disciplinary environment
- Developing new research ideas
- Evaluation and self-evaluation
- Developing free creative and deducting thinking
- Develop skills of written and oral presentation of scientific knowledge.

(3) MODULE CONTENT

- **Introduction, concepts and types of research**

  Introduction to research in health sciences – physiotherapy. Scientific and nonscientific methods for problem solving. Types of research. Qualitative-quantitative research. Internet in the service of science.
  Practical: Primary and secondary sources for searching information I. Practical application in general search engines (Google Scholar, Yahoo, etc.). Search engines for articles and books in the Greek Libraries net. Examples and applications. Individual/team projects and guidelines.
- **Information sources – Reviewing articles and books**

  Search literature in electronic or non- media. Sources of search information and databases. Strategies for searching information.
  Practical: Primary and secondary sources for searching information II. Practical application in the internet with specialized search engines (Medline, Pubmed, EMBASE, AMED, Ocvid, Sport Discus, etc.). Search strategies for randomize clinical and other trials (RCTs, CCts, etc.). Examples and applications. Student guidance.
- **Research design – Research protocols**

  Research problem. Research proposal. Research hypothesis. Pilot study. Research protocol.

Practical: Demonstration and use of statistical packages software. SPSS statistical program. Excel.MedCalc. Examples and applications.

- **Sampling**

  Accessing the population and selection of a sample. Sampling methodology. Selection and rejection criteria in a sample.
  Practical: Creating tables and graphs with a computer. Demonstration and application with the aid of statistical programs (SPSS, Excel, MedCalc,etc.). How to present research results with the aid of a computer. Examples and applications.

- **Reliability and validity principles**

  Reliability of measurement tools. Reliability types (test-retest, coherence, stability). Validity types in research (face, construct, criterion-related, etc.).
  Practical: Demonstration and learning to use statistical tests. Parametric tests. Non parametric tests. Testing for reliability and validity. Examples and applications.

- **Experimental-quantitative research in physiotherapy I**

  Research threats. Internal and external validity. Types of research design.
  Practical: Conducting a "hypothetical" research I. Searching for information in databases. Formulation of research hypothesis. Examples and applications.

- **Experimental-quantitative research in physiotherapy II**

  Methods of data collection – scientific tools. Variables (independent – dependent, confounding). Measurement scales.
  Practical: Conducting a "hypothetical" research II. Formulating a research protocol. Research procedure. Examples and applications.

- **Statistical analysis and interpretation of results**

  Parametric and non-parametric data. Basic statistical procedures for data analysis. Descriptive statistics. Errors in research.

- *Practical*: Conducting a "hypothetical" research III. Coding and data entry in spreadsheets of statistical packages. Data analysis. Examples and applications.

- **Qualitative-descriptive research in physiotherapy – questionnaires- interviews**

  Procedure for conducting qualitative research. Internal and external validity in qualitative research. Means for data collection. Constructing a questionnaire – ordinal scales. Correlational research. Case study.
  Practical: Completing a questionnaire. Coding and computer data entry. Constructing a questionnaire. Entry and data coding. Data entry in statistical programs. Data analysis and from questionnaires. Examples and applications. Submitting individual projects for assessment.

- **Systematic review-meta analysis**

  What is a systematic review and a meta-analysis? Cochrane collaboration. Procedure for conducting a systematic review and a meta-analysis. Information searching strategies for a systematic review.
  Practical: Creating a presentation with Powerpoint slides. Types or oral presentation of research results with Powerpoint. Creating a Powerpoint presentation. Creating transparencies on a transparency viewer. Examples and application.

- **Presentation of research results – writing an article – oral presentation – poster**

  Basic instruction on how to write a scientific paper. Procedure for article publication. Types and basic principles for presenting research results. Types and systems for writing references. *Practical*: Writing a scientific article – publication procedure. Demonstration of key points for writing a scientific article. Demonstration and implementation of software for writing the references (Reference Manager, EndNote, etc.). Types of writing the names of authors of scientific article. Writing a letter to the editor. Examples and applications.
- **Ethics**

  Categories of scientific deceit. Ethics issues and copywrite. Plagiarism. Protecting the participants in a research. Consent forms for participating in a study. Protecting experimental animals.
  Practical: Writing a poster. Demonstrationa and creating a poster in a computer with specialized software (Powerpoitn, Office Publisher, etc.). Examples and applications.
- **Reviewing an article**

  Hierarchy of scientific evidence based review. Key points of reviewing an article. Recognizing threats in publicized studies in physiotherapy.
  Practical: Reviewing publicized studies. Critical analysis of an articles in teams. Examples and applications. Submission – presentation – evaluation of team projects.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence.
USE OF INFORMATION & COMMUNICATION TECHNOLOGY (ICT)	Open e-class platform
TEACHING ORGANIZATION	***Activity*** / ***Semester workload*** Lectures: 105 Practical: Team or Individual projects: Total: 105
STUDENT ASSESSMENT	• Final written examination (70%), which may include: ✓ Multiple choice questions ✓ Short answer questions or essay type questions about the definitions and concepts of research methodology ✓ Multiple choice questions, short answer questions or essay type questions about reviewing articles-studies

	✓ Submission and presentation of team or individual project (30%) There will be a questions' bank with the questions of previous examinations and projects.

(5) RECOMMENDED READING

Suggested reading

- *Batavia M. Clinical Research for Health Professionals. A User Friendly Guide. Butterworth - Heinemann, 2001.*
- *Bork CE. Research in Physical Therapy. Philadelphia PA: J.B Lippincott Co, 1993.*
- *Bowling A. Research Methods in Health: Investigating Health and Health Services. 3rd Edition. Buckingham – Philadelphia: Open University Press, 2009. (Μεθοδολογία Έρευνας στην Υγεία. Εκδόσεις Πασχαλίδης 2013.)*
- *Carter R, Lubinsky J, Domholdt E. Rehabilitation Research. Principles and Applications. 4th Edition. St. Louis, MO: Elsevier Saunders, 2010.*
- *Currier DP. Elements of Research in Physical Therapy. 3rd Edition. Baltimore MD: Williams and Wilkins, 1990.*
- *Domholdt E, Carter DR, Lubinsky J. Physical Therapy Research: Principles and Applications. 4th Edition. St. Louis, MO: Saunders, 2010.*
- *French S. Practical Research, Εκδόσεις Butterworth-Heinemann 1993.*
- *Hicks C. Research For Physiotherapist , Εκδόσεις Churchill Livingstone 1999.*
- *Howard, Sharp J.A. : Η Επιστημονική Μελέτη, Guttenberg, Αθήνα, 1994.*
- *Payton OD, Sullivan MS. Research: The Validation of Clinical Practice. 4th Edition. Philadelphia PA: F.A. Davis, 2005.*
- *Portney LG, Watkins MP. Foundations of Clinical Research: Applications to Practice. 3rd Edition. Upper Saddle River NJ: Pearson/Prentice Hall, 2008.*
- *Sim J, Wright C. Research in Health Care. United Kingdom: Nelson Thornes, 2002.*
- *Thomas, J., Nelson, J. Μέθοδοι Έρευνας Στη Φυσική Δραστηριότητα, Εκδόσεις Broken Hill 2023.*
- *Γέμπτος Π.: Μεθοδολογία των Κοινωνικών Επιστημών, Εκδόσεις Παπαζήσης, 1991.*
- *Δαρβίρη Χρ. Μεθοδολογία Έρευνας στο χώρο της υγείας. Εκδόσεις Πασχαλίδη 2009.*
- *Δημητρόπουλος Ε. Εισαγωγή Στη Μεθοδολογία Της Επιστημονικής Έρευνας, Εκδόσεις Έλλην, 2001.*
- *Καμπίτσης Χ. Η Έρευνα Στις Αθλητικές Επιστήμες, Εκδόσεις Τσαρτσιάνης Θεσσαλονίκη, 2004.*
- *Παναγιωτάκος Δημ. Μεθοδολογία της έρευνας και της Ανάλυσης Δεδομένων για τις Επιστήμες της Υγείας, Εκδόσεις Μ. Τσακαρίδου & Σια ΟΕ 2011.*
- *Παρασκευόπουλου, Ι. Μεθοδολογία Επιστημονικής Έρευνας, Αθήνα 1993.*
- *Σαχίνη Καρδάση Α: Μεθοδολογία Της Έρευνας. Εφαρμογή στο χώρο της υγείας, Εκδόσεις ΒΗΤΑ 1996.*
- *Σαχίνη Α, Καρδάση Α. Μεθοδολογία Έρευνας στα Επαγγέλματα Υγείας. 3η Έκδοση. Αθήνα: Εκδόσεις Βήτα, 2007*

Related scientific journals

- *Quality of Life Research*
- *Trials*

- *BMC Medical Research Methodology*
- *Journal of Medical Ethics*

5th SEMESTER

s/n	MANDATORY			LECTURE		WORKSHOP		TOTAL		SEMESTER WORKLOAD	ECTS
	MODULES			HOURS	WORKLOAD	HOURS	WORKLOAD	HOURS	WORKLOAD		
	MANDATORY MODULES	CATEGORY	CODE								
1	CLINICAL TRAINING I	SM	П2-5010	3	135	6	90	9	225	225	10
2	PHYSIOTHERAPY IN ADULT NEUROLOGICAL DISORDERS AND DISEASES	SM	П2-5020	3	150	2	45	5	195	195	6
3	MUSCULOSKELETAL PHYSIOTHERAPY IN DISORDERS	SM	П2-5030	3	150	2	45	5	195	195	5
4	MOBILIZATION OF NEUROMUSCULOSKELETAL STRUCTURES	SM	П2-5040	3	150	2	45	5	195	195	6
5	ELECTIVE MODULE GROUP A	E	П2-ЕА*	3	90	-	-	3	90	90	3
TOTAL				**15**	**675**	**12**	**225**	**27**	**900**	**900**	**30**

П2-ЕА* : the code of the elective course declared by the student from GROUP A (П2-ЕА10, П2-ЕА20, П2-ЕА30, П2-ЕА40, П2-ЕА50 or П2-ЕА60)

MODULE DESCRIPTION OF CLINICAL TRAINING I

(1) GENERAL

SCHOOL	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
LEVEL OF STUDY	UNDERGRADUATE		
MODULE CODE	**П2-5010**	**SEMESTER OF STUDY**	5th
MODULE TITLE	CLINICAL TRAINING I		

INDEPEDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Theory-Interactive lectures	3	
CLINICAL TRAINING	6	
Total	9	10

MODULE TYPE	Specialty
Pre-REQUIRED MODULES:	
TEACHING AND EXAMINATION LANGUAGE:	Greek
SUITABLE FOR ERASMUS STUDENTS	Yes
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

CLINICAL TRAINING I concerns the application of respiratory and cardiovascular physiotherapy- rehabilitation in children and adults in public and private facilities to

familiarize students with all possible clinical settings where physiotherapists are employed in this field.

CLINICAL TRAINING in Respiratory and Cardiovascular Physiotherapy is conducted in a cyclical rotation of students in Pulmonary, Cardiac Surgery, Surgery and Thoracic Surgery Clinics, in Intensive Care Units - ICU, in Cystic Fibrosis Clinic, in Pulmonary Rehabilitation Clinic and in Outpatient Asthma Clinic.

After completing the course, students:

- Will be able to apply all personal protection equipment.
- Will be able to approach the respiratory patient and develop a cooperative / trusting relationship with him
- Will be able to link theory to evidence based clinical practice
- Will be aware of the global guidelines for the treatment of respiratory and cardiovascular diseases.
- Will be able to understand and manage the findings of the assessment of the respiratory and surgical patient in the clinical setting, through integrated clinical reasoning
- Will be able to share the results of the assessment with other healthcare professionals involved in treating the same patient
- Will be able to Identify and set short-term and long-term goals of physiotherapy intervention
- Will have acquired the ability to select the appropriate and safe clinical practices combining scientific evidence with the capabilities of each individual patient
- will have acquired sufficient skills of applying respiratory and cardiovascular physiotherapy interventions to chronic respiratory, cardiac, surgical, critically ill patients, elderly and cancer patients.
- Will be able to reassess the selected therapeutic intervention by identifying signs of improvement or deterioration in the clinical picture of the respiratory and surgical patient
- Will have adopted global guidelines for self-management, so that they can teach them adequately to patients
- Act in accordance with the basic principles of ethics and bioethics of the physical therapy profession, with responsibility, consistency, confidentiality and empathy. Rules
- Will be able to adopt a patient-centered approach, recognizing diversity.
- Will have acquired a positive attitude towards “green” respiratory physiotherapy, which uses mostly hands on interventions, helping to reduce the environmental footprint by adapting interventions to the natural environment and by

understanding the close relationship between the environmental conditions and health status.

- Will be aware of environmental protection issues, such as reducing environmental footprints, so they will be able to help European citizens stay healthy, active and properly prepared to cope with the effects of climate change by adopting healthy behaviors.
- Will be trained in the clinical application of digital health transformation.
- Will adopt a patient-centered approach, respecting diversity and interculturality.

General Skills

- Analysis and synthesis of data and information
- Decision making
- Autonomous work
- Teamwork
- Work in an interdisciplinary environment
- Design and management of physiotherapeutic interventions
- Communication skills

(3) MODULE CONTENT

- Personal protection measures- patient/physical therapist safety
- Determine the role of the Respiratory Physiotherapist in the clinical setting
- Behavioral change theories: Health belief model, Trans-theoretical model, Planned behavior theory. Evidence bases on the application of these theories to respiratory diseases.
- Assessment tools and devices / equipment in Respiratory Physiotherapy (spirometer, oximeter, maximal inspiratory pressure meter-MIP, maximal expiratory pressure meter-MEP, capnograph, bronchial secreting devices, NIV device, resuscitation bag, oxygen dispensers, suction device, incentive spirometers, flowmeter, inhalers for children and adults, etc.). Familiarizing students with their use.
- Respiratory Failure - Mechanical Ventilation - Non-Invasive Ventilation (NIV) and clinical application.
- The effect of respiratory physiotherapy on acid-base balance, clinical case analysis.
- Oxygen therapy in chronic respiratory patients and severely ill patients. Clinical application and regulation of oxygen therapy devices.
- Analysis and management of clinical cases of obstructive pulmonary disease: Assessment, clinical reasoning, and individualized intervention planning.

- Pulmonary Rehabilitation: Assessment, Inclusion-Exclusion criteria, Standardized aerobic exercise programs and strengthening programs of respiratory and peripheral Muscles. Clinical case management.
- Assessment, clinical reasoning, and individualized management of thoracic-abdominal surgery (heart-lung-upper abdominal) cases.
- Assessment, clinical reasoning and individualized management of clinical cases with: pleural diseases, spine and rib cage deformities and pulmonary parenchymal diseases.
- CLINICAL TRAINING in the suction of bronchial secretions in severely ill patients.
- Assessment, clinical reasoning, and individualized physiotherapy management of severely ill clinical cases.
- Assessment, clinical reasoning, and individualized management of ICU patients with: VAPrelated pneumonia, atelectasis, neuromuscular syndrome, postoperative complications, traumatic brain injuries, spinal and spinal cord injuries, flail chest, extensive burns, pulmonary embolism, etc.
- Clinical communication skills
- Palliative care and physical therapy
- Clinical applications of digital health transformation: telehealth services that leverage technology to provide remote patient education on care issues and can be delivered through a variety of methods, such as telecommunications, remote patient monitoring tools such as wearables, live videos chatting, electronic files, mobile health- mhealth apps and platforms (Digital Therapeutics-DTx).

(4) TEACHING AND LEARNING METHODS-ASSESSMENT

<table>
<tr><td>TEACHING TYPE</td><td>Face to face</td></tr>
<tr><td>USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES</td><td>Open eclass platform

And use of applications (apps): oximeter -track oxygen, inPulse-Heart Rate Monitor, heart rate monitor, pedometer, google fit: activity tracker, breath for asthma and copd, move FITT, iBreath-Relax and Breath</td></tr>
<tr><td>TEACHING ORGANIZATION</td><td>
<table>
<tr><th>Activity</th><th>Semester workload</th></tr>
<tr><td>Lectures</td><td>135</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Clinical Training</td><td>90</td></tr>
<tr><td>Total</td><td>225</td></tr>
</table>
</td></tr>
<tr><td colspan="2">EXAMINATION TYPE

The theoretical part of the course (50%) is assessed with:</td></tr>
</table>

• Written final examination (70%) with questionnaires of all material (multiple choice questions, right-wrong questions, fill-in-the-blank and text development)

• Teamwork presentation (30%) The laboratory part is evaluated daily on patient cases to assess the adequacy of the skills acquired by the students (50%).

Table 1. Criteria for students' evaluation in CLINICAL TRAINING I

	Successful performance				**Failure**
Criteria	Excellent 10 - 8.5	Very good 8.4 - 7.5	Good 7.4 - 6.5	Medium 6.4-5	< 5
The degree of consistency of the students in terms of keeping the time and the consistency of completing assignments within the set time limits.					
General image of the students, cooperation, behaviour in relation to fellow students, patients, teachers in the group					
The students' progress in relation to the execution of the assigned tasks					
The development of the student's initiatives and interest during the CLINICAL TRAINING					
Adequate theoretical Knowledge in the relevant filed					
Ability to select and apply measurement and evaluation tools					
Ability to collect, interpret and synthesis of t evaluation results following reasoning					
Design of an individualized physical/rehabilit program					
Delamination and security of the interventio					
Sufficient skills in applying techniques and interventions					

(5) SUGGESTED READING

1. *Γραμματοπούλου Ε. Φυσικοθεραπευτικές Τεχνικές και Μέθοδοι Αξιολόγησης στις Αναπνευστικές Παθήσεις. Αθήνα: Εκδόσεις Κωσταντάρας,2023.*
2. *AACVPR. Κατευθυντήριες οδηγίες για τα προγράμματα Πνευμονικής Αποκατάστασης.Επιμέλεια: Γραμματοπούλου Ε., Σκορδίλης Ε. Αθήνα: Εκδόσεις Πεδίο, 2015.*
3. *Μυριανθεύς Π, Μπαλτόπουλος Γ. Μηχανική υποστήριξη της αναπνοής. Αθήνα: Ιατρικές Εκδόσεις Π. Χ. Πασχαλίδης, 2005.*
4. *Faul Ch, Caestecker S, Nicholson A, Black F. Εγχειρίδιο ανακουφιστικής φροντίδας. Επιμέλεια Γερολουκά Γ, Μπατιστάκη Χ. Εκδόσεις Πασχαλίδης*

5. *Lloyd M, Bor R, Nodle L. Κλινικες Επικοινωνιακές Δεξιοτητες για επαγγελματιες Υγείας. Επιμέλεια: Ε. Καπρέλη. Εκδόσεις Κωνσταντάρας.*
6. *Grammatopoulou E, Charmpas T, Strati E, et al. The scope of physiotherapy services provided in public ICUs in Athens, Greece. Physiotherapy Theory and Practice. 2017; 33: 1-9.*
7. *Bissett B, Leditschke IA, Paratz JD, et al. Respiratory dysfunction in ventilated patients: Can inspiratory muscle training help? Anesth Intensive Care. 2012; 40:236-246.*
8. *Cader SA, Vale RG, Castro JC, et al. Inspiratory muscle training improves maximal inspiratory pressure and may assist weaning in older intubated patients: A randomized trial. J Physiother. 2010; 56:171-177.*
9. *Daniels T. Physiotherapeutic management strategies for the treatment of cystic fibrosis in adults. Journal of Multidisciplinary Healthcare. 2010; 3:201–212.*
10. *Grammatopoulou E, Belimpasaki V, Valalas A, et al. Active Cycle of Breathing Techniques-ACBT contributes to pain reduction in patients with rib fractures. Hellenic Journal of Surgery. 2010; 82:42-47.*
11. *Grammatopoulou E, Haniotou A, Douka G, et al. Factors associated with BMI in Greek adults with asthma. Journal of Asthma. 2010; 47:276-280.*
12. *Mackenzie C, Imle C, Ciesla N. Chest physiotherapy in the intensive care unit. Baltimore, Maryland: Williams & Wilkins, 1989.*
13. *Moodie LH, Reeve JC, Vermeulen N, et al. Inspiratory muscle training to facilitate weaning from mechanical ventilation: Protocol for a systematic review. BMC Research Notes. 2011; 4:283.*
14. *Reeve J. Physiotherapy interventions to prevent postoperative pulmonary complications following lung resection. What is the evidence? What is practice? New Zealand Journal of Physiotherapy. 2008; 36(3):118-130.*
15. *Schweickert A, William D, Kress JP. Implementing Early Mobilization Interventions in Mechanically Ventilated Patients in the ICU Early Mobilization in the ICU. Chest. 2011; 6:1612-1617.*
16. *Stiller K. Physiotherapy in intensive care towards an evidence-based practice. Chest. 2000; 118:1801-1813.*
17. *Stiller K. Safety issues that should be considered when mobilizing critically ill patients. Critical Care Clin. 2007; 23:35-37.*

- Συναφή επιστημονικά περιοδικά:

- ERS journal

-ATS journal

- Chest

- Respiratory Medicine

- Journal of Asthma

- Quality of Life Research

- American Journal of Critical Care Medicine

- American Journal of Critical Care

- American Journal of Critical Care Nursing

- Physiotherapy Theory and Practice

MODULE OUTLINE OF PHYSIOTHERAPY IN ADULT NEUROLOGICAL DISORDERS AND DISEASES

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-5020	**Semester**	5th
Module Title	Physiotherapy in Adult Neurological Disorders and Diseases		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Theory (lectures)	3	**6**
Laboratory (laboratory exercises and clinical training)	2	
Total	5	

Module Type	Specialty Module
Pre-Required Modules	
Teaching and Examination Language	Greek
Suitable for ERASMUS students	YES (English), undertaking an essay
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes
The module PHYSIOTHERAPY IN ADULT NEUROLOGICAL DISORDERS AND DISEASES is a basic course for preparing students for the module CLINICAL PLACEMENT IN NEUROLOGICAL PHYSIOTHERAPY. The module content aims to provide students with the theoretical knowledge and special methods necessary for the physical therapy of adult patients with brain lesion, spinal cord injuries and diseases. Specifically, methods and techniques for resolving problems in adults with neurological diseases, such us disorders of the muscle tone, balance, gait, functioning, chronic fatigue syndrome, and their impact on the patient's quality of life are analyzed. Additionally, the assessment scales for these parameters are mentioned and explained. For each disease, the procedure for examining and evaluating the adult patient's clinical signs and symptoms is analyzed, the data are interpreted and, also, methodology for the planning of ~~an~~ effective intervention and its evidence base are analyzed. After having successfully completed the module PHYSIOTHERAPY IN ADULT NEUROLOGICAL DISORDERS AND DISEASES, students will be able to: • Know the etiology and clinical signs and symptoms of various neurological diseases. • Recognize and manage the common complications that occur in adult patients with neurological diseases. • Describe, interpret through clinical reasoning the appropriate therapeutic interventions and specify the short- and long-term goals of physiotherapeutic intervention in adult patients with neurological disease. • Recognize the causes and mechanisms of traumatic brain injury and spinal cord injury. • Explain therapeutic interventions aimed at facilitating functional movements through clinical reasoning. • Recognize and then apply specific therapeutic interventions depending on the stage of the disease or the functional limitations of individuals with neurological diseases apply them and re-evaluated them. • To be aware of global rehabilitation guidelines of the adult neurological patients. • Describe and apply patient and family training strategies for managing their functional limitations. • To state strategies for improving cognitive disorders • To be able to cooperate with the other health professionals of the rehabilitation team of the neurological patient. • To be able to approach the patient in order to develop a relationship of trust • To act based on the basic principles of ethics and bioethics of the physical therapist profession, with responsibility, conscientiousness, consistency, confidentiality and empathy. • To adopt a patient-centered approach, respecting diversity and interculturality

General Competences
• Analysis and synthesis of data and information • Planning and managing physiotherapeutic interventions • Decision making • Work in an interdisciplinary context • Independent work • Group work

(3)MODULE CONTENT

- **Introduction to Neuroscience of Physiotherapy** (structure and function of neurons, motor control and descending systems, pathways and perception of somatosensation, cognitive function, neuroplasticity).
- **Physiotherapeutic evaluation of the adult patient with neurological disease** (examination, evaluation, interpretation and organization of assessment findings, prognosis and therapeutic plan, design of the most appropriate intervention strategies, progress assessment, recognition of potential need for further evaluation or referral to other health care professionals).
- **Measurement and assessment tools** (reference and analysis of measurement and assessment tools for the following parameters: hypertonia, dystonia , ataxia, balance, gait, chronic fatigue syndrome, functioning).
- **Physiotherapy in Stroke** (clinical findings, therapeutic planning and PT intervention in the hospital, rehabilitation center or at home as well as an outpatient, (**orthoses,** canes, walkers, wheelchairs).
- **Spasticity** (definition, PT evaluation and treatment).
- **Physiotherapy in Parkinson's disease** (pathophysiology, clinical signs and symptoms at each stage of the disease, PT assessment and physiotherapeutic interventions depending on the clinical course of the disease).
- **Physiotherapy in Multiple Sclerosis** (pathophysiology, clinical signs and symptoms, PT evaluation and management, therapeutic strategies depending on the stage of the disease).
- **Physiotherapy in Traumatic Brain Injuries** (classification, incidence, clinical signs and symptoms, PT assessment and management in acute and chronic stages, complications, family training).
- **Physiotherapy in Spinal Cord Injuries** (pathophysiology, CNS classification, clinical signs and symptoms, complications, physiotherapy assessment and management in acute and chronic stages)
- **Physiotherapy in Cerebellar Disorders** (anatomy and physiology of the cerebellum, its clinical manifestations, physiotherapeutic interventions for balance and gait).
- **Physiotherapy in Motor Neuron Disease** (epidemiology, risk factors, clinical signs and symptoms and disease progression, PT assessment and management).
- **Physiotherapy in Dementia** (causes, classification, PT management of patient with dementia, the role of exercise in the prevention of dementia).
- **Assistive Technology in Neurological Physiotherapy** (robotics, litegait**)**

(4)TEACHING AND LEARNING METHODS

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform	
TEACHING ORGANIZATION	**Activity**	**Semester Workload**
	Lectures	150
	Laboratory training and exercise	45
	Educational visits	
	Submission of an individual or team project	
	Total	**195**
STUDENT ASSESSMENT	**The theoretical part of the module** is assessed by final written examination (50%), which may include multiple choice questions, true-or-false questions, gap-filling and essay type questions **The laboratory part** is evaluated with continuous assessment of the students throughout the semester (with practical demonstration of assessment methods, therapeutic intervention planning and demonstration of physiotherapy techniques) (50%)	

(5)SUGGESTED READING

- *Suggested books:*

1. Martin and Kessler. Φυσικοθεραπευτικές Παρεμβάσεις σε Ασθενείς με Νευρολογικές Παθήσεις. Επιμέλεια ελληνικής Έκδοσης: Δάφνη Μπακαλίδου. Αθήνα. Εκδόσεις: Κωνσταντάρας-Ιατρικές εκδόσεις , 2015

2. Deborah S. Nichols-Larsen. Νευρολογική αποκατάσταση. Νευροεπιστήμες και Νευροπλαστικότητα στη Φυσικοθεραπεία. *Επιμέλεια ελληνικής Έκδοσης: Δάφνη Μπακαλίδου. Αθήνα. Εκδόσεις: Κωνσταντάρας-Ιατρικές εκδόσεις , 2017*

3. Barbara S. Giesser. Primer on multiple sclerosis. Oxford, University press, 2016

4. Ian mehrholz. Physical Therapy for the stroke patient. Thieme, 2012

5. Michael P. Barnes and Garth R. Jonson.σύνδρομο ανώτερου κινητικού νευρώνα και σπαστικότητα. Κλινική αντιμετώπιση και νευροφυσιολογία. Επιμέλεια ελληνικής Έκδοσης: Κωνσταντίνος Κατσουλάκης. Εκδόσεις: Επιστημονικές εκδόσεις Παρισιάνου , 2008

6. Αποκατάσταση ασθενή με βλάβη ή κάκωση Νωτιαίου μυελού , Μπάκας τόμος ΙΙ. Αθήνα. Εκδόσεις: Κωνσταντάρας-Ιατρικές εκδόσεις , 2015

- *Suggested Reading:*

7. Bakalidou D, Skordilis E K, Giannopoulos G, Stamboulis E and Voumvourakis K. *Validity and reliability of the FSS in Greek MS patients.* "SpringerPlus" 2013; vol 2 (1):1-8. 2:304. DOI:10.1186/2193-1801-2-304.

8. Bakalidou D, Giannopoulos S, Stamboulis E, Voumvourakis K. *"Effect of seasonal fluctuation of ambient temperature on fatigue in Multiple Sclerosis patients living in Attica, Greece*." Journal of Clinical Neuroscience. 2014; vol 21 (7): 1188-1191.

9. Bakalidou D**,** Voumvourakis K, Zoi Tsourti, Papageorgiou E, Poulios A, Giannopoulos S. *"Validity and reliability of the Greek version of the Modified Fatigue Impact Scale in multiple sclerosis patient"*. "International Journal of Rehabilitation Research". 2014; vol 37 (3): 271-276 DOI: 10.1097/MRR.0000000000000057.

10. **Rasova,** Katarina Vlckova, Davide Cattaneo, Johanna Jonsdottir, Thomas Henze, Ilse Baert, Paul Van Asch, Carme Santoyo, Tori Smedal, Stachowiak Małgorzata, Una Nedeljkovic, Bakalidou Daphne, Jose Alves-Guerreiro, Ylva Nilsagård, Erieta, Nikolikj Dimitrova, Mario Habek, Kadriye Armutlu. *"Physical therapy provision in multiple sclerosis across Europe: a regional lottery?* "Eur J Phys Rehabil Me". 2015;51(6):850-2.

11. Kamila Rasova, Jenny Freeman, Patricia Martinkova, Marketa Pavlikova, Davide Cattaneo, Johanna Jonsdottir, Thomas Henze, Ilse Baert, Paul Van Asch, Carme Santoyo, Tori Smedal, Antonie Giæver Beiske, Małgorzata Stachowiak, Mariusz Kovalewski1, Una Nedeljkovic, Daphne Bakalidou**,** José Manuel Alves Guerreiro, Ylva Nilsagård, Erieta Nikolikj Dimitrova, Mario Habek, Kadriye Armutlu, Cécile Donzé, Elaine Ross, Ana Maria Ilie, Andrej Martić, Anders Peter Feys. *«The organization of physiotherapy for people with multiple sclerosis across Europe: a* multicentre questionnaire survey». "BMC Health Service Research" 2016; 16:552. **DOI:** 10.1186/s12913-016-1750-6

12 Patrícia Martinková, Jenny Freemanb, Adéla Drabinovác, Elena Eroshevad, Davide Cattaneo, Johanna Jonsdottirf, Ilse Baertg, Tori Smedal, Anders Romberg, Peter Feys, Jose Alves-Guerreiro, Mario Habek, Thomas Henze, Carme Santoyo Medina, Antonie Beiske,Paul Van Asch, Daphne Bakalidou, Yeliz Salcı, Erieta Nikolikj Dimitrova, Markéta Pavlíkovát,Kamila Řasová. "*Physiotherapeutic interventions in multiple sclerosis across Europe: Regions and other factors that matter*" "Multiple Sclerosis and Related Disorders". 2018;22:59-67.

13. AGUIAR, L. P. C., DA ROCHA, P. A. & MORRIS, M. 2016. Therapeutic Dancing for Parkinson's Disease. *International Journal of Gerontology,* 10**,** 64-70

14. M. Elpidoforou*, D. Bakalidou *,Maria Drakopoulou, Anna Kayga, Crysa Crysovitsanou L. Stefanis. ***"Effects of a structured dance program in Parkinson's disease. A Greek pilot study"** *"Complementary Therapies in Clinical Practice"*. 2021; 46: 101528

15. Daphne Bakalidou, Georgios Krommydas **,** Triantafyllia Abdimioti, Panagiotis Theodorou, Triantafyllos Doskas, Evaggelos Fillopoulos. «*The dimensionality of the Multidimensional Fatigue Inventory (MFI-20) derived from healthy adults and patients subpopulations: A challenge for clinicians*». **"**CUREUS". 2022; DOI: 10.7759/cureus.26344

16. DUKHU, S., PURCELL, C. & BULLEY, C. 2018. *Person-centred care in the physiotherapeutic management of long-term conditions: A critical review of components, barriers and facilitators*. "*International Practice Development Journal,"* 8.

17. Athanasios Chasiotis**,** Vasileios Giannopapas**,** Marianna Papadopoulou, Maria Chondrogianni, Dimitrios Stasinopoulos, Sotirıos Giannopoulos**,** D. Bakalidou *«The Effect of Neuromuscular Electrical Nerve Stimulation in the Management of Post-Stroke Spasticity: A Scoping Review*». "CUREUS". 2022; DOI: 10.7759/cureus.32001

18. HANSEN, L. S., PRAESTEGAARD, J. & LEHN-CHRISTIANSEN, S. 2021. *Patient-centeredness in Physiotherapy - A literature mapping review. "Physiother Theory Pract"***,** 1-14.

19. Vasileios Giannopapas, PT, Dimitrios Kitsos, MD, Anthi Tsogka, MD, John S Tzartos, MD, Georgios Paraskevas, MD, Georgios Tsivgoulis, MD, Konstantinos Voumvourakis, MD, Sotirios Giannopoulos *, MD, Daphne Bakalidou*, PT PhD. *«Sexual Dysfunction therapeutic approaches in patients with Multiple Sclerosis: A systematic review».* "Journal of Neurological Science", 2022; DOI: 10.1007/s10072-022-06572-0

20. Kamila Řasová , Jenny Freeman , Davide Cattaneo , Johanna Jonsdottir , Ilse Baert , Tori Smedal , Anders Romberg , Peter Feys, Jose Alves-Guerreiro, Mario Habek, Thomas Henze, Carme Santoyo-Medina, Antonie Beiske, Paul Van Asch , Daphne Bakalidou , Yeliz Salcı, Erieta Dimitrova , Markéta Pavlíková , Ivana Štětkářová , Jana Vorlíčková and Patricia Martinková 1 «*Content and Delivery of Physical Therapy in Multiple Sclerosis across Europe: A Survey»* "International Journal of Environmental Research and Public Health". 2020;17, 886; DOI:10.3390/ijerph17030886

21. Vasileios Papatsimpas *, Sotiria Vrouva, Marianna Papadopoulou, George Papathanasiou, Daphne Bakalidou**. "***The effects of aerobic and resistance exercise on the cognitive and Physical function of persons with mild dementia. A Randomized Controlled Trial protocol*."Healthcare journal", 2023; 11,677. DOI: https://doi.org/10.3390/healthcare11050677.

22. Daphne Bakalidou , Vasileios Giannopapas, Sotirios Giannopoulos. "*Thoughts on Fatigue in Multiple Sclerosis Patients*." CUREUS. 2023; DOI: 10.7759/cureus.42146

23. Vasileios Giannopapas, Dimitrios Kitsos, Athanasia Panopoulou, Zafiroula Mitsi, Konstantina Stavrogianni, AthanasiosChasiotis, Marinela Gkika , Stravoula Salakou, , Georgios Tsivgoulis, Daphne Bakalidou, Sotirios Giannopoulos. "*Interactions between fatigue and urinary quality of life in patients with Multiple Sclerosis".*" Journal of Clinical Neuroscience", 2024; 120(87-91).

24. Jonggeol Jeffrey Kim, Dan Vitale, Diego Véliz Otani, Michelle Mulan Lian, Karl Heilbron, Hirotaka Iwaki, Caroline Warly Solsberg, Hampton Leonard, Mary B. Makarious, Eng-King Tan, Andrew B. Singleton, Sara Bandres-Ciga, Alastair J. Noyce, Cornelis Blauwendraat, Mike A. Nalls, Jia Nee Foo, Ignacio Mata." Multi-ancestry genome-wide association meta-analysis of Parkinson's disease" Nature Genetics, 2024: 56(27-36)

25. Mark P McGlinchey, Lizz Paley, Alex Hoffman, Abdel Douiri, Anthony G Rudd. Physiotherapy provision to hospitalised stroke patients: Analysis from the UK Sentinel Stroke National Audit Programme. ***European Stroke*** journal, 2019, Doi https://doi.org/10.1177/2396987318800543

26.B.Noutbakhsh, N. revirajan, B. Morris, C. Cordano, J.Creasman, M.Manguianao, K. Krysko, A.Rutatanga, C.Auvray, S.Aliarallach, C.Jin, E.Mowry, C.McCulloch, E.Waubant. *Safety and efficacy of amantadine, modafinil and methylphenidate for fatigue in multiple Sclerosis: a randomized, placebo-controlled, crossover double-blind trial. "Lancet Neuol", 2020. Doi.org/10.1016/S1474-4422(20)30354-9.*

- *Related scientific journals:*
  - *Brain and behavior*
  - *Multiple sclerosis*
  - Multiple sclerosis and related diseases
  - *International Journal of Rehabilitation Research*
  - *Journal of Clinical Neuroscience*
  - European Journal of Physical and Rehabilitation Medicine
  - BMC Health Services Research
  - Disability and Rehabilitation
  - Neurorehabilitation
  - Acta Scandinavica

MODULE OUTLINE OF 'MSK DISORDERS

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-5030	**Semester**	**5th**
Module Title	PHYSIOTHERAPY IN MUSCULOSKELETAL DISORDERS		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
THEORY: Interactive Lectures - practice	3	
LABORATORY: Laboratory exercises	2	
Total	5	5

Module Type	Special Core Module
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	Yes
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes

The aim of the course is to study and understand the physiotherapeutic assessment and physiotherapeutic treatment of musculoskeletal disorders, as defined according to the latest classification of the World Health Organization (ICD-11). The course aims at the twofold aim of the student to develop the ability to evaluate musculoskeletal disease, recording the findings and designing/implementing the appropriate physiotherapy treatment.
Musculoskeletal Physiotherapy in Diseases will include choices of therapeutic means and tools depending on the goal set during the Physiotherapy Assessment and mainly the principles of Evidence-based practice and may include:
The goal remains the holistic, documented design of an individualized physiotherapy protocol designed for the deficits resulting from the patient's assessment.

After completing the module, students:

- will acquire the ability to systematically complete the assessment of the patient with musculoskeletal/rheumatic pathology
- will have the ability to understand subjective and objective findings, to reproduce them using the clinical trials that are most appropriate both theoretically and clinically/practically.
- will be able to understand and record the physiotherapy assessment, and define the short and long term goals of physiotherapeutic intervention in musculoskeletal/rheumatic pathologies.
- will be able to organize and develop a documented physiotherapy protocol, as well as the ability to explain goals to the patient through effective communication.
- will be able to design and choose the most appropriate approach for each patient, but also to re-evaluate it by understanding the needs (work, social, family), modifying and adapting their interventions.
- will be able to apply the methods and techniques they choose for each musculoskeletal / rheumatic pathology, with safety, effectiveness and dignity of the patient and their own.
- will understand and recognise the expected evolution of an intervention, and revise their approach if necessary.
- will be able to use tools (questionnaires, scales, machines, etc.) to record subjective and objective findings, while they will be able to identify any weaknesses of either the examination or treatment, and they will be able to proceed to the development of other more appropriate tools.
- will act on the basis of the basic principles of ethics and bioethics of the physiotherapist profession, with responsibility, conscientiousness, consistency, confidentiality and empathy.
- will adopt a patient-centred approach, respecting diversity and interculturality, in line with principles of active citizenship.

- will have acquired a positive attitude towards the "green" physiotherapy physiotherapy in musculoskeletal disorders, which uses interventions mostly with hands on, contributing to the reduction of the environmental footprint by adapting interventions to the natural environment and adopting physical activity.
- will be sensitive to environmental protection issues, such as reducing the environmental footprint, in order to be able to help European citizens stay healthy and properly prepared to face the effects of climate change by adopting healthy behaviors (wellness).

General Competences
(6) Data Collection and Analysis (7) Synthesis of information, design of intervention plan and decision making (8) Autonomous work. (9) Teamwork. (10)Working in an interdisciplinary environment. (11)Respect for diversity and multiculturalism (12)Demonstration of social, professional and ethical responsibility and sensitivity to issues of medical confidentiality, special populations (13)Observation and production of new techniques (14)Production of new research ideas.

(3) MODULE CONTENT

Theoretical Part

Section 1: **Introductory concepts in physiotherapeutic assessment and treatment of musculoskeletal disorders.** Definitions, classification, distinction of common and non-common characteristics, description of the sections of musculoskeletal disorders. Epidemiological data, predisposing and aggravating factors, prognosis, prevention.

Section 2: **Myofascial syndrome** – detailed description of the phenomenon. Principles of assessment and physiotherapeutic rehabilitation based on Evidence-Based Intervention.

Section 3rd-4th-5th: **Soft tissue diseases** (capsulitis, bursitis, tenosynovitis, tenosynovitis, periarthitis, enthesopathies, instabilities, algodystrophies, etc.). Typical examples of musculoskeletal disorders for **the upper extremity, lower limb, arm & leg**. This includes pathologies such as: symphonic bursitis, bursitis, rotator cuff syndrome, subacromial friction syndrome,

calcifying tendonitis, bursitis, enthesopathies, arthritis, internal and external epicondylitis, tenosynovitis, tendinopathy, fasciitis, algodystrophies, etc.). Detailed discussion of their physiotherapeutic assessment and rehabilitation.

Section 6: **Diseases of the Peripheral Nervous System**. Peripheral nerve entrapment syndromes in the upper and lower extremities: Pathomechanics and mechanisms of induction, clinical picture, basic principles and progress of PV rehabilitation of the most important peripheral nerve entrapment syndromes.

Section 7th-8th-9th: **Musculoskeletal & Rheumatic Diseases and Deformities of the Spine** (cervical – thoracic – lumbar). Detailed recording of the most important parameters concerning the Physiotherapeutic evaluation and Rehabilitation of Diseases and Deformities of the SS in children and adults, after conservative or surgical treatment. General principles, classification, pathophysiological mechanisms, clinical picture, physiotherapeutic evaluation-clinical reasoning, treatment and rehabilitation phases, relapse prevention-prevention instructions. Examples of AC diseases and deformities (Neck pain, Whiplash injuries, Temporomandibular joint diseases, Thoracic Outlet Syndrome, T4 syndrome, Back pain, Sciatica, Scoliosis, Lordosis, Kyphosis, Flat back, torticollis, Spondylolysis, Spondylolisthesis, Microdiscectomies, Spinal fusions, Arthropathies, Arthritis, etc.). Detailed discussion of their physiotherapeutic assessment and physiotherapeutic rehabilitation, based on the principles, methods.

Section 10th-11th-12th: **Musculoskeletal & Rheumatic Diseases and Deformities of the limbs** (foot, knee, hip, hand, elbow, shoulder). Detailed recording of the most important parameters concerning the Physiotherapeutic evaluation and Rehabilitation of Upper and Lower Limb Diseases and Deformities in children and adults, after conservative or surgical treatment. Detailed discussion of their physiotherapeutic evaluation and physiotherapeutic rehabilitation, based on principles, methods and techniques.

Section 13: **Rheumatic Diseases – Fibromyalgia**. Mechanisms, clinical picture, findings, prognosis, treatment. Detailed discussion of physiotherapy assessment and rehabilitation.

aboratory Part

1. Introductory concepts. Evaluation of a patient with musculoskeletal disease. History taking, recording of data in accordance with international standards. Practical application of evaluation and treatment methods and techniques.
2. Principles of Physiotherapeutic Evaluation and Physiotherapy of *Muscle Tissue – Fascia*: Physiotherapeutic intervention techniques based on evidence-based practice.
3. Principles of Physiotherapeutic Evaluation and Physiotherapeutic treatment of *connective tissue* (in chronic problems) – *capsule / bursae*. Physiotherapy intervention techniques based on evidence-based practice.
4. Principles of Physiotherapeutic assessment and Physiotherapy treatment of *connective tissue* (in chronic problems) – *Links*. Physiotherapeutic intervention techniques based on evidence-based practice.

5. Principles of physiotherapeutic evaluation and physiotherapy treatment of *connective tissue* (in chronic problems) – *Tendons*. Techniques of physiotherapeutic intervention based on evidence-based practice.

- Αρχές Φυσικοθεραπευτικής αξιολόγησης και Φυσικοθεραπευτικής αντιμετώπισης του *Νευρικού ιστού (κινητοποίηση του περιφερικού νευρικού ιστού)* (σε χρόνια προβλήματα). Τεχνικές φυσικοθεραπευτικής παρέμβασης βάσει της τεκμηριωμένης πρακτικής.
- Principles of physiotherapy assessment and treatment in *spinal deformities*: Kyphosis – Lordosis, Flat back, Relaxed position. Techniques of physiotherapeutic intervention based on evidence-based practice.
- Principles of Physiotherapeutic Evaluation and Physiotherapy Treatment in *Spinal Deformities*: Scoliosis – Toricollis. Techniques of physiotherapeutic intervention based on evidence-based practice.
- Practical application of the concepts Physiotherapeutic evaluation and physiotherapy treatment in musculoskeletal *disorders in the knee area*. Practice a typical example *of knee osteoarthritis* . Techniques of physiotherapeutic intervention based on evidence-based practice.
- Practical application of the concepts of Physiotherapeutic assessment and Physiotherapy treatment in musculoskeletal disorders *in the lumbar spine area.* Practical training in a typical example of low back pain / sciatica of myofascial etiology with or without radiculopathy. Physiotherapeutic intervention techniques based on evidence-based practice.
- Practical application of the concepts of Physiotherapeutic assessment and Physiotherapy treatment in musculoskeletal disorders *in the cervical spine area.* Practical training in a typical example of neck pain/pain irradiated in the Upper Extremity. Physiotherapeutic intervention techniques based on evidence-based practice.
- Practical application of the concepts of Physiotherapeutic evaluation and Physiotherapy treatment in musculoskeletal disorders *in the lower extremity area.* Practical training in a typical example *of trochanteritis and rheumatoid arthritis in the hip*. Physiotherapeutic intervention techniques based on evidence-based practice.
- Practical application of the concepts of Physiotherapeutic assessment and Physiotherapy treatment in musculoskeletal disorders *in the areas of the foot and hand.* Practice in a typical example of plantar fasciitis and DeQuervain tenosynovitis. Physiotherapy intervention techniques based on evidence-based practice.

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery	Face to Face
Use of Information and Communication Technology (ICT)	Use of information and communication technologies. Communication with students (e-class) Lectures-presentations using a whiteboard, transphanescent, overhead projector, video and television Class discussion and feedback Work in small groups or individually Student presentations, Exercise of students with case studies of clinical cases aiming at the comprehensive assessment and

	physiotherapeutic intervention in disorders of the musculoskeletal system.
Teaching Organization	**Activity** / **Semester Workload** Lectures: 150 Workshop: 45 : Total: **195**
Student Assessment	**Theoretical part:** 1. Written final exam. **Laboratory part:** 1. Continuous evaluation of students in laboratory exercises, as well as in their weekly performance and participation in the teaching of the course Final oral examination

(5) SUGGESTED READING

1. *Lovell B., Lander M., Murch N. Κλινικές Δεξιότητες – Διάγνωση και αιτιολόγηση, Εκδότης Broken Hill Publishers LTD, 2024.*
2. *Hecker H-U., Steveling A., Peuker E., Liebchen K. Άτλας σημείων Βελονισμού και πυροδότησης Μυοπεριτονιακού Πόνου. Επιμέλεια Ελληνικής έκδοσης: Γ. Γεωργούδης, Κωνσταντάρας Ιατρικές Εκδόσεις, 2023*
3. *Hoogenboom B., Voigt M.I., Prentice W.E. Φυσικοθεραπευτικές Παρεμβάσεις στο Μυοσκελετικό Σύστημα, Fourth Edition 4th Edition, Ελληνική Έκδοση Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
4. *Παναγόπουλος Α. Κλινικές Δοκιμασίες Του Μυοσκελετικού Συστήματος Στην Ορθοπαιδική. Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
5. *Miller M., Hart JA. Review Ορθοπαιδικής Κωνσταντάρας Ιατρικές Εκδόσεις, 2010*
6. *Ευσταθόπουλος Ν. Αρθρίτιδες: Διάγνωση και θεραπεία. Κωνσταντάρας Ιατρικές Εκδόσεις, 2010*
7. *Staheli LT. Παιδοορθοπαιδική. Κωνσταντάρας Ιατρικές Εκδόσεις, 2007*
8. *Goodman CC, Snyder TEK. Differential Diagnosis for Physical Therapists: Screening for Referral, Saunders. 2012*
9. *Kellogg CC. Heick J., Lazaro RT. Differential Diagnosis for Physical Therapists 6th Edition, Elsevier, 2017*
10. *Melzack R & Wall P. Textbook of pain. 6th edition. London Saunders, 2013.*
11. *Hoppenfeld S: Ορθοπεδική Νευρολογία. Αθήνα: Μαρία Γρ. Παρισιάνου, 2000.*
12. *Kisner C, Colby L. Therapeutic Exercise: Foundations and Techniques. 6th edition. Philadelphia, Published by Davis Plus, 2012.*
13. *Butler DS. Explain Pain Supercharged Spiral-bound. NOI Group, 2017*
14. *Musolino GM. Κλινικός συλλογισμός και λήψη αποφάσεων στη φυσικοθεραπεία, Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
15. *Petty NJ., Ryder D., Lewis J. Μυοσκελετικό Σύστημα-Κλινική Εξέταση, Αξιολόγηση, Θεραπεία, Διαχείριση. Εκδότης Broken Hill Publishers LTD, 2022*
16. *Brotzman B., Manske R. Ορθοπεδική αποκατάσταση στην κλινική πράξη. Κωνσταντάρας Ιατρικές Εκδόσεις, 2015*

MODULE OUTLINE OF MOBILIZATION OF NEUROMUSCULOSKELETAL STRUCTURES

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-5040	**Semester**	**5th**
Module Title	**Mobilization of Neuromusculoskeletal Structures**		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
THEORY: Interactive Lectures	3	6
LABORATORY: Laboratory exercises	2	
Total	5	

Module Type	Special Core Module
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	Yes (English)
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes

This module provides students with the opportunity to learn a wide range of modern manual therapy techniques applied to both all joints of the body and neural structures. They are given the opportunity to integrate learning into their own clinical practice and develop clinical reasoning skills, understand the principles of patient assessment and management, including contraindications and indications, as well as the integration of pain science. Students will also be able to analyse the different approaches to manual therapy, evaluate existing approaches to manual therapy using current literature and develop communication and clinical reasoning skills that can allow more effective management of patients with neuromusculoskeletal disorders.

Students after successful completion of the course:

- will know and apply the Personal Protection Measures both in terms of hygiene and ergonomics
- will have understood the normal and pathological intra-articular movement of all joints of the human body as well as the physiological and pathological mobility of the nervous tissue

- will have acquired the basic skills in the examination and differential diagnosis of the tissues responsible for the dysfunction of a joint
- will be able to collect and interpret the results of the examination, as well as decide on the application of the most appropriate technique to repair joint dysfunction through clinical reasoning and research documentation
- will have acquired proficiency in the skills/techniques of mobilization of all joints of the human body, as well as mobilization of peripheral nerves
- will have acquired the ability to manage hypermobile joints
- will act on the basis of the basic principles of ethics and bioethics of the physiotherapy profession, with responsibility, conscientiousness, consistency, confidentiality and empathy
- Will adopt a patient-centred approach, respecting diversity and interculturality.

  Will be sensitive to environmental protection issues, such as reducing the environmental footprint, to be able to help European citizens stay healthy and properly prepared to face the effects of climate change by adopting healthy behaviours.

General Competences

- Analysis and synthesis of data and information
- Decision making
- Design and management of physiotherapeutic interventions

(3) MODULE CONTENT

- Personal Protection Measures – Patient/physiotherapist safety
- History of mobilization techniques of joints, muscles and peripheral nerves
- Physiotherapeutic evaluation according to the International Federation of Orthopaedic Manipulative Physical Therapists (individual anamnesis, physical examination, clinical reasoning, trial therapy).
- Examination of functional movements of the joints and differential diagnosis of the structures responsible for dysfunction (muscles, bones, joint capsule/ligaments, nerve tissue) as well as training in the principles of progressivity of mobilizations. Laboratory exercises.
- Basic principles of examination and mobilization of joints.
- Examination of physiological and accessory movements and techniques of mobilization of upper and lower limb joints, introduction to the concept of mobilization with movement with the simultaneous use of a belt, reference and demonstration of the different philosophies of manual mobilizations. Laboratory exercises.
- Examination of physiological and accessory movements and techniques of mobilization of the joints of the spine. Laboratory exercises.
- Neural tissue: Clinical features, biomechanics (spinal cord and peripheral nerves), palpation, neurodynamic tests (peripheral nerves) and neural tissue mobilization techniques. Laboratory exercises.
- Basic principles of rehabilitation of neuromuscular dysfunction of the spine. Laboratory exercises.

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery	Face to Face	
Use of Information and Communication Technology (ICT)	Open e-class platform	
Teaching Organization	**Activity**	**Semester Workload**
	Lectures	150
	Workshop	45
	Total	**195**

Student Assessment	The theoretical part of the course is evaluated by a written final exam that includes the administration of questionnaires of the entire material (multiple choice, true-false questions, filling in gaps and text development) The laboratory part is evaluated by: • Continuous evaluation of students throughout the semester to assess the adequacy of the skills taught • Final examination of all the material taught

(5)SUGGESTED READING

Suggested Reading:

- *ShomacherJ. Ειδικές τεχνικές κινητοποίησης στο μυοσκελετικό σύστημα. Αθήνα: Εκδόσεις Κωνσταντάρα, 2014.*
- *Cook CE. Φυσικοθεραπεία μία τεκμηριωμένη προσέγγιση. Αθήνα: Εκδόσεις Λαγού, 2014*
- *Fernandez-de-las-Penas C, Cleland JA, Dommerholt J. Manual therapy for musculoskeletal pain syndrome. London: Elsevier 2017.*
- *Μυοσκελετικό Σύστημα-Κλινική Εξέταση, Αξιολόγηση, Θεραπεία, Διαχείριση, Petty Nicola J., Ryder Dionne, Lewis Jeremy BROKEN HILL PUBLISHERS LTD 2022*
- *Lewit K. Manipulative therapy: Musculoskeletal medicine. London: Elsevier 2009.*
- *Shacklock M. Clinical Neurodynamics. London: Elsevier 2005.*
- *Vleeming A,Mooney V,Dorman T,Snijders C,Stoecart R. Movement, stability and low back pain. London: Churchill Livingstone 1997.*
- *Jones, M. and Rivett, D. (2005) Clinical Reasoning for Manual Therapists. Edinburgh: Elsevier.*
- *Atkinson, K., Coutts, F. and Hassenkamp, A-M. (2005) Physiotherapy in Orthopaedics: A problem solving approach. 2nd edn. Edinburgh: Churchill Livingstone.*
- *Banks, K. and Hengeveld, E. (2009) Maitland's Clinical Companion: An Essential Guide for Students. Edinburgh: Churchill Livingstone Elsevier.*
- *Bogduk, N. (2005) Clinical Anatomy of the Lumbar Spine and Sacrum. 4th edn. Edingburgh: Churchill Livingstone.*
- *Boyling, J. and Palastanga, N. (1998) Grieve's Modern manual Therapy. 2nd edn. Edinburgh: Churchill Livingstone.*
- *Butler, D.S. (2006) The Sensitive Nervous System. Sydney: NOI Publications.*
- *Dandy, D. (2003) Essential Orthopaedics and Trauma, 4th edn. Edinburgh: Churchill Livingstone.*
- *Hertling, D. and Kessler, R.M. (2006) Management of Common Musculoskeletal Disorders. Physical Therapy Principles and Methods. 4 edn. Philadelphia: Lippincott, Williams & Wilkins.*
- *Kendall, F.P., McCreary, E.K. and Provance, P.G. (2005) Muscles: Testing and Function. 5th edn. Baltimore: Williams & Wilkins.*
- *Levangie P.K. and Norkin, C.C. (2005) Joint Structure and Function; A Comprehensive Analysis. 4rd edn. Philadelphia: Davis & Co.*
- *Magee, D.J. (2008) Orthopaedic Physical Assessment. 5th edn. London: WB Saunders Co. Ltd.*
- *Maitland, G.D. (2005) Vertebral manipulation. 7th edn. London: Butterworth Heinemann.*
- *Palastanga, N., Field, D. and Soames, R. (2011) Anatomy and Human Movement. Structure and Function. 6th edn. Edinburgh: Elsevier.*
- *Pears, R. and Shields, G. (2010) Cite them right. The essential referencing guide. 8th edn. Basingstoke: Palgrave Macmillan.*
- *Petty, N.J. (2011) Principles of Neuromusculoskeletal Treatment and Management. A guide for Therapists. 2nd edn. Edinburgh: Churchill Livingstone.*
- *Petty, N.J. (2013) Neuromusculoskeletal Examination and Assessment. A handbook for Therapists. 4th edn. Edinburgh: Churchill Livingstone.*
- *Shacklock, M. (2005) Clinical Neurodynamics. A new system of musculoskeletal treatment. Edinburgh: Elsevier.*
- *Richardson, C., Hodges, P. and Hides, J. (2004) Therapeutic Exercise for Lumbopelvic Stabilization. A motor control approach for the treatment and prevention of low back pain. 2nd edn. Edinburgh: Churchill Livingstone.*
- *Wadell, G. (2004) The Back Pain Revolution. 2nd edn. Edinburgh: Churchill Livingstone.*

Relevant Scientific Journals:

Manual Therapy

Journal of Manual and Manipulative Therapy

Journal of Manipulative and Physiological Therapeutics

6th SEMESTER

s/n	MANDATORY			LECTURE		WORKSHOP		TOTAL		SEMESTER WORKLOAD	ECTS
	MODULES			HOURS	WORKLOAD	HOURS	WORKLOAD	HOURS	WORKLOAD		
	MANDATORY MODULES	CATEGORY	CODE								
1	CLINICAL TRAINING II	SM	П2-6010	3	120	12	180	15	300	300	10
2	PHYSIOTHERAPY IN PAEDIATRIC NEUROLOGICAL DISORDERS AND DISEASES	SM	П2-6020	3	150	2	45	5	195	195	6
3	ERGONOMICS AND CONSULTANCY IN PHYSIOTHERAPY	SM	П2-6030	3	90	2	45	5	135	135	5
4	SPORTS PHYSIOTHERAPY	SM	П2-6040	3	135	2	45	5	180	180	6
5	ELECTIVE MODULE GROUP B	E	П2-ЕВ*	3	90	-	-	3	90	90	3
TOTAL				**15**	**585**	**18**	**315**	**33**	**900**	**900**	**30**

П2-ЕВ* : the code of the elective course declared by the student from GROUP B (П2-ЕВ10, П2-ЕВ20, П2-ЕВ30 or П2-ЕВ-40)

MODULE DESCRIPTION OF CLINICAL TRAINING II

(1) GENERAL

FACULTY	Health and Care Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	П2-6010	**Semester**	6th
Module Title	Clinical Training II		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
THEORY: INTERACTIVE LECTURES	3	10
LABORATORY: CLINICAL TRAINING	12	
Total	15	

COURSE TYPE	Specialty
PREREQUISITES:	
LANGUAGE OF INSTRUCTION AND EXAMINATIONS:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes (English)
WEBPAGE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes

The main aim of the module is to educate students on the clinical physiotherapeutic rehabilitation of patients after surgical management of musculoskeletal injuries and disorders. The students are also trained in the rehabilitation of outpatients with musculoskeletal injuries and disorders. During the educational process, special emphasis is given to the preoperative and postoperative assessment of the patients, to attending surgeries, to students' practicing in the physiotherapy department of the hospital, and to enhancing cooperation with the doctors and nursing staff of the hospital where the students are assigned. The goal of the module is students' training in the design of a rehabilitation program during patients' hospitalization and the maximal or partial protection of the operated limb or body region.

On completion of the module the student will:

- know and apply the Personal Protection Measures both in terms of hygiene and ergonomics
- act based on the basic principles of ethics and bioethics of the physiotherapy profession, with responsibility, conscientiousness, consistency, confidentiality and empathy.
- Be able to demonstrate awareness of what members of the multidisciplinary healthcare team do, be able to communicate and work effectively in a professional manner with them, when appropriate, with regards to the patient assessment and treatment, adhering to relevant practice standards and ethical conduct.
- Demonstrate the ability to search, retrieve and appraise the literature and evidence base for therapeutic massage techniques. Be able to integrate current literature into physiotherapy practice.
- Demonstrate professional practice and behaviour within the scope of the module including communicating and appropriately interpreting communications with the patient, and at all times recognising cultural and linguistic diversity
- Have obtained the competence to manage post-operative rehabilitation of patients' musculoskeletal disorders and/or injuries
- Be able to design and implement the basic principles of physiotherapy intervention in outpatients
- Be able to understand, select and implement clinical reasoning skills for the assessment of musculoskeletal injuries and/or disorders
- operated patients in cooperation with the patient and family, having obtained informed consent.
- Be competent to acknowledge and determine the mechanisms of injury and/or pathology of musculoskeletal disorders that may lead patients to orthopedic surgery
- Be able to collect, interpret and synthesize historical findings of patients with musculoskeletal injuries and/ or disorders after potential surgery management and design a patient-centered physiotherapeutic intervention
- Be able to determine short- and long-term patient goals of conservative physiotherapy pre-operatively or post-operatively
- Be competent to implement physiotherapy principles and work with safety and effectiveness in the early post-operative period
- Be able to cooperate with other health professionals and
- Be able to educate patients' family relatively to his/her management
- Adopt a patient-centred approach, respecting diversity and interculturality.
- Be sensitive to environmental protection issues, such as reducing the environmental footprint, to

be able to help European citizens stay healthy and properly prepared to face the effects of climate change by adopting healthy behaviours.

General student skills

- Analysis and synthesis of data and information
- Decision making
- Design and management of physiotherapy interventions in outpatients or patients post-operatively
- Autonomous practice
- Teamwork
- Work within an interdisciplinary team environment
- Adaptation in new settings
- Design physiotherapeutic assessment
- Production of new research questions

(3) MODULE CONTENT

Theoretical Content

- Preoperative assessment and training of patient. General principles of planning a physiotherapy rehabilitation programme during the early postoperative period.
- Physiotherapeutic intervention for postoperative complications in the operative treatment of musculoskeletal injuries and disorders. The contribution of physical agents to the treatment of early symptoms in the operated orthopaedic patient.
- Physiotherapeutic rehabilitation after hip arthroplasty: Indications – contraindications. Surgical techniques. Elements of diagnostic imaging.
- Physiotherapeutic rehabilitation after hip arthroplasty: Planning the rehabilitation programme.
- Physiotherapeutic rehabilitation after surgical treatment of musculoskeletal injuries of the pelvis, hip and femur. Acetabulum fractures, fractures of the proximal end of the femur and the femoral shaft. Surgical techniques, elements of diagnostic imaging. Notes for the planning of the physiotherapy rehabilitation programme.
- Physiotherapeutic rehabilitation after knee arthroplasty. Indications – contraindications. Surgical techniques. Elements of diagnostic imaging.
- Physiotherapeutic rehabilitation after knee arthroplasty: Planning the rehabilitation programme.
- Physiotherapeutic rehabilitation after surgical treatment of musculoskeletal injuries in the knee, Lower limb and foot region. Surgical techniques, elements of diagnostic imaging. Notes for the planning of the physiotherapy rehabilitation programme.
- Physiotherapeutic rehabilitation after shoulder arthroplasty. Indications – contraindications. Surgical techniques. Elements of diagnostic imaging.
- Physiotherapeutic rehabilitation after shoulder arthroplasty: Planning the rehabilitation programme.
- Physiotherapeutic rehabilitation after the surgical treatment of musculoskeletal injuries in the shoulder girdle and humerus region. Surgical techniques, elements of diagnostic imaging. Notes for the planning of the physiotherapy rehabilitation programme.
- Physiotherapeutic rehabilitation after the surgical treatment of musculoskeletal injuries in the forearm and hand region. Surgical techniques, elements of diagnostic imaging. Notes for the planning the physiotherapy rehabilitation programme.
- Physiotherapeutic rehabilitation after the surgical treatment of musculoskeletal injuries in the spine. Surgical techniques, elements of diagnostic imaging. Notes for the planning of the physiotherapy rehabilitation programme.
- Physiotherapeutic rehabilitation after chondral lesions
- Physiotherapeutic intervention after osteoporotic fractures of the spine

- Physiotherapeutic intervention after spinal surgeries (i.e. kyphoplasty, discectomy, laminectomy,
- spinal stenosis, spinal fusion)
- Personal Protection Measures – Patient/physiotherapist safety
- Physiotherapeutic evaluation, interpretation and design of treatment plan

Clinical Training

The clinical part of the lecture takes place in public hospitals with rotation of small groups of students in outpatient orthopaedic clinics, operating theatres, orthopaedic clinics and in the hospital's physiotherapy department. The assessment and planning of individualised intervention, as well as the implementation of physiotherapy rehabilitation, is performed exclusively by the teaching staff. The student with the patient's consent, work clinically under the supervision of their Lecturers. In detail it includes:

- Introduction to Clinical Training: Briefing, communication with the members of the clinical physiothera rehabilitation group of the hospital. The role and contribution of the physiotherapist in the rehabilitat group.
- Medical history and assessment of patients with musculoskeletal problems. Pain assessment scales. Organisation of the physiotherapeutic rehabilitation. Clinical case studies
- Clinical reasoning and problem solving in the physiotherapeutic rehabilitation of musculoskeletal problems. Clinical examples.
- Gait retraining and use of walking aids in physiotherapeutic rehabilitation. Clinical examples.
- Physiotherapeutic rehabilitation in upper and lower extremity injuries: Surgical technique, limitations, assessment and planning of therapy, clinical applications.
- Physiotherapeutic rehabilitation in spine injuries: Surgical technique, limitations, assessment and plan of therapy, clinical applications.
- Visiting the operating theatre. Attending the surgical treatment of orthopaedic patients.
- Visiting outpatient clinics. The students participate in the clinical examination of patients with musculoskeletal injuries or disorders. Briefing by the multidisciplinary team. Practice in physiotherapy counselling.
- Physiotherapeutic rehabilitation after knee arthroplasty. Surgical technique, medical history, diagnostic imaging and clinical assessment, physiotherapy assessment, goals of physiotherapeutic rehabilitation, planning of therapeutic physiotherapy programme, clinical applications.
- Physiotherapeutic rehabilitation after hip arthroplasty. Surgical technique, medical history, diagnostic imaging and clinical assessment, physiotherapy assessment, goals of physiotherapeutic rehabilitation, planning of therapeutic physiotherapy programme, clinical applications.
- Physiotherapeutic rehabilitation after shoulder arthroplasty. Surgical technique, medical history, diagnostic imaging and clinical assessment, physiotherapy assessment, goals of physiotherapeutic rehabilitation, planning of therapeutic physiotherapy programme, clinical applications.
- Removal of fixation material of fractures and revision of total arthroplasties. Surgical technique, medical history, diagnostic imaging and clinical assessment, physiotherapy assessment, goals of physiotherapeutic rehabilitation, limitations and planning of therapeutic physiotherapy programme, clinical applications.
- The students practise in the physiotherapy department of the hospital. Physiotherapy assessment and planning of physiotherapeutic rehabilitation of patients with chronic musculoskeletal problems and disorders, such as soft tissue injuries and problems, osteoarthritis, rheumatoid diseases.
- Continuous assessment of students during the entire semester in clinical practical exercises and final assessment in clinical cases. The student assessment includes oral presentations of physiotherapeutic treatment of clinical musculoskeletal problems.
- Presentation of complex case studies, like multitrauma patients, amputations, peripheral nerve

injuries, other clinical health problems of the orthopaedic patient. Physiotherapy assessment and plan of physiotherapeutic rehabilitation. Clinical applications.

- Practice in paedo-orthopaedic clinic and in sport injuries clinic.

(4) **TEACHING AND LEARNING METHODS - ASSESSMENT**

METHOD OF DELIVERY	Face to face
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of ICT and Communication with students (e-class) Use of oximeter -track oxygen, inPulse-Heart Rate Monitor, heart rate monitor, pedometer, smartphone gionometer apps, digital scoliometers Use of interactive communication platforms (MsTeams)
TEACHING ORGANIZATION	

Activity	***Semester Workload***
• Lectures and presentations. • Use of e-class for the uploading and circulation of scientific articles, instructions, lectures, useful links, questionnaires, information related to the course conferences, etc. • Guest speakers approved by the Physiotherapy Department.	120
CLINICAL TRAINING • Briefing of the students by the doctors on issues of clinical and imaging assessment and rehabilitation (surgical or conservative) of musculoskeletal injuries and disorders. • Application of physiotherapy assessment and planning of physiotherapeutic rehabilitation in clinical cases.	180
Total	300

STUDENT ASSESSMENT	• The theoretical part of the course is evaluated by a written final exam (70%) that includes the administration of questionnaires of the entire material (multiple choice, true-false questions, filling in gaps and text development) • Teamwork assignment and presentation (30%) ** The final total mark is dependent 50% on the performance on the theoretical assessment and 50% on the performane on the clinical part of the module The laboratory part is evaluated by:

Table 1. Student assessment criteria on Clinical Training II

	Successful Performance				Fail
Criteria	Excellent 10 - 8.5	Very Good 8.4 - 7.5	Good 7.4 - 6.5	Adequate 6.4-5	< 5
The level of the students' diligence on being punctual on the timetable of the module as well as delivering projects within the determined time limits.					
General image of the student in cooperation and behavior with colleague students, teamwork, patients, Teaching staff, health care professionals					
Student's progress on delivering the required assignments					
Developing initiatives and expressing interest during Clinical Training					
Competence in the theoretical field of knowledge.					
Ability to select and implement outcome measures (questionnaires, scales, assessment forms, clinical tests)					
Clinical reasoning, ability to collect, interpret and synthesize historical findings					
Design of personalized physiotherapeutic intervention					
Safety of intervention					
Competence in implemented physiotherapeutic methods, techniques and clinical skills					

	• Continuous evaluation of students throughout the semester to assess the adequacy of the skills taught • Final clinical examination of all the material taught Competence on the taught skills developed and knowledge acquired evaluated daily (see Table 1.)

(5) SUGGESTED READING

Suggested Reading:

Brotzman SB, Manske RC. Clinical Orthopaedic Rehabilitation. An Evidence-Based Approach. 3rd Edition. Philadelphia, PA: Mosby, 2011.
Brotzman SB, Wilk KE. Handbook of Orthopaedic Rehabilitation. 2nd Edition. Philadelphia, PA: Mosby, 2007.
Canale ST, Beaty JH. Campbell's Operative Orthopaedics. 13th Edition. Philadelphia: Mosby, 2016.
Donatelli R, Wooden M. Orthopaedic Physical Therapy. 4th Edition. Philadelphia, PA: Churchill Livingstone, 2009.
Green A, Hayda R, Hecht AC. Postoperative Orthopaedic Rehabilitation. Wolters Kluwer, American Academy of Orthopaedic Surgeons, 2017.
Brody LT, Hall CM. Therapeutic Exercise: Moving Toward Function. 4th Edition. Philadelphia, PA: Lippincott Williams & Wilkins,2017.
Hoppenfeld S, Murthy VL. Treatment & Rehabilitation of Fractures. Philadelphia, PA: Lippincott Williams & Wilkins Editions,2000.
Egol K, Koval JK, Zuckerman DJ. Handbook of Fractures. 5th Edition. Philadelphia, PA: Wolters Kluwer, 2015.
Magee DJ., Manske R.C. Orthopedic Physical Assessment. 7th Edition. Philadelphia, PA: ELSEVIER, 2021.
McRae R, Esser M. Practical Fracture Treatment. 5th Edition. Edinburgh: Churchill
Miller M, Hart J. Review of Orthopaedics. 6th Edition. Philadelphia, PA: Saunders Elsevier,
Solomon L, Warwick D, Nayagam S. Apley's System of Orthopaedics and Fractures. 9th Edition. London: Hodder Arnold, 2010.

Jones, M. and Rivett, D. (2005) Clinical Reasoning for Manual Therapists. Edinburgh: Elsevier.
Atkinson, K., Coutts, F. and Hassenkamp, A-M. (2005) Physiotherapy in Orthopaedics: A problem solving approach. 2nd edn. Edinburgh: Churchill Livingstone.

Dandy, D. (2003) Essential Orthopaedics and Trauma, 4th edn. Edinburgh: Churchill Livingstone.
Hertling, D. and Kessler, R.M. (2006) Management of Common Musculoskeletal Disorders. Physical Therapy Principles and Methods. 4 edn. Philadelphia: Lippincott, Williams & Wilkins.
Kendall, F.P., McCreary, E.K. and Provance, P.G. (2005) Muscles: Testing and Function. 5th edn. Baltimore: Williams & Wilkins.
Levangie P.K. and Norkin, C.C. (2005) Joint Structure and Function; A Comprehensive Analysis. 4rd edn. Philadelphia: Davis & Co.

Relevant Scientific Journals:*Physical Therapy*

- Journal of Orthopaedics and Traumatology
- Journal of Orthopaedic & Sports Physical Therapy
- Journal of Orthopaedic Trauma
- Knee Surgery Sports Traumatology Arthroscopy
- The Bone & Joint Journal
- Hip International
- The Knee
- The Journal of Hand Surgery
-BMC Musculoskeletal Disorders
-Physiotherapy

MODULE OUTLINE OF PHYSIOTHERAPY IN PAEDIATRIC NEUROLOGICAL DISORDERS AND DISEASES

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-6020	**Semester**	6th
Module Title	Physiotherapy in Paediatric Neurological Disorders and Diseases		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Theory (lectures)	3	**6**
Laboratory (laboratory exercises and clinical training)	2	
Total	5	

Module Type	Specialty Module
Pre-Required Modules	
Teaching and Examination Language	Greek
Suitable for ERASMUS students	YES (English), undertaking an essay
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes
The module PHYSIOTHERAPY IN NEUROLOGICAL PAEDIATRIC DISORDERS AND DISEASES is a basic course for preparing students for the module CLINICAL PLACEMENT IN NEUROLOGICAL PHYSIOTHERAPY. The module content aims to provide students with the theoretical knowledge and special methods necessary for the physical therapy of children with cerebral palsy (CP), meningomyelocele and congenital diseases. Specifically, methods and techniques for resolving problems in children with neurological diseases (such as motor impairment, muscle tone dysfunction, balance and gait disorders) and functional limitations are analyzed, as well as the assessment scales for these parameters. For each disease, the procedure for examining and evaluating the pediatric patient's clinical signs and symptoms is analyzed, the data are interpreted and, also, methodology for the planning of an effective intervention and its evidence base are analyzed. After having successfully completed the module PHYSIOTHERAPY IN NEUROLOGICAL PAEDIATRIC DISORDERS AND DISEASES, students will be able to: • Know the incidence, etiology and clinical picture of diseases and disorders. • Describe the usual complications and associated deficits observed in children. • Describe physiotherapeutic management and appropriate interventions in children with CP, myopathies, meningomyelocele, etc. • Recognize the importance of Functional practice throughout the life of the child. • Be able to specify the short- and long-term goals of physiotherapy intervention in pediatric patients. • To be aware of global child rehabilitation guidelines and to apply them • Know the conservative and surgical management of children with CP, meningomyelocele and congenital diseases • Assess the clinical symptoms of the child patient and cooperate with the other health scientists of the rehabilitation team. • To approach the child and the parents in the appropriate way, in order to build a relationship of trust. • To act based on the basic principles of ethics and bioethics of the physical therapist profession, with responsibility, conscientiousness, consistency, confidentiality and empathy. • To adopt a patient-centered approach, respecting diversity and interculturality

General Competences

- Analysis and synthesis of data and information
- Plan and management of physiotherapeutic interventions
- Decision making
- Work in an interdisciplinary context
- Independent work
- Group work

(3)MODULE CONTENT

- **Typical motor development** (normal/abnormal reflexes, evaluation of motor maturation).
- **Basic principles and handlings of PT intervention in CP** (positioning and physical handling interventions to facilitate movement, head and trunk control, control use of sensory stimuli to facilitate positioning and handling, adaptive equipment for positioning and locomotion).
- **Cerebral Palsy I** (etiology, classification, related deficits, ICF, mental retardation)
- **Cerebral Palsy II** (Physiotherapeutic Assessment, [GMFC, MACS etc.], Early Physiotherapeutic Intervention, home-based treatment of child with CP)
- **Cerebral Palsy III** (Surgical management, management of deformities, Physiotherapeutic interventions in childhood and adolescence, Halliwick concept).
- **Cerebral Palsy** (gait analysis, orthotics, hand-held mobility devices, wheeled mobility, communication devices).
- **Evaluation Measures in the Cerebral Palsy** (GMFCS , GMFM , GAS, MACS, Melbourne Unilateral Upper Limb Function, ect)
- **Myelomeningocele** (incidence, etiology, clinical picture, musculoskeletal disorders, spinal deformities, hydrocephalus, other system disorders, Physiotherapeutic interventions, orthoses, PT intervention during school age, independent living, family training).
- **Congenital diseases I** (heredity, classification, Down syndrome, Cri-du-chat syndrome, Prader-Willi syndrome, arthrogryposis multiplex congenita, PT interventions).

- **Congenital diseases II** (osteogenesis imperfecta, custic fibrosis, Fragile X syndrome, Rett syndrome, Phenylketonuria, PT intervention).
- **Congenital diseases III** (Spinal muscular atrophy, Duchenne muscular dystrophy, Becker muscular dystrophy, PT interventions, adaptive equipment).
- **Congenital diseases IIII** (Genetic disorders and mental retardation, psychomotor development, PT interventions)
- **Assistive Technology** (robotics, litegait)

(4)TEACHING AND LEARNING METHODS

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform	
TEACHING ORGANIZATION	**Activity**	**Semester Workload**
	Lectures	150
	Laboratory training and exercise	45
	Educational visits	
	Submission of an individual or team project	
	Total	**195**
STUDENT ASSESSMENT	**The theoretical part of the module** is assessed by final written examination (50%), which may include multiple choice questions, true-or-false questions, gap-filling and open-ended questions. **The laboratory part** is evaluated with continuous assessment of the students throughout the semester (with practical demonstration of assessment methods, therapeutic intervention planning and demonstration of physiotherapy techniques) (50%).	

(5)SUGGESTED READING

- *Suggested books :*

1. Martin and Kessler. Φυσικοθεραπευτικές Παρεμβάσεις σε Ασθενείς με Νευρολογικές Παθήσεις. Επιμέλεια ελληνικής Έκδοσης: Δάφνη Μπακαλίδου. Αθήνα. Εκδόσεις: Κωνσταντάρας-Ιατρικές εκδόσεις , 2015

2. Robert J.Palisano, Margo N.Orlin, Joseph Schreider. Campell's Φυσικοθεραπεία για παιδιά, 1η ελληνική έκδοση

3. Jacquelin Perry, M. (2010). Gait analysis: normal and pathological function. *New Jersey: SLACK*.

4. Miller, F., Bachrach, S., Lennon, N., O'Neil, M., 2020. Cerebral palsy, 2nd ed. Springer Nature Switzerland AG, Switzerland.

5. Shepherd, R.B., 2018. Εγκεφαλική παράλυση στη βρεφική ηλικία: στοχευμένη δραστηριότητα για τη βελτιστοποίηση της αρχικής σωματικής και κινητικής ανάπτυξης. Healthaction, Αθήνα.

6. Cech, D.J., Martin, S. "Tink," 2012. Functional meovement development: across the lifespan, 3rd ed. Elsevier Inc., USA

-*Suggested Reading*

1. Bell, J., Decker, B., Eichmann, A., Palkovich, C., & Reji, C. (2024). Effectiveness of Virtual Reality for Upper Extremity Function and Motor Performance of Children With Cerebral Palsy: A Systematic Review. *The American Journal of Occupational Therapy*, *78*(2), 7802180180.

2. Papageorgiou, E., Nieuwenhuys, A., Vandekerckhove, I., Van Campenhout, A., Ortibus, E., & Desloovere, K. (2019). Systematic review on gait classifications in children with cerebral palsy: an update. *Gait & posture*, *69*, 209-223.

3. Syrengelas D, Kalampoki V, Kleisiouni P, Manta V, Mellos S, Pons R, Chrousos GP, Siahanidou T. Alberta Infant Motor Scale (AIMS) Performance of Greek Preterm Infants: Comparisons With Full-Term Infants of the Same Nationality and Impact of Prematurity-Related Morbidity Factors. Phys Ther. 2016 Jul;96(7):1102-8. doi: 10.2522/ptj.20140494. Epub 2015 Dec 4. PMID: 26637651.

4. Syrengelas D, Siahanidou T, Kourlaba G, Kleisiouni P, Bakoula C, Chrousos GP. Standardization of the Alberta infant motor scale in full-term Greek infants: Preliminary results. Early Hum Dev. 2010 Apr;86(4):245-9. doi: 10.1016/j.earlhumdev.2010.03.009. Epub 2010 May 8. PMID: 20452736.

5. Syrengelas D, Kalampoki V, Kleisiouni P, Konstantinou D, Siahanidou T. Gross motor development in full-term Greek infants assessed by the Alberta Infant Motor Scale: reference values and socioeconomic impact. Early Hum Dev. 2014 Jul;90(7):353-7. doi: 10.1016/j.earlhumdev.2014.04.011. Epub 2014 May 3. PMID: 24796209.

6. Hanna SE, Rosenbaum PL, Bartlett DJ, Palisano RJ, Walter SD, Avery L, Russell DJ. Stability and decline in gross motor function among children and youth with cerebral palsy aged 2 to 21 years. Dev Med Child Neurol. 2009 Apr;51(4):295-302. doi: 10.1111/j.1469-8749.2008.03196.x. PMID: 19391185

7. Blackburn JS, Mink JW, Augustine EF. Pediatric movement disorders: Five new things. *Neurol Clin Pract*. 2012;2(4):311-318. doi:10.1212/CPJ.0b013e318278bf06

8 Abouratobi A, Arazpour M, Ahmadi M, Saeedi H,Head J. Efficacy of ankle foot orthoses types on walking in children with cerebral palsy: A systematic review. Annals of Physical and Rehabilitation Medicine; 2017

9. K.C. Jagadamma, F.J. Coutts, T.H. Mercer, J. Herman, J. Yirrell, L. Forbes M. L. van der Linden.Optimising the effects of rigid ankle foot orthoses on the gait of children with cerebral palsy (CP) – an exploratory trial, Disability and Rehabilitation: Assistive Technology, 2015;10:6, 445-451

10. Kane, Kyra J., Joel L. Lanovaz, and Kristin E. Musselman. "Physical therapists' use of evaluation measures to inform the prescription of Ankle-Foot Orthoses for children with cerebral palsy." Physical & Occupational Therapy In Pediatrics 39.3 (2019): 237-253.

11. N. Eddison, A. Healy, R. Needham, N. Chockalingam,The effect of tuning ankle foot orthoses-footwear combinations on gait kinematics of children with cerebral palsy: A case series,The Foot,Volume 43,2020

12. Poole, Marilyn & Simkiss, Doug & Rose, Alice & Li, François-Xavier. (2017). Anterior or posterior walkers for children with cerebral palsy? A systematic review. Disability and Rehabilitation: Assistive Technology. 13. 1-12. 10.1080/17483107.2017.1385101

13. Cardoso et al Development of postural control and maturation of sensory systems in children of different ages a cross-sectional study, Brazilian Journal of Physical Therapy,Volume 22, Issue 1,2018,Pages 70-76

14. Kyvelidou A, Harbourne RT, Willett SL, Stergiou N. Sitting postural control in infants with typical development,motor delay, or cerebral palsy. Pediatr Phys Ther. 2013 Spring;25(1):46-51

15. Keeratisiroj O, Thawinchai N, Siritaratiwat W, Buntragulpoontawee M, Pratoomsoot C. Prognostic predictors for ambulation in children with cerebral palsy: a systematic review and meta-analysis of observational studies. Disabil Rehabil. 2018 Jan;40(2):135-143

16. Skoutelis, V.C., Kanellopoulos, A.D., Kontogeorgakos, V.A., Dinopoulos, A., Papagelopoulos, P.J., 2020. The orthopaedic aspect of spastic cerebralpalsy. J. Orthop. 22, 553–558.

17.Interventions to improve physical function for children and young people with cerebral palsy: international clinicalpractice guideline. *Dev elopmental Medicine & Child Neurology,* 2022.:64(5), pp. 536–549.

18. Skoutelis VC, Mastronikola N, Dinopoulos A, Skouteli E, Dimitriadis Z, Bakalidou D. The Greek Version of Mini-Manual Ability Classification System (Mini-MACS): Translation and Reliability Study. Cureus. 2022 Oct 8;14(10):e30073. doi: 10.7759/cureus.30073.

19. Skoutelis VC, Dimitriadis Z, Kalamvoki E, Vrettos S, Kontogeorgakos V, Dinopoulos A, Papagelopoulos P, Kanellopoulos A. Translation, reliability and validity of the Greek functional mobility scale (FMS) for children with cerebral palsy. Disabil Rehabil. 2022 Apr;44(8):1436-1442. doi: 10.1080/09638288.2020.1799439.

20. Howard, M. C. (2017). A meta-analysis and systematic literature review of virtual reality rehabilitation programs. *Computers in Human Behavior*, *70*, 317-327.

21. Papageorgiou, E., Nieuwenhuys, A., Vandekerckhove, I., Van Campenhout, A., Ortibus, E., & Desloovere, K. (2019). Systematic review on gait classifications in children with cerebral palsy: an update. *Gait & posture*, *69*, 209-223.

- *Related scientific journals:*

-Pediatr Phys Ther
- The Foot,
- *Gait and Posture*
- Physical & Occupational Therapy in Pediatrics

- *The American Journal of Occupational Therapy*
- *Neurol Clin Pract*
- Annals of Physical and Rehabilitation Medicine
- Phys Ther

MODULE OUTLINE OF ERGONOMICS – PHYSIOTHERAPY CONSULTATION'

(1) GENERAL

FACULTY	**ERGONOMICS – PHYSIOTHERAPY CONSULTATION**		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	**Π1-6030**	**SEMESTER**	**ΣΤ**
MODULE TITLE	ERGONOMICS – PHYSIOTHERAPY CONSULTATION		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDIT UNITS**
Theory-Interactive lectures	3	
Practical -practical exercises	2	
Total	5	5

MODULE TYPE	Specialty
PREREQUISITE COURSES:	
TEACHING AND EXAMINATION LANGUAGE	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes (English)
MODULE WEBSITE (URL)	

[2] LEARNING OUTCOMES

Learning outcomes
The module Ergonomics-Physiotherapy Consultation is a basic field connecting physiotherapy to the modern social and professional reality with the goals of prevention, the optimization of professional performance, while guarding and protecting human resources. The objectives of the course are for the students to comprehend: • The main principles of ergonomics in its three main aspects (physical, cognitive and organization) • The current epidemiological data regarding health problems related to occupation and everyday life • The mechanisms of painful syndromes related to occupation and everyday life • The relationship between man-machine.

- The relationship between man and environment (physical, occupational, home, etc.)
- The recording and analysis methods of human activity, in the context of specific activities

After the successful completion of the course the students:

A. Will be able to

- Assess the effect of gravity and loads during the handling of a weight
- Plan ergonomic interventions, to optimize the occupational performance and to prevent musculoskeletal disorders
- Analyze occupational activities by recording and measuring the loads applied on the musculoskeletal system and the effect of everyday conditions on the other systems of the human body
- Implement ergonomic adaptations and programs, cooperating with professionals of the multidisciplinary ergonomics team and using the appropriate recording an assessing tools of the occupational activity
- Comprehend the need for the proper occupational planning, in order to prevent risks, anxiety, individual and organizational errors, undue physical, mental and emotional fatigue and to assist to the safe integration to workspace.
- Contribute to the planning of the rehabilitation and occupation and to teaching and research.
-
- **B.** Will be able to apply basic ergonomic principles in commonly reported problems for physiotherapy intervention and plan adapted physiotherapy programs:
- For the improvement of posture, motion and function of a person in the context of everyday life and professional occupation
- For the learning of appropriate skills for reduced loads while handling a weight
- For appropriate interventions to manage and prevent painful syndromes
- For the optimization of occupational performance through the management and prevention of problems related to pain and overuse in the musculoskeletal system
- To support the occupational activity in ergonomically organized workspaces by assessing possible occupational risks
- To train professionals and improve their performance by applying the principles of physics, cognitive and organizational aspects of ergonomics.
- To improve the procedures of servicing and caring for the patients.

General Competences

- Analysis and synthesis of data and information
- Decision making
- Individual work
- Planning and management of physiotherapy interventions
- Team work

- Work in an international environment
- Work in multi-disciplinary environment
- Promote free, creative and deductive thinking
- Develop new research ideas

(3) MODULE CONTENT

Theory

- Ergonomics. Definition, main elements. Interaction between man and machine.
- Epidemiology. Main elements. Illness, occupation, cost, prevention and European perspective.
- Prevention and improvement programs of the motor patterns: lumbar spine, trunk, cervical spine (back school, neck school, consultation in coexisting abnormal conditions)
- Simple machines, vehicles. Schock-vibration. Loads analysis, machine operation. Vehicles, drivers.
- Lower limb. Pelvis, hip, knee, ankle, foot, toes, sole. Muscle activity and loading of musculoskeletal structures in the lower limb. Exercise. Prevention.
- Normal gait, metabolic cost. Deceleration and loading during gait. Normal gait patterns. Running, stairs.
- Floor, friction. Loads and deviations from normal function of the foot. Compressive forces. Repetitive motions. Footware, oveuse syndromes.
- Upper limb. Assessment of developing forces in the upper limb structures. Loads in the tissues, revertive motions, deceleration of the human body in everyday activities.
- Anthropometrics. Grips. Everyday tools and objects, ergonomic design. Equipment, organize workspace. Appopriate choice and adaptation to prevent loading.
- Health and safety at work. Epidemiological data related to occupational activity and work conditions.
- Work, environment. Heat, sound, lights. White finger syndrome. Impact of sound environment. Visual fatigue.
- Biologic rhythms, nightwork, metabolic diseases, preventive physiotherapy.
- Complex mental tasks, human error, decision making, motivation.
- Musculoskeletal and psychological stress. Anxiety, burnout, aches/pain, musculoskeletal syndrome. Prevention.
- General ergonomic model – Ergonomic work analysis.
- Goals of ergonomic intervention in the workspace. Ergonomic programs. Instructions, planning, EU guidelines. Healthy occupation at every age.
- Preventive physiotherapy. Physiotherapy assessment and intervention for functional rehabilitation and personal “social efficacy”.
- The role of the physiotherapist as an ergonomic clinical expert and his contribution to rehabilitation, to the organization of work, to teaching and research.

- Contribution to the organization and improvement of systems and processes for servicing and caring for patients.

Practical

- Trunk. Pelvic control. Improvement of proprioception and posture. Streching and strengthening of appropriate muscle systems.
- Sitting posture. Observation, analysis, assessment. Seats, experiential applications.
- Ergonomic seat, computer. Use of computer, stresses. Prevention, applications.
- Principles of ergonomic organization in the workspace. Loading positions, postures of musculoskeletal systems.
- Everyday musculoskeletal stresses. Assessment of stresses in musculoskeletal structures.
- Prevention of musculoskeletal stresses. Preventive physiotherapy programs.
- Adaptation of everyday activities based on ergonomic needs.
- Gait. Targeted observation, evaluation and analysis of loading.
- Gait assessment. Interventions targeted to prevention.
- Evaluation and assessment of loading in everyday activities – prevention of musculoskeletal stresses in everyday activities (baby care by the mother, tasks of pupil, home tasks, etc.).
- Ergonomic intervention, preventive physiotherapy programs, applications.
- Physiotherapy consultation in hospitals and workspaces, including industries, construction sites, offices, health care services, public and private physiotherapy venues.
- Ergonomic occupational analysis. Ergonomic programs.

Organization in workspaces, in order to optimize occupational performance, safety and protection from stresses, reduce accidents

4. TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery method	*Πρόσωπο με πρόσωπο*	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	Use of ICT. in Teaching (interactive Prezi PowerPoint presentations, videos, conceptual maps), in the lab part (collaborative online software, monitoring, evaluation, ergonomic solutions), in Communication with students (e-mail, e-class, TEAMS)	
TEACHING ORGANIZATION	***Δραστηριότητα***	***Φόρτος Εργασίας Εξαμήνου***

	Theory-Lectures Guest lectures after approval by the Physiotherapy Department	90
	Practical Practical exercises On-site visits (inside or outside the School after approval by the Department)	45 45
	Total	**135**

STUDENT EVALUATION

The theoretical part of the module is assessed by

- Written final exam (100%) which includes the administration of questionnaires covering all taught material and in multiple choice questions, filling in the blanks and text development

The laboratory part is evaluated by observation and recording of occupational activity with the possibility of onsite visits and presentation of an evidence-based proposal for problem solving based on physiotherapy principles

(5)SUGGESTED READING

1. Berry C. A Guide to Ergonomics. Occupational Safety and Health Division. North Carolina: Department of Labor, 2009.
2. Bradley D, Clifton-Smith T. Breath, Stretch and Move. Get Rid of Workplace Stress New Zealand: Random House, 2013.
3. Burton J. WHO Healthy Workplace. Framework and Model: background and supporting literature and practice. Geneva: WHO Headquarters, 2010.
4. Chaffin D, Andersson G. Occupational Biomechanics. Seated Work. 4th Edition. NY: J. Wiley & sons, 2006.
5. Chaitow L. Is a postural-structural-biomechanical model. Within manual therapies, viable?: A JBMT debate. Journal of Bodywork & Movement Therapies. 2011; 15:130-152.
6. Chebykin O, Bendy G, Karwowski W. Ergonomics and Psychology. Developments in Theory and Practice. NewYork: CRC Press, 2008.
7. Donatelli R, et al. Physical therapy of the shoulder. 5th Edition. New York: Churchill Livingstone, 2011.
8. Frankel V, Nordin M. Basic Biomechanics of the Musculoskeletal System 4th Edition, Baltimore **Lipincott**, Williams & Wilkin, 2012.
9. Helander M. A Guide to Human Factors and Ergonomics. 2nd Edition. Florida: CRC Press, 2005.
10. Jakobs K. Ergonomics for Therapists. 3nd Edition. Baltimore: Mosby, 2008.
11. Key G. Industrial Therapy. Baltimore: Mosby, 2008.
12. Kriebel D, Jakobs M, Markkanen P, et al. Lessons Learned. Solutions for workplace safety and health. University of Massachusetts: Lowel, 2011.
13. Λάιος Λάμπρος, Γιαννακούρου - Σιουτάρη Μ. Σύγχρονη εργονομία 5ηέκδοση Αθήνα: Εκδόσεις Γιαννακούρου,2003
14. Levy B, Wegman B, Baron S,Sokas R. Occupational and Environmental Health, 6theditionOxford:University Press,
15. Loisel P, Anema J. Handbook of work disability: Prevention and management. NY: Springer 2013.
16. Marklund S, Worklife and Health in Sweden2000, Stockholm : National Institute in Working Life,2001.
17. Μαρμαράς Ν. Εισαγωγή στην εργονομία Αθήνα: 5ηέκδοσηΠανεπιστημιακές εκδόσεις, Εθν, Μετσόβιο Πολυτεχνείο,2010
18. Μαρμαράς Ν. Ναθαναήλ Δ. Εισαγωγή στην εργονομία Αθήνα: 1ηέκδ. Ελληνικά ακαδημαϊκά ηλεκτρονικά συγγράμματα και βοηθήματα, αποθετήριο Κάλλιπος,2016

19. Occupational Safety & Health Administration. Ergonomics for the prevention of the musculoskeletal disorders. USA: Department of Labor, 2009. Available at: http://www.osha.gov/ergonomics/guidelines/nursinghome/final_nh_guidelines.pdf
20. Πουλμέντης Π. Βιολογική Μηχανική Εργονομία. Αθήνα: Εκδόσεις Καπόπουλος, 2007.
21. Salvendy G, Handbook of Human Factors and Ergonomics 4 4thedition New Jersey : John Wiley and Son's, 2012.
22. Schunke M, Schulte E, Schumacher U. Βασική Περιγραφική Ανατομική. 6ηέκδοση Αθήνα: Ιατρικές Εκδόσεις Π.Χ. Πασχαλίδης, 2007.
23. Smidt G, Gait in rehabilitation. NY Churchill Livingstone,1990
24. Stevens A, Lowe J. Ιστολογία του Ανθρώπου. 3ηέκδοση.Αθήνα: Ιατρικές Εκδόσεις Π.Χ. Πασχαλίδης, 2008. Τσακλής Π. Β. Γενικές αρχές εργονομίας και προληπτική φυσικοθεραπείας. 1ηέκδοση Εκδόσεις University Studio Press Α.Ε., 2005
25. Chartered Society of Physiotherapy (CSP) (2002) Physiotherapy Consultant (NHS): Role, Attributes and Guidance for Establishing Posts. [WWW document.] URL http:// www.csp.org.uk/uploads/documents/csp_physioprac_pa56.pdf

LINKS:

- hseni.gov.uk
- Hand-arm vibration at work
- Hand-arm vibration at work: A brief guide
- Safe use of power presses
- Work-related Musculoskeletal Disorders (WMSDs)
- Introduction to occupational diseases
- iloencyclopaedia.org
- Criteria for a Recommended Standard
- A Step-by-Step Guide to Using the NIOSH Lifting Equation for Single Tasks
- Ergonomics - Back Injury Prevention
- Ergonomic Engineering Interventios for Construction Industry
- EU-OSHA

Relative scientific journals:

Accident Analysis and Prevention
Applied Ergonomics
Ergonomics
Human Factors
Journal of Cognitive Engineering and Decision Making
International Journal of Human Computer Studies
International Journal of Industrial Ergonomics
IEEE Transactions on Human-Machine Systems
Pain
Sports Technology
-International Journal of Occupational Safety and Ergonomics

MODULE DESCRIPTION OF SPORTS PHYSIOTHERAPY

(1) GENERAL

FACULTY	Health Science and Care Faculty		
DEPARTMENT	PHYSIOTHERAPY		
LEVEL OF STUDY	UNDERGRADUATE		
MODULE CODE	**П2-6040**	**SEMESTER OF STUDY**	**6th**
MODULE TITLE	SPORTS PHYSIOTHERAPY		

INDEPENDENT TEACHING ACTIVITIES	**TEACHING WEEKS**	**ECTS**
Theory-Interactive lectures	3	
Laboratory	2	
Total	5	6

COURSE TYPE	Specialty
PREREQUISITES:	
LANGUAGE OF INSTRUCTION AND EXAMINATIONS:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes (English)
COURSE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
The presentation of the syllabus of Sports Physiotherapy will provide students the opportunity to study, evaluate, plan, offer services to sports populations and gain clinical reasoning as sports physiotherapists / exercise specialists such as: a) The epidemiology of sports injuries in relation to the type of sport, the type of injury, the injury mechanism, the training period and the process of physiotherapy/functional rehabilitation, b) The evaluation procedures, the limitations of functional

assessment and physiotherapy/functional rehabilitation and the criteria for returning to sports, c) The management of injuries with the type of load and biological material, as well as with the industrial operation of the technical skills of the sport and d) The knowledge for the provision of first aid, empathy, communication skills, respect for the environment and diversity in the sports field and the role of the sports physiotherapist / exercise specialist.

After completing the module, students:

- Will be aware of and apply the Personal Protection Measures regarding the application of sports physiotherapy in various populations.
- Will be able to approach patients with sports injuries and develop a relationship of cooperation / trust.
- Will be able to link theory with evidence-based clinical practice.
- They will be aware of global sports injury management guidelines for all sports levels and age groups.
- Will be able to understand and manage the findings of the evaluation of sports injuries in the clinical and natural environment, through comprehensive clinical reasoning.
- Will be able to share the results of the assessment with other health professionals involved in the treatment of the above patients involved in sports.
- Will be able to identify short- and long-term goals of physiotherapeutic intervention in all solar populations and athletic levels with sports injuries.
- Will have acquired the ability to select appropriate and safe clinical practices, combining scientific documentation with the capabilities of each patient and athlete individually.
- Will have acquired proficiency in the application of sports physiotherapy skills and interventions in all categories of sports injuries and sports levels / age groups both in the clinical and natural environment.
- Will be able to re-evaluate the selected therapeutic/functional intervention by identifying the signs of improvement or deterioration of the clinical picture.
- Will have adopted the global guidelines for self-management of sports injuries in order to adequately teach them to patients/athletes.
- Will act based on the basic principles of ethics and bioethics of the physiotherapist profession, with responsibility, conscientiousness, consistency, confidentiality and empathy.
- Will adopt a patient-centered approach, respecting diversity and interculturality.
- Will have acquired a positive attitude towards "green" sports physiotherapy, which uses interventions mostly with hands on and natural treatments, contributing to the reduction of the environmental footprint by adapting interventions to the natural environment and physical activity.
- Will be sensitive to environmental protection issues, such as reducing the environmental footprint, to be able to help European citizens stay healthy and properly prepared to face the effects of climate change by adopting healthy behaviors.
- Will be trained in the clinical application of digital health transformation.

General Skills

- Analysis and synthesis of data and information
- Cooperation with the multidisciplinary team
- Design and management of physiotherapy interventions

- Autonomous work
- Teamwork

(3)**COURSE CONTENT**

THEORY SYLLABUS

- Introduction to Sports Physiotherapy. Ethics in sports. Training and specialization of Sports Physiotherapist according to international organizations - IFSPT. a) Categories of sports injuries, b) exogenous and endogenous factors, c) epidemiology of sports injuries, d) annual training cycle.
- Prevention of sports injuries. a) Pathophysiology and biomechanics of sports injuries (biological materials, healing process), b) preventive measures and parameters of the program of PT – functional rehabilitation of sports injuries. Prevention algorithms and international guidelines of global organizations - FIFA, Strength and Conditioning Association.
- Functional physiotherapy evaluation/rehabilitation of athletes and clinical reasoning. a) Differential diagnosis and criteria for returning to sports, b) sports seasons and emphasis on fitness parameters, c) special assessment forms and new technologies/ digital tools and sports physiotherapist / exercise specialist.
- Muscle-tendon injuries - injuries in athletes (I) - MUSCLE CONTUSIONS. a) Causes of muscle strains/injuries, b) stages of injuries, c) principles of physiotherapy/functional rehabilitation and criteria for returning to sports.
- Muscle-tendon injuries in athletes (II). TENDINOPATHY a) Causes of tendon injuries, b) Stages of injuries, c) Principles of physiotherapy/functional rehabilitation and criteria for returning to sports.
- Foot- injuries in athletes. a) Sprains, b) ligament ruptures, c) deviations of axes of the articular system of the foot, c) Achilles tendinopathy, d) principles of physiotherapy/functional rehabilitation and criteria for return to sports.
- Knee- injuries in athletes- injury mechanism, biomechanics of the knee (I). PATELLOFEMORAL JOINT: a) patella deviations - pathologies, b) serous pockets, c) patellar ligament tendinopathy, d) principles of physiotherapy/functional rehabilitation and criteria for return to sports.
- Knee- injuries in athletes- injury mechanism, biomechanics of the knee (II). TIBIOFEMORAL JOINT: a) meniscus injuries, b) ligament injuries - anterior cruciate, collateral ligaments, c) principles of physical therapy/functional rehabilitation, limitations of surgical rehabilitation and criteria for returning to sports.
- Shoulder girdle - injuries in athletes - injury mechanism and biomechanics of throwing (I). a) Impingement Syndromes - rotating muscles and tendinopathy, b) swimmer's shoulder, thrower's shoulder, gymnastic/rhythmic gymnastics, etc., c) principles of PT/functional rehabilitation and surgical rehabilitation restrictions and criteria for returning to sports.
- Shoulder girdle - injuries in athletes (II). a) Instabilities, b) swimmer's shoulder, thrower's shoulder, etc., c) principles of PT/functional rehabilitation and surgical rehabilitation restrictions and criteria for return to sports.
- Elbow - Hands - injuries to athletes. a) Overuse syndromes, serous pockets, elbow of the tennis player-golfer, hand of the wrestler, skier, cyclist, etc., b) principles of physiotherapy/functional rehabilitation and criteria for return to sports.

- Spine (spinal cord) - injuries in athletes, biomechanics of spinal movements and sports. a) Chronic spinal pain and Back pain-sciatica, b) central body point, principles of prevention and physiotherapy/functional rehabilitation and criteria for returning to sports.
- Concussion and sports. Epidemiology, evaluation procedures and criteria for returning to sport. B. Stress-overuse syndromes of athletes and injuries from external-athletic factors. a) Causes of provocation, b) principles of PT rehabilitation, c) injuries from climatic conditions. C. Psychological approach to sports injuries and first aid. a) First aid principles, b) effect of cryotherapy, c) bandaging and immobilization in splints, d) alternative therapies / mental training and relaxation methods.
- Implementation and evaluation with high technological means. a) Isokinesis, b) foot scan, c) diagnostic ultrasound, c) strength/balance assessments, etc. B. Design of functional rehabilitation programs. a) Training techniques, b) American College of Sports Medicine (ACSM) application programs to athletes/athletes.

LABORATORY SYLLABUS

- Functional assessment rehabilitation I (functional assessment criteria, functional tests, mimetic exercises and return to sport criteria, indicative examples). Personal protective measures. Patient/physiotherapist insurance. Identification of the role of the Athletic PT in the clinical and physical environment - Communication skills.
- Functional assessment rehabilitation II (functional tests, FMS, FIFA 11, Power and strength tests, indicative examples). Energy systems and adaptation of the functional rehabilitation program. Behavioral adoption theories: Health belief model, Trans-theoretic behavior model and planned behavior theory. Research documentation for the application of these theories to sports injuries.
- Muscle-tendon injuries and sports (I) - MUSCLE CONTUSIONS. a) Causes of muscle strains, b) Stages of injury, c) Principles of PV-functional rehabilitation/ criteria for return to sports. CLINICAL EXAMPLES e.g. contusion of the hamstring's muscles, rectus femur, adductors, etc.
- Muscle-tendon injuries and sports (II). TENDINOPATHY. a) causes of tendon injuries, b) stages of injury, c) principles of PV-functional rehabilitation/ criteria for return to sports. CLINICAL EXAMPLES e.g. Achilles tendinopathy, patellar tendon, elbow epicondylitis, etc.
- Sports foot injuries (injury mechanism in different sports, clinical trials, functional evaluation-rehabilitation/ criteria for returning to sports). CLINICAL EXAMPLES e.g. sprains.
- Sports knee injuries I (patellofemoral joint: injury mechanism/pathologies in different sports, clinical trials, functional evaluation-rehabilitation/criteria for returning to sports).
- Sports knee injuries II (tibiofemoral joint: ligaments, menisci, injury mechanism in different sports, clinical trials, functional evaluation-rehabilitation/ criteria for returning to sports)
- Shoulder girdle I and sports (tendinopathy, impingement syndrome, injury mechanism in different sports, clinical trials, functional evaluation-rehabilitation/ criteria for returning to sports).
- Shoulder girdle II and sport (instabilities, injury mechanism in different sports, clinical trials, functional evaluation-rehabilitation/ criteria for returning to sports).
- Taping (principles of bandaging and kinesio-tape). First aid / cardio-respiratory resuscitation, evaluation / treatment of concussion, direct trauma etc.

- Lumbar spine and sports activities- central body point (pain syndromes- muscle inhibitions and muscle shortening, pelvic evaluation, differential diagnosis).
- Evaluation with high-tech equipment, use of scales/questionnaires - clinical reasoning, management of sports incidents and return to sports criteria.
- Clinical application of digital health transformation in sports physiotherapy: telerehabilitation and virtual reality services that leverage technology to provide remote patient education on healthcare issues such as digital wearable technologies, live video chatting, electronic file transmission, mobile health applications and therapeutic digital platforms.

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

DELIVERY METHOD	In person
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of T.I.C. Communication with students (e-class) Use of Electronic Applications (apps): Get set, Posture checking, Sports, Metronome, Kinvet equipment, Balance equipment, Sports digital assessment tools and VR apps.
TEACHING ORGANIZATION	

Activity	***Semester Workload***
Theory-Lectures	135
Laboratory training and visit to clinical/sports venues	45
Total	180

STUDENT EVALUATION

The theoretical part of the course is assessed (50%) by:

1. Written final exam (70%) with the administration of questionnaires of all material (multiple choice, true-false questions, filling in gaps and text development)
2. Elaboration and presentation of group work (30%)

*** The grade of evaluation of the theoretical part constitutes 50% of the total grade of the students while the other 50% concerns the grade of the laboratory part of their evaluation in the course of **Sports Physiotherapy.***

The laboratory part is evaluated (50%) with:

- The daily proficiency of skills and knowledge taught and developed by students (see Table 1.)

Table 1. Evaluation criteria for students in Sports Physiotherapy

	Successful performance				Failure
CRITERIA	**Excellent 10 - 8.5**	**Very good 8.4 - 7.5**	**Good 7.4 - 6.5**	**Moderate 6.4-5**	**< 5**
The degree of consistency of the student regarding the observance of the timetable and the consistency of the preparation of assignments within the specified time limits.					
Student overview, cooperation, behavior in relation to: his/her fellow students, patients, his/her teacher within the group.					
The progress of the student in relation to the execution of the assigned assignments					
The development of initiatives and interest of the student during the clinical training.					
Adequacy of theoretical knowledge in the specific cognitive field.					
Ability to select and apply measurement - evaluation tools (questionnaires, clinical trials).					
Ability to collect, interpret and synthesis of evaluation results following clinical reasoning					
Design of an individualized PT-functional rehabili program.					
Delimitation and safety of the Intervention.					
Adequacy of skills in the application of physiotherapeutic interventions/techniques.					

(5) SUGGESTED READING

1. Anderson M, Hall S. Sports Injury Management, William & Wilkins. USA, 1995.

2.Arnheim D. Modern principles of athletic training. USA: C.V. Mosby Co., 1992.

3.Bloomfield J, Fricker P, Fitch K. Textbook of Science and Medicine in Sport. Blackwell Scientific Publication. Australia, 1992.

3. Brotzmn B and Wilk KE. Clinical Orthopaedic USA: C.V. Mosby Co., 2003.

4.Cox Sport Psychology. Brown Benchmark Publication, USA1994.

5.Hutson M. Sports Injuries. Recognition and Management. Oxford Medical Publications. 1990.

6. Flegel M. Sport First Aid. Leisure Press, Champaign. Illinois, 1992

7. Kibler W. The Sport Preparation Fitness Examination. Human Kinetics Books. Champaign, Illinois, 1990.

8. Lephart S, Fu F. Proprioception and Neuromuscular Control in Joint Stability. Human Kinetics, 2000.

9. Kibler W, Herring S, Press J. Functional Rehabilitation of Sports and Musculoskeletal Injuries. An Aspen Publication. USA, 1998.

10.Mcdonald R. Taping Techniques. Principles and Practice. Butterworth Heinemann. Oxford, 1994.
11.Norris C. Sports Injuries. Diagnosis, Management for Physiotherapists. Butterworth Heinemann. Oxford, 2011.
12. Norris C. Αποκατάσταση αθλητικών κακώσεων. Εκδόσεις ΚΩΝΣΤΑΝΤΑΡΑΣ. 2023
13. Peterson L, Renstrom P. Sports Injuries. Their prevention and treatment. London: Martin Dunitz, 2001.
14. Perrin D. Isokinetic exercise and assessment. USA: Human Kinetics, 1997.

15. Prentice WE. Τεχνικές Αποκατάστασης Αθλητικών Κακώσεων. Επιστημονικές Εκδόσεις Παρισιάνου, 2007.
16. Peterson Lars, Renstrom A.F.H. Per. Αθλητικές Κακώσεις-Πρόληψη και Θεραπεία, Broken Hill Publishers Ltd, 2018.
17. Reilly T, Secher N, Snell P, Williams C. Physiology of Sports. E. & F. N. Spon. USA, 1990.
18.Starkley C. Therapeutic Modalities for Athletic Trainers. F.A. Davis Company. Philadelphia, 1993.
19.Taylor P, Taylor D. Conquering Athletic Injuries. Leisure Press, Champaign. Illinois, 1988.
20. Whiting W, Zernicke R. Biomechanics of Musculoskeletal Injury. Human Kinetics. 1998. *21. Φουσέκης Κ. Εφαρμοσμένη Αθλητική Φυσικοθεραπεία, Broken Hill Broken Hill Publishers Ltd, 2015.*

Journals

- *Journal of Orhopaedics and Sports Physical Therapy*
- *Sports*
- *Medicine and Science in Sports and Exercise*
- *Physical therapy in Sports*
- *Functional exercise and rehabilitation*
- *British Journal of Sports medicine*
- *Biology of Sports*
- *Scandinavian Journal of medicine in Sports*
- *Exercise and sports sciences reviews*
- *Qualitative research in sports and exercise and health*
- *Sports Medicine*

7th SEMESTER

s/n	MANDATORY			LECTURE		WORKSHOP		TOTAL		SEMESTER WORKLOAD	ECTS
	MODULES			HOURS	WORKLOAD	HOURS	WORKLOAD	HOURS	WORKLOAD		
	MANDATORY MODULES	CATEGORY	CODE								
1	CLINICAL TRAINING III	SM	П2-7010	3	180	6	90	9	270	270	10
2	GERIATRIC PHYSIOTHERAPY	SM	П2-7020	3	180	-		3	180	180	6
3	PHYSIOTHERAPY ASSESSMENT - CLINICAL REASONING	SM	П2-7030	3	130	-		3	130	130	4
4	ADAPTED PHYSICAL ACTIVITY	SBM	П2-7040	3	160	-		3	160	160	5
5	BASIC PRINCIPLES OF PSYCHOPATHOLOGY	GBM	П2-7050	3	160	-		3	160	160	5
TOTAL				**15**	**810**	**6**	**90**	**21**	**900**	**900**	**30**

MODULE OUTLINE OF CLINICAL TRAINING III

(1) GENERAL

FACULTY	HEALTH & CARING SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	**П1-7010**	**SEMESTER OF STUDY**	**7th**
MODULE TITLE	CLINICAL TRAINING III		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Theory-Interactive lectures	3	
Clinical training	6	
Total	9	10

MODULE TYPE	Specialty
PREREQUISITE COURSES:	
TEACHING AND EXAMINATION LANGUAGE	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes (English)
MODULE WEBSITE (URL)	

[2] LEARNING OUTCOMES

Learning outcomes
The module CLINICAL TRAINING III completes students' knowledge in the field of neurological diseases. CLINICAL TRAINING III is mainly referred to the application of neurological Physiotherapy in children and adults, in public and private structures, so the students will get to know all the possible clinical physiotherapeutic areas of this field in which physiotherapists are employed. CLINICAL TRAINING III is conducted in circular rotation in at least two places such as neurological clinics for adults and children, neurosurgical clinics, rehabilitation centers (e.g. K.E.K.Y.K.A.M.E.A.), early intervention and rehabilitation centers for children(e.g. KE.P.P.A.), outpatient clinics and elderly care units.

The module aims at consolidating students who already acquired theoretical knowledge in the neurological diseases of adults and children in a clinical setting. In this way students become familiar with (a) the approach to patients with neurological diseases, (b) clinical reasoning, (c) the plan of Physiotherapeutic intervention.

After having successfully completed the module CLINICAL TRAINING III, students will be able to:

- Associate theory with evidence- based knowledge in clinical practice.
- Specify the purpose of the patient's individualized program.
- Evaluate the outcome of therapeutic intervention based on sound clinical reasoning.
- Interpret the pathological mechanisms of posture, movement and balance disorders as they occur in neurological patients.
- Understand the clinical importance of the reassessment in terms of the effectiveness-appropriateness of the selected therapeutic intervention.
- Study the patient's medical record in detail and interpret the findings of the clinical and laboratory tests.
- Record and interpret the findings of the physiotherapeutic assessment, considering other clinical and laboratory findings in a clinical setting.
- Monitor and keep patient's medical record.
- Set goals according to the patient's course of therapy and develop a rehabilitation plan, recognizing the progress or not in the patient's condition and anticipated levels of improvement, setting short-and long-term goals.
- specify the type and interpret the effect of physiotherapeutic intervention on neurological patients in different stages of rehabilitation, in different clinical conditions (ICUs, clinics, rehabilitation centers, physiotherapy centers etc.).
- Incorporate modern clinical guidelines into the clinical practice of physiotherapy intervention in neurological patients.
- Interact with the patient intentionally and effectively by establishing trusting relationships and providing a sense of safety.
- Understand the special relationships between patient, therapist, and family.
- act effectively and collaboratively within the interdisciplinary team as well as with other health care professionals.
- Respect the rules of ethics and medical confidentiality

General Competences

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Group work

- Work in an interdisciplinary context
- Planning and managing of physiotherapeutic interventions

(3) MODULE CONTENT

Theory

- **Introduction to clinical physiotherapy of neurological diseases.**
  - ✓ The role of physiotherapy in the rehabilitation of neurological diseases.
  - ✓ Principles, objectives, goals, rules of ethics - medical confidentiality.
  - ✓ Interdisciplinary approach
- **Structure and organization of clinics and rehabilitation units for neurological patients.**
  - ✓ The role of physiotherapy and its mission.
  - ✓ Responsibilities of the physiotherapist in the ICU, clinics, rehabilitation center (chronic diseases institutions), physiotherapy centers etc.
  - ✓ Relationships with other specialties.
- **Organization and equipment of physiotherapy centers.**
- Pediatric physiotherapy equipment (balls, wedges, rolls, standing frames, etc.).
- **Assessment of the neurological patient.**
- Assessment tests (categories). Subjective - objective evaluation. Co-assessment of the findings.
- Physiotherapeutic assessment in the ICU, the clinics, in the rehabilitation center (chronic diseases institutions), in the physiotherapy center, in the patient's home - specific conditions.
- Particularities of assessment in specific populations (neonates, infants, elders, mental retardation, neoplastic diseases, etc.). Physiotherapeutic evaluation in the various stages of rehabilitation (initial stage - relative recovery stage - chronic stage).
- **The contribution of technology to the rehabilitation of neurological patients.**
- Contemporary therapeutic interventions for the management of disorders in muscle tone, proprioception, coordination, balance and gait (treadmill, balance platform, FES, computer-robotic systems, virtual reality systems etc.).
- **Motor disability, quality of life, self-service and independence.**
  - ✓ Factors to improve the quality of life of people with a motor disability.
  - ✓ Accessibility and ergonomics in the environment of the person with motor disability (home, work).
  - ✓ Assistive mobility devices (categories, types, use), orthotics, adaptation of the environment to the particular needs of the patient.
  - ✓ Urination, defecation disorders and their management. Sexual life and disability.
- **Physiotherapeutic approach of neurological diseases in different clinical conditions.**

- ✓ Particularities of physiotherapeutic intervention in the intensive care unit (ICU), in the clinics, in the rehabilitation center (chronic diseases institutions), in the physiotherapy center, in the patient's home.
- ✓ Principles - particularities of physiotherapeutic intervention in the various stages of rehabilitation.

- **Basic principles of rehabilitation in different age groups and Specific Populations - particularities.**
  - ✓ The pediatric neurological patient and its particularities. Basic principles of a physiotherapeutic approach in neonatal age, infancy, childhood, and adolescence.
  - ✓ Old Age. Basic principles of the physiotherapeutic approach. Upper cortical function disorders.
  - ✓ Psychiatric diseases. Psychomotor disorders. The Psychological Factor in Rehabilitation - Psychosynthesis.
  - ✓ Family-physiotherapist relationships.
- **Establishment of a neurological rehabilitation program (case report).**
- Setting of therapeutic goals (short term - long term) at different stages of rehabilitation (therapy scenarios).
- Objectivity, adaptability of rehabilitation programs.
- **Physiotherapeutic intervention means and techniques (case reports).**
  - ✓ The effect of different means and techniques on muscle weakness, muscle tone, movement coordination, somatosensation, balance and gai.
  - ✓ Selection criteria – purpose.
- **Patients with multiple disabilities (case reports).**
- Managing Patients with multiple disabilities - Goal Setting – Hierarchy.
- **Management of muscle tone disorders (case reports).**
  - ✓ Discrimination and management of muscle tone disorders in different categories of patients - lesions in each stage of rehabilitation.
  - ✓ Selection of therapeutic means-techniques for treating muscle tone disorders (classical therapeutic methods - modern means).
- **Management of coordination, balance and gait disorders (case reports).**
  - ✓ Discrimination and management of coordination, balance and gait disorders in different categories of patients - lesions in each stage of rehabilitation.
  - ✓ Selection of therapeutic means-techniques for treating coordination, balance and gait disorders (classical therapeutic methods - modern means).
- **Clinical reasoning and problem solving in the rehabilitation of neurological diseases. Relationship between theory and practice - practice and theory.**
  - ✓ The process of clinical reasoning and decision making in the

rehabilitation of neurological diseases. Decision-making models, reasoning and solving problem strategies. Contemporary clinical guidelines.

- **Clinical application of digital health transformation**
    - ✓ Telehealth services that utilize technology to provide remote patient education about care and can be accomplished through a variety of methods such as telecommunications, remote patient monitoring tools such as wearables, live video chat, the transmission of electronic files, health applications for mobile devices (mobile health–m Health apps) and therapeutic platforms (DigitalTherapeutics-DTx)

Clinical

- **Physiotherapeutic assessment at various stages of rehabilitation.**
    - ✓ Physiotherapeutic assessment of patients in ICU, clinics, rehabilitation center, physiotherapy center etc. Assessment at each stage of rehabilitation. Performance recording. Contemporary clinical guidelines.
    - ✓ Keeping a medical record - recording a course of treatment.
- **Differential assessment of neurological patients according to the type of the disease.**
- Physiotherapeutic assessment of patients with lesion to the upper and lower motor neuron, extrapyramidal disorder, cerebellar lesion, etc. Distinction-differential assessment.
- Assessment in specific population groups (infants, children, elderly etc.).
- **Management - treatment of muscle tone disorders.**
    - ✓ Management of Muscle Tone Disorders in Damages of the Upper and Lower Motor Neuron, Extrapyramidal Disorders, etc.
    - ✓ Practical application of therapeutic techniques and means to different clinical settings, age groups and therapy stages.
- **Management - treatment in disorders of neuromuscular coordination and balance.**
    - ✓ Management in disorders of neuromuscular coordination and balance in different lesions.
    - ✓ Practical application of therapeutic techniques and means to different clinical settings, age groups and therapy stages.
- **Retraining the gait of neurological patients.**
    - ✓ Retraining of gait in different diseases - nervous system lesions (CNS, PNS, etc.).
    - ✓ Practical application of therapeutic techniques and means of gait retraining in different clinical settings, age groups and therapy stages. Use of special aids (orthotics, crutches, sticks etc.).
- **Management – treatment muscle weakness.**
    - ✓ Management of muscle weakness in different diseases - nervous system lesion (including neuromuscular diseases).
    - ✓ Practical application of therapeutic techniques and means of increasing muscle

power in different clinical settings, age groups and therapy stages

- **Management - treatment of sensory-perceptual deficits.**
  - ✓ Management of sensory-perceptual deficits in neurological patients (sensory-perceptual deficits in vision, hearing, kinesthesia, tactile recognition, navigation, etc.).
  - ✓ Practical application of therapeutic techniques and means to different clinical settings, age groups and therapy stages.
- **Knowledge Consolidation - Introducing complex problems.**
- Presentation and analysis of practical examples that contain the components already taught in the previous sections and performed in the form of clinical training. Contemporary clinical guidelines.
- **Mobilization - locomotion of a neurological patient.**
  - ✓ Practical application of mobilization techniques in different clinical settings, age groups according to the stage of rehabilitation.
  - ✓ Locomotion of the neurological patient. Techniques and means to facilitate transition to different positions. Particularities - limitations.
- **Applied use of laboratory - hospital equipment.**
- Training in the use and practical application of laboratory, clinical, and physiotherapeutic equipment to patients.
- **Use of orthotics, prosthetics and aids.**
- Training in the use of orthotics, prosthetics and aids (self-care, mobility) in neurological patients.
- **Applying specific therapeutic means to neurological patients.**
  - ✓ Electrical Stimulation Techniques - TENS, Electrical Muscle Stimulation, FES.
  - ✓ Biofeedback.
  - ✓ Hydrotherapy/Aquatic Therapy.
  - ✓ Treadmill, harnessed support systems, balance platforms etc.
  - ✓ Advanced computing and robotic systems.
- **Applying specific treatment techniques to neurological patients.**
  - ✓ Techniques to facilitate muscle activity and improve motor control: Tapping, passive stretching, joint compression, vibration, ice, vestibular stimulation, movement facilitation.
  - ✓ Techniques to normalize muscle tone and maintain soft tissue length: Stretching, taping, loading, positioning, pressure, vibration, ice, hot, massage etc.
  - ✓ Specific techniques - exercises: Frenkel, Cawthorne-Cooksey etc.
  - ✓ Constraint induced Movement Therapy (CIMT).
  - ✓ Neural tissue mobilization - Neurodynamics.
- **Therapy planning – specifying a therapeutic framework.**
  - ✓ Specifying the therapeutic strategy for problem solving.
  - ✓ Systems-theory based approaches (intervention concepts
    - physiotherapeutic methods). Task-oriented approach, holistic approach,

combined-eclectic approach etc.

- ✓ Planning of group therapeutic exercise programs.
- ✓ Clinical reasoning – evidence-based practice - justification.
- ✓ Contemporary clinical guidelines.

During clinical training, the student is required to deal with conditions that are accompanied by: Impaired muscle tone, movement incoordination, muscle weakness, balance dyscontrol, abnormal walking or a combination of the above. These conditions-diseases include:

- Static encephalopathies or degenerative diseases affecting the Central Nervous System (Cerebral Palsy, Stroke, TBI, Multiple Sclerosis, Parkinson's disease, brain tumors, etc.).
- Diseases - lesions affecting the control systems of muscle tone and muscle synergy (dyskinetic syndromes, ataxia, chorea, etc.).
- Diseases - disorders affecting the Peripheral Nervous System (Erb's palsy, neuropathies - neuropathies, Guillain-Barré, etc.).
- Spinal and neural tube defects (spina bifida, hydrocephalus, etc.).
- Spinal cord injuries (quadriplegia, paraplegia, Brown-Sequard, etc.).
- Chromosomal abnormalities (Down syndrome, Prader-Willi et al.).
- Neuromuscular diseases, myopathies - muscular dystrophies (Duchenne, Becker, spinal muscular atrophy, etc.).
- Neuromuscular junction diseases- myasthenia.
- Neurometabolic diseases (eg leukodystrophies).
- Psychomotor disorders and psychiatric disorders.
- Somatosensory - perceptual disorders (sensory-perceptual impairments of vision, hearing, kinesthesia, tactile recognition, navigation, etc.).
- Deficits of upper cortical-cognitive functions.
- Neurological changes associated with aging.

Toaccomplice the above, the student has many physiotherapeutic techniques and means available.

Physiotherapeutic techniques include (but are not limited to):

- Tactile-proprioceptive stimulation techniques.
- Techniques to facilitate muscle activity and improve motor control: Tapping, stretching, joint compression, vibration, ice, vestibular stimulation, movement facilitation.
- Techniques to normalize muscle tone and maintain soft tissue length: Stretching, tapping, weight-bearing, positioning, traction, compression, vibration, etc.
- Specific physiotherapeutic techniques based on systems-theory approaches (PNF, Petto, NDT, Brunnstrom, Vojta, SI etc.).
- Specific techniques - exercises: Frenkel, Cawthorne-Cooksey etc..
- Protocols based on Constraint-induced movement therapy (CIMT).

- Neural tissue mobilization - Neurodynamics.

Physiotherapeutic means include (but are not limited to):

- Physical agents: hot - cold packs (thermotherapy - cryotherapy), hydrotherapy etc.
- Electrical Stimulation (TENS, FES etc.).
- Biofeedback.
- Treadmill, harnessed support systems.
- Specific aids to facilitate locomotion and gait training.
- Balance platforms.
- Orthotics-Prosthetics.
- Specific means and assessment tests

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery method	*Face to face*
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	Use of ICT. in Teaching (interactive Prezi PowerPoint presentations, videos, conceptual maps), in the Clinical part (collaborative online software, virtual reality, monitoring, evaluation, treatment devices), in Communication with students (e-mail, e-class, TEAMS)
TEACHING ORGANIZATION	

Activity	***Semester Workload***
Theory – Lectures	180
CLINICAL TRAINING	90
Total Course	270

STUDENT EVALUATION

<u>The theoretical part of the module (50%) is assessed by:</u>

- Final written exam (70%) with questionnaires on all the material (multiple choice, true-false questions, filling in the blanks and text development)
- Preparation and presentation of teamwork (30%)

*** The evaluation grade of the theoretical part constitutes 50% of the students' total grade, while the other 50% concerns the grade of the clinical part of the CLINICAL TRAINING III module evaluation.*

<u>The Clinical part(50%) is evaluated by:</u>

- The learned and developed day-to-day skills and knowledge proficiency of the students (see Table 1.)

Table 1. Student evaluation criteria in CLINICAL TRAINING III

	Successful performance				**Failure**
Criteria	Excellent 10 - 8.5	Very good 8.4 - 7.5	Good 7.4 - 6.5	Moderate 6.4-5	< 5
The degree of consistency of the student regarding the preservice of the schedule and the consistency of preparing assignments within the specified time limits.					
General performance of a student, cooperation, behavior in relation to his/her fellow students, patients, his/her teacher within the group					
The progress of the student in relation to the execution of the tasks assigned					
The development of initiative and interest of the student during clinical training					
Sufficient theoretical knowledge in the specific knowledge field					
Ability of selection and application of the clinical measurement - evaluation tools (questionnaires, clinical tests)					
Ability to collect, interpret and synthesize the assessment results following clinical reasoning					
Design of an individualized physiotherapeutic program					
Define Its limitations and secure its intervention					
Adequacy of skills in the application of physiotherapy interventions/techniques					

(5)SUGGESTED READING

1) *Βασιλόπουλος Δ. Νευρολογία - Επιτομή θεωρίας και πράξης. Ιατρικές εκδόσεις Π.Χ. Πασχαλίδης, Αθήνα 2003.*
2) *Λογοθέτης Ι., Μυλωνάς Ι. Νευρολογία Λογοθέτη. 4η έκδοση, University Studio Press, 2004.*
3) *Barnes M., Johnson G. Σύνδρομο Ανώτερου Κινητικού Νευρώνα και Σπαστικότητα. Εκδόσεις Παρισιάνου, 2008.*
4) *Braddom R. Physical medicine and rehabilitation. Saunders, 3rd edition, 2006.*

5) *Boelen M. Health professional's guide to physical management of Parkinson's disease. Human kinetics; 1st edition, 2009.*
6) *Bromley I. Τετραπληγία και παραπληγία, Έκδοση: 6η Εκδόσεις Παρισιάνου, 2011*
7) *Car J., Shepherd R. Νευρολογική Αποκατάσταση. Βελτιστοποίηση των Κινητικών Επιδόσεων. Έκδοση: 2η Εκδόσεις Παρισιάνου, 2017*
8) *Deborah S. Nichols-Larsen. Νευρολογική αποκατάσταση.* Νευροεπιστήμες και Νευροπλαστικότητα στη Φυσικοθεραπεία. *Εκδόσεις Κωνσταντάρας-Ιατρικές εκδόσεις , 2017*
9) *Edwards S. Neurological Physiotherapy. A problem-solving approach. Churchill Livingstone, 2nd edition, 2002.*
10) *Gabard D., Martin M. Physiotherapy ethics. F. A. Davis Co, 1st edition, 2003.*
11) *Jewell D. Guide to evidence-based physiotherapy practice. Jones & Bartlett publishers, 1st edition, 2007.*
12) *Lennon S, Ramdharry G, Verheyden G. Φυσικοθεραπευτική Διαχείριση για Ασθενείς με Νευρολογικές Διαταραχές. Broken Hill Publshers LTD, 2020.*
13) *Levitt, S. Θεραπεία της εγκεφαλικής παράλυσης και της κινητικής καθυστέρηση. Έκδοση: 5η Εκδόσεις Παρισιάνου, 2014*
14) *Martin and Kessler. Φυσικοθεραπευτικές Παρεμβάσεις σε Ασθενείς με Νευρολογικές Παθήσεις. Εκδόσεις Κωνσταντάρας-Ιατρικές εκδόσεις , 2015*
15) *Montgomery P., Connolly B. Clinical applications for motor control. Slack incorporated, 2nd edition, 2002.*
16) *Nichols-Larsen D. Neurological Rehabilitation. Neuroscience and Neuroplasticity in Applied Physiotherapy. Κωνσταντάρας-Ιατρικές εκδόσεις, 2017*
17) *Scrutton, D. Damiano, D. Mayston M. Αντιμετώπιση των κινητικών διαταραχών στα παιδιά με εγκεφαλική παράλυση, Έκδοση: 2η Εκδόσεις Παρισιάνου, 2009*
18) *Shumway A. Κινητικός Έλεγχος, από την Έρευνα στην Κλινική Πράξη. Εκδόσεις Πασχαλίδης 2011*
19) *Shumway-Cook A., Woollacott M. Motor Control: Translating Research Into Clinical Practice. Lippincott Williams & Wilkins, third edition, 2006.*
20) *Stokes, M., Stack E. Κλινική Διαχείριση για Νευρολογικές Καταστάσεις. Έκδοση: 3η. Εκδόσεις Παρισιάνου, 2015.*
21) *Umphred D. A. Neurological Rehabilitation. 6th edition. Elsevier - Mosby 2012.*

Relative scientific journals:

Archives of Physical Medicine and Rehabilitation
Brain
Brain Disorders & Therapy Journal
Clinical Rehabilitation
Gait and Posture
Neuromuscular Disorders
Neurorehabilitation Journal
Journal of Applied Physiology
Journal of Neurologic Physiotherapy
Journal of Neurology
Journal of Pediatric Orthopaedics
Journal of Rehabilitation Research and Development
Journal of Rehabilitation Medicine
Journal of Neurology Neurosurgery Psychiatry
Stroke Research & Therapy
Therapeutic Advances in Neurological Disorders
Physiotherapy (APTA, America)
Physical Medicine and Rehabilitation
Physiotherapy Theory and Practice

MODULE OUTLINE OF PHYSIOTHERAPY IN GERIATRICS

(1) GENERAL

FACULTY	HEALTH & CARING SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	**П1-7020**	**SEMESTER OF STUDY**	**7th**
MODULE TITLE	PHYSIOTHERAPY IN GERIATRICS		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Theory-Interactive lectures	3	6

MODULE TYPE	Specialty
PREREQUISITE COURSES:	
TEACHING AND EXAMINATION LANGUAGE	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes (English)
MODULE WEBSITE (URL)	

[2] LEARNING OUTCOMES

Learning outcomes

The module of Physiotherapy in Geriatrics is a basic module in preparing students for the holistic treatment of older adults, staffing interdisciplinary teams for the prevention and treatment of conditions, injuries and illnesses associated with the aging process.

Also for their participation in information campaigns and the establishment of priorities for healthy aging.

The course content aims to train students in specific adult issues:

- current epidemiological data on their associated health problems,
- the effects of exercise on their physiological and functional adaptations
- changes in their mental well-being and generally their quality of life
- utilizing global guidelines for the management and self-management of their perceptual and motor problems
- in the methodological design and development of research documented intervention programs for the treatment, recovery, self-service and safe participation in their daily lives and
- the role of physiotherapy in improving the quality of life of elderly people.

Students after successfully completing the module will be able to:

A.

- understand the impact of aging on the biological structures, motor and cognitive skills of the elderly
- record and consider skeletal, kinetic adaptations, behavioral, mental using appropriate recording and evaluation tools
- have the flexibility to adapt specialized Physiotherapeutic skills to the evaluation and rehabilitation of older persons
- design proven intervention programs with exercise, skills training such as safe movement and counselling aimed at preventing falls, improving balance, increasing confidence, reducing fear of falling and promoting an active and healthy lifestyle for older people
- play a decisive role in clinics, such as fall clinics, which provide a comprehensive assessment, identifying underlying pathologies (such as osteoporosis) and referring to other specialized services as well as providing individual advice, motivation and support
- organize physiotherapeutic interventions for prevention and rehabilitation of common pathologies and disorders associated with advanced age

• implement rehabilitation programs, working appropriately with scientists, staffing science support teams for the elderly, falls clinics, hospital and rehabilitation structures

• identify the short- and long-term goals of physiotherapy intervention in older people

• be able to collect, interpret and synthesize evaluation results from an osteoporotic, sarcopenic, demented patient with the appropriate clinical reasoning

• be able to make decisions on unforeseen events of the above patients

B. They will understand the need for:

• organized multifactorial interventions for reducing falls as they will reduce the cost of hospital admissions or care services

General Competences

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Group work
- Work in an interdisciplinary context
- Planning and managing of physiotherapeutic interventions

(3)MODULE CONTENT

- Physiology, biology, biomechanics, psychology, pathophysiology and theories of aging. Cardiovascular / respiratory, excretory, metabolic, musculoskeletal and neuromuscular features.
- Communication issues related to patient / client intelligence, language and learning abilities.
- Common medical conditions in older people, arthritis, osteoporosis, skeletal-articular problems, sarcopenia, dementia, stroke, Parkinson's, Alzheimer's, diabetes, urinary incontinence, anxiety, depression, chronic disability, prolonged bed rest/ Common surgeries, such as cataract, pacemaker, arthroplasty. Restrictions on vulnerable elderly. Design of Physiotherapeutic Assessment and Intervention.

- Assessment and management of older adults with multiple and / or complex medical conditions or syndromes, including but not limited to delirium, dementia, including behavioral and psychological symptoms, mild cognitive impairment (MCI), falls and mobility bladder issues, immobility, pain and complications of palliative care and end-of-life care, mood disorders and other psychiatric manifestations, osteoporosis and metabolic bone disorders, preoperative and postoperative orthopedic management. Assessment of cognitive functions, mental state and vulnerability.
- Collaboration with specialists providing targeted research and interventions on special issues in older adults such as Vascular Surgery, Hematology, Radiodiagnosis, Radiotherapy Oncology, Allergology, Anesthesiology, Gastroenterology, Obstetrics-Gynecology, Microbiology (Medical Biopathology), Neurology, Neurosurgery, Nephrology, Nursing, Family Medicine, Orthopedics, Urology, Ophthalmology, Pathology, Plastic Surgery, Pulmonology, Nuclear Medicine, Rheumatology, Physical Medicine and Rehabilitation, Surgery, Psychiatry, Psychology, Otolaryngology.
- Interdisciplinary approach to third and fourth age issues: drugs and polypharmacy, information on relevant interdisciplinary clinical guidelines, safety, hygiene and prevention, bedsores and falls, anxiety and carer problems. Recruitment of bodies such as retirement homes, protection centers, hospitals, Community agencies (e.g., clubs, Arthritis Institutions, Osteoporosis, Dementia, Fall Prevention, Geri-Olympics), social policy organizations, legal matters.
- Physiotherapeutic evaluation with the international system S.O.A.P. (Subjective, Objective Assessment, Progress), considering multiple physical, mental/ psychiatric, functional, and / or social problems, clinical prognosis, and the wishes of the elderly as well as taking into account other available data such as detailed neurological examination.
- Assessment of mobility, basic skills and balance using standard, valid and reliable instruments.
- Consideration of assessments of vision, hearing, and cognitive status. Assess cognitive function, considering psychiatric disorders, including mood disorders and behavioral and psychological symptoms of dementia using standardized, valid and reliable measures.
- Recognize opportunities to promote health and disease prevention in older people as well as promote their health based on documented evidence, including but not limited to regular physical and mental exercise, appropriate nutrition and vaccination.

- Interpretation of nutritional evaluation. Estimation of malnutrition and sarcopenia. The role of nutritional supplements in people over 75 years, hydration in the oldest old , nutrition support in hospitalized elderly patients. Nutrition as a means of preventing and treating sarcopenia and sarcopenia obesity.
- Exercise and maintain muscle mass.
- Community Geriatric Physiotherapy - Group programs
- Fall risk assessment. Aging and preventing falls. Exercise as the only physiotherapeutic intervention in the risk of falls and in combination with other interventions, such as dietary supplements, ergonomic space modifications, group intervention programs. Research documentation.
- Physiotherapist involvement in osteoporosis and falls clinics. Use scales and evaluation tools, such as the Fracture Risk Assessment tool (FRAX). Assessment of urinary and / or fecal incontinence.
- Postoperative physiotherapeutic intervention such as after pacemaker, cataract, fracture surgery.
- Understanding communication problems due to mental, aesthetic malfunctions, behavioral and racial or other differences
- Understand the problems of access to primary care and chronic, complex problems, physical and mental health, social problems and racism for the elderly
- More specific knowledge of clinical geriatric physiotherapist
- Need for coordination, communication and intervention skills focusing on the needs of the elderly, including:

Interact with patients / clients, relatives, other health care providers and community organizations to coordinate activities to facilitate efficient and effective care of the client or patient

Contribute to the physiotherapist's patient management process to make use of community resources and health services

Communicate effectively with patients, clients, family members, careers, therapists, consumers, and policy makers about with Geriatrics topics

Discusses the rationale for physiotherapeutic evaluation and intervention, using best current and / or documented practice with patients / clients and families, other healthcare professionals, and financial resource managers

Collaborate as a member of the healthcare team to ensure physiotherapy as part of an integrated geriatric care plan

Adapted to the literacy level of the elderly; 7 Completes detailed, accurate, safe, concise and timely recording in accordance with the guidelines and in collaboration with the hospitality / rehabilitation structure (e.g., contacting financial resource managers to maximize treatment services, legal protection of staff, patients, and structure.

• Provide guidance in collaboration with specialist bodies / scientists:

1. on diagnosis, prognosis and intervention strategies

2. for the understanding of individual abilities, functional limitations or disabilities

3. with the objective of risk prevention / reduction as well as promotion

4. to judge the use of the Internet and other information available in Community

5. To adapt the guidelines on the situation (e.g., learning modes, patient or carer practice, use of audio and visual aids, , Illustrated Guidelines, Culturally Sensitive Approach)

6. the following specialized areas of geriatric physiotherapy (e.g., fall prevention, bone health, geriatric athlete, capacity building, foot care)

7. Maintain an updated knowledge base on health services as defined by the Ministry of Health and Welfare or and providing education to patients, caregivers, health professionals and the public on the role of physiotherapeutic interventions.

Techniques / Procedures for Physical Therapy:

• Therapeutic exercise, including but not limited to a) aerobic fitness / endurance, fitness (e.g. walking / moving training, increased workload, treadmill, and energy saving guidelines) b) balance, coordination, and flexibility (e.g., fall risk reduction and training, neuromuscular training or retraining, perceptual training, posture awareness training, sensory training or retraining, standardized, complementary training approaches, exercise-oriented training activity)

• Vestibular rehabilitation

• Elderly body engineering and orthostatic stabilization (e.g. lifting techniques for careers, orthostatic stabilization activities, awareness of posture). Walking and moving training (e.g. walking, wheelchair, fall prevention)

• Facilitation techniques in neuromotor development (e.g., motor training, motor patents, restrictive physiotherapy, neuromuscular training, or retraining)

Training endurance and strength of head, limbs, pelvic floor, neck, muscles, and respiratory

muscles (e.g., active, assisted, active and resistance exercise, water exercise, complementary activity-based exercise approaches)

• Practicing self-care and home management including: (a) modification of restrictions (e.g., environmental modification); (b) training in the use of equipment and equipment (e.g., friction-reducing devices / lifts, auxiliaries) during ADL and IADL, orthodontic, protective, or supportive devices or equipment during self-service c) operational retraining programs (e.g. simulated environment, bed mobility, floor mobility, transport) d) injury reduction or reduction (e.g. self-care and use of home appliances and equipment, safety and energy saving, prevention and training to reduce harmful falls)

• Motion Techniques implantation, which may include: (a) lymphatic drainage; (b) mobilization / manipulation (e.g., soft tissue, spine, and peripheral joints) - limitations on their application.

• Drainage techniques, treating shortness of breath.

• Techniques for preventing and treating wounds

Functional training at work, in the community, recreation or reintegration, including but not limited to:

• Functional training programs (e.g. simulated environment and adaptation activities, retraining; cardiopulmonary resuscitation, coordination, fine mobility)

• Prevention or reduction of injuries (e.g. during work, in the Community and recreation, using devices and equipment); awareness of safety at work and recreation.

Recommendation, implementation, and possibly assembly / modification of devices and equipment. These may include:

a) hospital beds, toilet seats, ramps, lifts / environmental controls, b) auxiliaries (e.g., bacteria, static and dynamic splints, wheelchairs) c) orthopedic devices d) prosthetic devices (upper, lower limbs) (e) protective devices (e.g., cushions, helmets, straps); (f) supporting devices (e.g., compression garments, collars, straps).

Participation in welfare activities for the third and fourth age, social policy issues, exploitation of financial resources (individual and community) for the acquisition of suitable equipment

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery method	*Face to face*
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY	Use of ICT. in Teaching (interactive Prezi PowerPoint presentations, videos, conceptual maps), in Communication with students (e-mail, e-class, TEAMS)
TEACHING ORGANIZATION	

Activity	***Semester Workload***
Theory – Lectures	180
Total Course	180

STUDENT EVALUATION

Module theory is assessed by a written final examination (100%), which may include:

- ✓ Multiple choice questions
- ✓ Short answer questions or essay-type questions
- ✓ Comparative evaluation of theoretical elements

(5)SUGGESTED READING

1. Ασημακόπουλος Δ. Σύγχρονη ΩΡΛ Γηριατρικής *Εκδόσεις POTONTA* 2016
2. Χανιώτης Φρ., Χανιώτης Δ., Γηριατρική. Εκδόσεις: Κ. & Ν. Λίτσας Ο.Ε., 2012.
3. *Σακελλάρη Β. Γώγου Β. Θεραπευτικές Τεχνικές Μάλαξης. Εκδόσεις Παρισιάνου, 2004.*
4. *Avers Dale, Wong Rita A. Guccione's Φυσικοθεραπεία στη Γηριατρική. Επιμέλεια Ελληνικής Έκδοσης: Σακελλάρη Β 1/2022, (Εκδότης): BROKEN HILL PUBLISHERS LTD, ISBN: 9789925588114*
5. *Bottomley J, Lewis C. Geriatric Rehabilitation: A Clinical Approach. 3rd ed. Upper Saddle River, NJ: Pearson Prentice Hall; 2008*
6. *Bottomley JM, Lewis CB. Orthopaedic Treatment Considerations. In: Geriatric Physical Therapy: A Clinical Approach. East Norwalk, CT: Appleton and Lange; 1994:327-352.*
7. *Brill P.A. Σωστή άσκηση στην τρίτη ηλικία (Τσούρλου Θ., επιμ.). Champaign, IL: Human Kinetics. 2004.*
8. *Ciccone CD. Pharmacology in Rehabilitation. 4th edition. Philadelphia, PA: F.A. Davis;2007*
9. Conil, N. Nicholl, C. Webster, S. Wilson K.J. Γηριατρική. Εκδόσεις: ΠΑΡΙΣΙΑΝΟΥ, 2006
10. *Daniels, D. Exercises for Osteoporosis. New York: Healthy Living Books; 2005.*
11. *Gillespie, LD, Robertson, MC, Gillespie, WH, Sherrington C, Gates S, Clemson LM, Lamb SE. Interventions for preventing falls in older people living in the community. Cochrane Database of Systematic Reviews 2012, Issue 9. Art. No.: CD007146.DOI: 10.1002/14651858.CD007146.pub3.*
12. *Guccione A. Geriatric Physical Therapy. 2nd edition. Philadelphia, PA: Mosby; 2000.*
13. *Jager TE, Weiss HB, Coben JH, Pepe PE. Traumatic brain injuries evaluated in U.S. emergency departments, 1992–1994.*
14. *Stevens JA, Corso PS, Finkelstein EA, Miller TR. The costs of fatal and nonfatal falls among older adults. Injury Prevention2006a;12:290–5.*
15. *Tromp AM, Pluijm SMF, Smit JH, et al. Fall-risk screening test: a prospective study on predictors for falls in community dwelling elderly. Journal of Clinical Epidemiology 2001;54(8):837–844.*
16. *Umphred DA. Neurological Rehabilitation. 5th edition. Philadelphia, PA: Elsevier Mosby;2007*
17. *Wolinsky F D, Fitzgerald J F, Stump T E. The effect of hip fracture on mortality, hospitalization, and functional status: a prospective study. American Journal of Public Health 1997.*
18. *Κατευθυντήριες γραμμές για τη διάγνωση της οστεοπόρωσης στην Ελλάδα, Αθήνα 2014, Μονογραφία, Εκδόσεις: ΕΛΙΟΣ*
19. *Academic Emergency Medicine 2000;7(2):134–40.*
20. *A Normative Model of Physical Therapist Professional Education: Version 2004. Alexandria, VA: American Physical Therapy Association; 2004.*
21. *World Health Organisation. WHO Global Report on Falls Prevention in Older Age. Geneva: World Health Organisation; 2007.*

22. *http://www.csp.org.uk/professional-union/practice/evidence-base/physiotherapy-works/falls-and-frailty Physiotherapy works: Falls and frailty | The Chartered Society of Physiotherapy. Physiotherapy reduces falls, addresses frailty and restores independence. AGILE Charter Society of Physiotherapy.*

Relative scientific journals

Age Ageing
Alzheimers Disease & Parkinsonism Journal
Archives of Gerontology and Geriatrics
BMC Geriatrics
Geriatric Rehabilitation
Journal of Chronic Diseases
Journal of Geriatric Physical Therapy
Journal of the American Geriatrics Society
Journal of Rheumatology
Physical Medicine and Rehabilitation
Reviews in Clinical Gerontology
Vestibular Rehabilitation

MODULE OUTLINE OF 'PHYSIOTHERAPY ASSESSMENT-CLINICAL REASONING'

(1) GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-7030	**Semester**	**7th**
Module Title	PHYSIOTHERAPY ASSESSMENT-CLINICAL REASONING		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
THEORY	3	
Total	3	4

Module Type	Special Core Module
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	Yes
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes

The purpose of the module is for the student to understand how to assess the patient using both the appropriate clinical tools and the cutting edge of existing technology, as well as how to record their findings in order to organize an appropriate treatment plan. Also, the aim is for the student to acquire skills to collect and classify the subjective symptoms of the patient in relation to the category of his problem. To record the objective findings of the patient through valid and reliable evaluation methods. Take into account the patient's symptoms and findings in relation to the type and stage of the problem, as well as his personality to set the goals of rehabilitation. The course also aims to train the student to distinguish the different pathologies and to formulate the differential physiotherapeutic assessment as well as the goal setting and the choice of therapeutic means

After completing the course, students:

- Know the concept and process of clinical/professional reasoning in Physiotherapy and its relation to decision making
- They will be able to apply the process of reflection during the practice of physiotherapy
- They will acquire the ability to systematically complete the patient assessment and distinguish different problems from different systems
- They will be able to use assessment tools (questionnaires, scales, machines, etc.) to record subjective and objective findings, while they will be able to identify any weaknesses of either the examination or treatment, and they will be able to develop appropriate tools
- They will be able to interpret, analyze, synthesize and judge the results of research related to the problem they are investigating
- They will be able to select and apply theories, approaches and methods using the up-to-date research data available in physiotherapy and to use a variety of modern evaluative methods and tools

General Competences
• Data Collection and Analysis • Synthesis of information, design of intervention plan and decision making • Autonomous work • Teamwork • Working in an interdisciplinary environment • Respect for diversity and multiculturalism • Professional and ethical responsibility in practice • Demonstration of social, professional and moral responsibility and sensitivity to issues of medical confidentiality, special populations • Observation and production of new techniques or variation of existing ones • Criticism and self-criticism through reflection processes • Generation of new research ideas

(3) MODULE CONTENT

Theoretical Part

1. Introduction to Assessment through history taking using the S.O.A.P. system (Subjective, Objective, Assessment, Planning) and Clinical Reasoning.
2. General principles during subjective evaluation – Taking the patient's medical history: what it involves, how it is applied, how it is recorded. Detailed analysis for parameters such as family history, history of the present disease, medical history of the patient, improvement / deterioration factors, etc., as well as the perception of the patient's pain (intensity, frequency, duration, daily variation, etc.). Application examples.
3. Pain assessment - Biopsychosocial model of the disease - theoretical framework, analysis and principles of its application in physiotherapeutic assessment. Their evaluation with questionnaires, scales and/or indicators that are adapted for Greek patients and research-based in their use. Pain assessment using high technology: clinical and research quantitative sensory testing (algometer, device for recording the electrical and thermal threshold of pain and pain resistance)
4. Assessment of findings of stress, emotional, mental, cognitive, socio-economic factors. Clinical tools, interview, scales, indicators. Evaluation with high technology
5. Assessment according to the system of "flags". Reference to red, yellow, orange, blue & black flags. Differential diagnosis in Physiotherapy. Suspicious spots. Taking into account findings that would be reasons for immediate referral of the patient by the Physiotherapist to the doctor of appropriate specialty
6. General principles during Objective evaluation: what it includes, how it is applied at clinical and high-tech level, how it is recorded. Methods and techniques for collecting objective findings (survey, palpation, listening, movement, neurological examination, special tests, etc.). Criteria for their selection in the PT assessment.
7. Objective assessment: Assessment of mobility, flexibility, ROM. Clinical evaluation of movements, range of motion, elasticity, shortening of musculoskeletal structures. Evaluation using technology electronic goniometers, motion sensors, motion modeling programs.
8. Objective assessment: Evaluation of muscle function. At clinical level, detailed recording of parameters such as strength, endurance, muscular performance, local sensitivity after palpation. Assessment of muscle tone and muscle imbalances. Evaluation using high-tech means.
9. Objective assessment: Assessment of balance, kinesthesia, proprioception, sensory and stereognosia. Clinical tests, differentiation parameters. Evaluation of synergy and motor control. Evaluation using high technology, equilibrium platform, isokinetic dynamometer for kinesthesia and proprioception. Validity and reliability of tests.
10. Objective assessment: Assessment of functional capacity and daily activities. Clinical evaluation with tests and scales, Functional indicators, Simulated work activities and ADL, Adaptation to patient groups, validity and reliability of tests.
11. Objective assessment: Evaluation of standing posture, gait (normal and pathological). Clinical tests, differentiation parameters. Evaluation using high-tech means.
12. Clinical reasoning – clinical reasoning – decision making process in comorbidities. General principles and development of clinical reasoning that will lead to sound decisions about both the etiopathogenesis of the problem and the treatment options. Bibliographic and research support of treatment options (evidenced-based medicine / physiotherapy). Problems involving more than one human systems. Consideration of the problem and differential assessment of the situation.

13. Application of clinical reasoning (case studies). Examples in the form of case studies. Consideration of findings. Organization of the treatment program. Selection of methods, techniques and means, based on evidenced practice. Define the short- and long-term goals for the specific problem at that point in time. Continuous re-evaluation of objectives and results.

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery	Face to Face
Use of Information and Communication Technology (ICT)	Use of information and communication technologies. Communication with students (e-class) Lectures-presentations using a whiteboard, transphanescent, overhead projector, video and television Class discussion and feedback Work in small groups or individually Student presentations,
Teaching Organization	**Activity** / **Semester Workload** Lectures 130 Total **130**
Student Assessment	1. Written final exam. 2. Elaboration of individual or group projects

(5)SUGGESTED READING

- *Lovell B., Lander M., Murch N. Κλινικές Δεξιότητες – Διάγνωση και αιτιολόγηση, Εκδότης Broken Hill Publishers LTD, 2024.*
- *Hecker H-U., Steveling A., Peuker E., Liebchen K. Άτλας σημείων Βελονισμού και πυροδότησης Μυοπεριτονιακού Πόνου. Επιμέλεια Ελληνικής έκδο Γ. Γεωργούδης, Κωνσταντάρας Ιατρικές Εκδόσεις, 2023*
- *Hoogenboom B., Voigt M.I., Prentice W.E. Φυσικοθεραπευτικές Παρεμβάσεις στο Μυοσκελετικό Σύστημα, Fourth Edition 4th Edition, Ελληνική Έκ Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
- *Παναγόπουλος Α. Κλινικές Δοκιμασίες Του Μυοσκελετικού Συστήματος Στην Ορθοπαιδική. Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
- *Miller M., Hart JA. Review Ορθοπαιδικής Κωνσταντάρας Ιατρικές Εκδόσεις, 2010*
- *Ευσταθόπουλος Ν. Αρθρίτιδες: Διάγνωση και θεραπεία. Κωνσταντάρας Ιατρικές Εκδόσεις, 2010*
- *Staheli LT. Παιδοορθοπαιδική. Κωνσταντάρας Ιατρικές Εκδόσεις, 2007*
- *Goodman CC, Snyder TEK. Differential Diagnosis for Physical Therapists: Screening for Referral, Saunders. 2012*
- *Kellogg CC. Heick J., Lazaro RT. Differential Diagnosis for Physical Therapists 6th Edition, Elsevier, 2017*
- *Melzack R & Wall P. Textbook of pain. 6th edition. London Saunders, 2013.*
- *Hoppenfeld S: Ορθοπεδική Νευρολογία. Αθήνα: Μαρία Γρ. Παρισιάνου, 2000.*

- *Kisner C, Colby L. Therapeutic Exercise: Foundations and Techniques. 6th edition. Philadelphia, Published by Davis Plus, 2012.*
- *Butler DS. Explain Pain Supercharged Spiral-bound. NOI Group, 2017*
- *Musolino GM. Κλινικός συλλογισμός και λήψη αποφάσεων στη φυσικοθεραπεία, Κωνσταντάρας Ιατρικές Εκδόσεις, 2021*
- *Petty NJ., Ryder D., Lewis J. Μυοσκελετικό Σύστημα-Κλινική Εξέταση, Αξιολόγηση, Θεραπεία, Διαχείριση. Εκδότης Broken Hill Publishers LTD, 2022*
- *Brotzman B., Manske R. Ορθοπεδική αποκατάσταση στην κλινική πράξη. Κωνσταντάρας Ιατρικές Εκδόσεις, 2015*

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MODULE OUTLINE OF ADAPTED PHYSICAL ACTIVITY

(1) GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-7040	Semester	**7th**
Module Title	Adapted Physical Activity		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Lectures	2	4
Workshops	1	1
Total	3	5

Module Type	Special Core Module
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	Yes (English)
Module Website (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
Upon completion of the course, students should be able to: • Know the role and the goals of adapted physical activity in the life of people with special needs. • Associate theory with substantiated knowledge of physical activity in disability • Understand the importance of the interdisciplinary / holistic approach to disability. • Assess physical fitness and fundamental kinetic patterns of people with

special needs and interpret the results of the evaluation.

- Set short- and long-term goals where appropriate.
- Design a personalized program of physical activity, fundamental kinetic models, fluid element skills, games, and sports for a lifetime of engaging in sports activities that promote the physical health and well-being of people with disabilities.
- Use adaptations to goals, activities, and teaching to ensure the safe and successful participation of people with disabilities of all ages.
- Follow a holistic approach with appropriate exercise adjustments for:
    - ✓ development of physical and motor skills
    - ✓ development of physical skills
    - ✓ maintaining and developing physical and mental health entertainment
    - ✓ utilizing leisure time
    - ✓ integration of the disabled person
    - ✓ socializing the disabled person

General Competences

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Teamwork
- Design and management of Physical Activity interventions

(3) MODULE CONTENT

- Introduction to Adapted Physical Activity (APA)
- Kinect evolution.
- Assessment of fitness for the disabled.
- Developmental Coordination Disorder: Evaluation, design, and implementation of PSP programs.
- Mental Disability: Evaluating, design, and implementing PSP programs.
- Autism: Evaluation, design, and implementation of PSP programs
- Cerebral Palsy: Functional Assessment Tools / Tests, design, and Implementation of Personalized PBS Programs
- Therapeutic Horse Riding - Therapy and Therapeutic Swimming in neurodevelopmental disorders. Experimental workshop in equestrian club and pool.
- Sensory integration.
- Sensory disorders: Evaluation, design, and implementation of PSP programs.
- Attention Deficit Hyperactivity Disorder (ADHD): Evaluation, design and Implementation of Personalized PFD Programs
- Epilepsy Evaluation, design, and implementation of PSP programs

(4)TEACHING AND LEARNING METHODS – ASSESSMENT

<table>
<tr><td>Delivery</td><td>Face to Face</td></tr>
<tr><td>Use of Information and Communication Technology (ICT)</td><td>Open e-class platform</td></tr>
<tr><td>Teaching Organization</td><td>
<table>
<tr><th>Activity</th><th>Semester Workload</th></tr>
<tr><td>Lectures</td><td>160</td></tr>
<tr><td></td><td></td></tr>
<tr><td>Total</td><td>160</td></tr>
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<tr><td>Student Assessment</td><td>The course is assessed with:

✓ written final examination (70%) by administration of questionnaires that cover all the content of each course and relate to multiple choice questions, right-wrong answers, fill in the blanks, and essay type questions.
✓ Teamwork presentation (30%).</td></tr>
</table>

(5)SUGGESTED READING

- Suggested Reading:

- *Σκορδίλης Ε, Γραμματοπούλου Ε. Η ένταξη μαθητών με αναπηρία στη Φυσική Αγωγή. Αθήνα: Εκδόσεις Πεδίο, 2015.*
- *C. Sherrill (2004). Μετάφραση –Επιμέλεια: Ευαγγελινού Χ. Προσαρμοσμένη Φυσική Δραστηριότητα, Αναψυχή και Αθλητισμός. Εκδόσεις Πασχαλίδης, 2014.*
- *Horvat M, Block M, Kelly L. Μετάφραση – Επιμέλεια: Σκορδίλης Ε, Γραμματοπούλου Ε. Μέτρηση και αξιολόγηση στην Προσαρμοσμένη ΦυσικήΑγωγή. Αθήνα. Εκδόσεις Τελέθριον, 2011.*
- *Gallahue LD. Ozmun CJ. Understanding Motor Development. Infants, children, adolescents, adults. 7th Edition. New York: Humanities & Social Sciences, 2012.*
- *Henderson SE, Sugden D. Movement Assessment Battery for Children. 7th Edition. London: Pearson, 2007.*
- *Robert H. Bruininks. Oseretsky test of motor proficiency: Examiners manual. 2nd Edition. MN: Circle Pines AGS Publishing, 2005.*
- *Winnick J. Brockport Physical Fitness Test Manual: A Health-Related Test for Youths with Physical and Mental Disabilities. USA: Human Kinetics, 1999.*
- *Sherrill C. Adapted Physical Education and Recreation. A Multidisciplinary Approach (5th ed). Dubuque, IA: Wm. C. Brown, 1998.*
- *Winnick JP, Short FX. (Physical fitness testing of the disabled: project unique. Champaign, IL: Human Kinetics, 1995.*

- Related Journals:

- *Adapted Physical Activity Quarterly*
- *European Journal of Adapted Physical Activity*

MODULE OUTLINE OF 'BASIC PRINCIPLES OF PSYCHOPATHOLOGY'

(1)GENERAL

FACULTY	FACULTY OF HEALTH & CARING SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	**Π2-7050**	**SEMESTER**	**7th**
MODULE TITLE	NEUROLOPHYSIOLOGY		
INDEPENDENT TEACHING ACTIVITIES		**Weekly Teaching Hours**	**ECTS**
	Theory (Lectures)	3	5
MODULE TYPE	General Core Module		
PRE-REQUIRED MODULES:			
TEACHING AND EXAMINATION LANGUAGE	Greek		
SUITABLE FOR ERASMUS STUDENTS	Yes (English), undertaking an essay		
MODULE WEBSITE (URL)			

(2)LEARNING OUTCOMES

After the completion of the module, students: • Will have acquired basic knowledge of clinical psychopathology-symptomatology. • Will be able to recognize a psychiatric disorder. • Will be able to develop a clinical and differential diagnostic rationale on a specific clinical symptomatology. • Will have acquired updated and evidence-based knowledge of the most important and most common psychiatric diseases regarding epidemiology, etiology, clinical picture, diagnosis and therapy.

- Will have acquired basic knowledge of contemporary diagnostic methods in Psychiatry.
- Will have acquired basic knowledge of contemporary therapeutic methods in Psychiatry.
- Will be able to recognize the mental disorder and understand its nature and severity.
- Will be able to set the appropriate therapeutic goals and plan the therapeutic intervention according to the specific needs and characteristics of each patient.
- Will be able to participate in interdisciplinary working groups to holistically manage patient problems.
- Will have acquired general principles and communication skills with the psychiatric patients on patient safety, respect for their personality and diversity and safeguarding personal data.
- Will be familiar with the mechanisms of searching for new scientific knowledge, evaluating new information and applying innovative therapeutic methods.

GENERAL COMPETENCES

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Group work- participation in interdisciplinary groups
- Respect for diversity and multiculturalism
- Demonstration of social, professional and ethical responsibility and sensibility on gender issues

(3)MODULE CONTENT

General Part

- Definition of Mental Health
- History and evolution of Psychiatry
- Classification and diagnostic tools
- Psychiatric examination and psychiatric history
- Psychological development
- Psychological defense mechanisms
- Psychiatry and Neurosciences: Neuroimaging (imaging, functional), Genetics, Neuroendocrinology, Neurophysiological Methods

• Psychiatric Nosology

A. Psychopathology-Psychiatric Semiology

- Disorders of consciousness
- Psychomotor disturbances
- Attention deficits and orientation impairment
- Mental disorders
- Perceptual deficits
- Language and thought impairments
- Mood disorders

B. Epidemiology, Etiology, Clinical Picture and Diagnosis of Major Psychiatric Diseases

- Anxiety disorders: specific phobias, social phobia, agoraphobia, panic disorder, generalized anxiety disorder obsessive-compulsive disorder, acute stress reaction, post-traumatic stress disorder
- Disorders resulting from interaction of physical and mental disturbances: somatoform disorders: somatization disorder, conversion disorder, hypochondriasis, dysmorphophobic disorder, somatoform pain disorder, somatic disorders manifesting with psychiatric symptoms, comorbidity of psychiatric-somatic disorders (psychosomatic illnesses), dissociative disorders, factitious disorder
- Personality disorders: paranoid, antisocial, hysterical-histrionic, obsessive-compulsive.
- Mood disorders: (major depressive episode, manic episode), bipolar disorder, major depression, dysthymia.
- Schizophrenia and related disorders: Schizophrenic spectrum and other psychotic disorders: schizophrenic disorder, persistent delusional disorder, acute and transient psychotic disorders, schizoaffective disorder.
- Alzheimer disease and other degenerative diseases of the nervous system with psychiatric semiology (Huntington chorea, dementia with Lewy body)
- Substance related and addictive disorders
- Eating disorders
- Sleep disorders
- Sexual disorders
- Psychopathology in specific populations: pregnancy, adolescence, aging (psychogeriatrics), caregivers

- Forensic Psychiatry
-

C. General psychopathology of children

- Phobic and anxiety disorder of childhood
- Childhood depression
- Childhood psychosis
- Behavioural disorders
- Tic disorders
- Hyperkinetic syndrome
- Enuresis-encopresis
- Obsessive-compulsive disorder
- Mental retardation
- Pervasive developmental disorders: Autism, Asperger syndrome, Rett syndrome, other pervasive developmental disorders unspecified

D. Psychiatric Therapeutics

- Biological therapies: pharmacotherapy, electroconvulsive therapy, phototherapy, transcranial magnetic stimulation (TMS), psychosurgery
- Psychotherapies: psychoanalytic approach, behavioral approach, cognitive approach, systemic approach, family therapy, couple therapy, group therapy, supportive psychotherapy
- Psychosocial interventions

(4) TEACHING AND LEARNING METHODS – ASSESSMENT DELIVERY

DELIVERY	Physical presence
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform
TEACHING ORGANIZATION	

Activity	***Semester Workload***
Lectures	
Posting and distribution of literature	
Interactive teaching	
Guest speakers approved by the Physiotherapy Department	

	Information relating to scientific activity (conferences, meetings)	
	Total	160
STUDENT ASSESSMENT	Final written examination (100%) of all module content, through: ✓ Multiple choice questions ✓ True-or-false questions ✓ Gap-filling ✓ Short answer questions ✓ Open ended questions	

(5) SUGGESTED READING

- ✓ Harrison Paul, Cowen Philip, Burns Tom, Fazel Mina. Oxford Ψυχιατρική-Βασικές Αρχές. 1/2020. BROKEN HILL PUBLISHERS LTD
- ✓ Παπαδημητρίου- Ι. Λιάππας- Λ.Λύκουρας. Σύγχρονη Ψυχιατρική, Γ. 01/2012. ΒΗΤΑ ΙΑΤΡΙΚΕΣ ΕΚΔΟΣΕΙΣ ΜΕΠΕ
- ✓ ABRAHAM NUSSBAUM. DSM 5 ΔΙΑΓΝΩΣΤΙΚΗ ΕΞΕΤΑΣΗ. 1/2020. ΙΩΑΝΝΗΣ ΚΩΝΣΤΑΝΤΑΡΑΣ
- ✓ Π. Ουλής. ΕΓΧΕΙΡΙΔΙΟ ΚΛΙΝΙΚΗΣ ΨΥΧΟΠΑΘΟΛΟΓΟΓΙΑΣ. 2/2009. ΒΗΤΑ ΙΑΤΡΙΚΕΣ ΕΚΔΟΣΕΙΣ ΜΕΠΕ

- ✓ https://www.psychiatriki-journal.gr/
- ✓ https://bmcpsychiatry.biomedcentral.com/ (BMC Psychiatry)
- ✓ https://jamanetwork.com/journals/jamapsychiatry (JAMA Psychiatry)
- ✓ https://www.thelancet.com/journals/lanpsy/home (The Lancet Psychiatry)
- ✓ https://www.nature.com/tp/ (Translational Psychiatry)
- ✓ https://ajp.psychiatryonline.org/ (American Journal of Psychiatry)
- ✓ https://www.cambridge.org/core/journals/the-british-journal-of-psychiatry (The British Journal of Psychiatry)

8th SEMESTER

s/n	MANDATORY			LECTURE		WORKSHOP		TOTAL		SEMESTER WORKLOAD	ECTS
	MODULES			HOURS	WORKLOAD	HOURS	WORKLOAD	HOURS	WORKLOAD		
	MANDATORY MODULES	CATEGORY	CODE								
1	CLINICAL PLACEMENT	SM	П2-8010	-	-	40+	704	40+	704	704	23
	ELECTIVE MODULES										
2	DISSERTASION	E	П2-802ОА	3	196	-	-	3	196	196	7
	ADVANCED PHYSIOTHERAPY	E	П2-8020В	3	196	-	-	3	196	196	7
TOTAL				**3**	**196**	**40**	**704**	**43**	**900**	**900**	**30**

MODULE DESCRIPTION OF CLINICAL PLACEMENT IN PHYSIOTHERAPY

(1)GENERAL

FACULTY	Faculty of Health & Caring Sciences		
DEPARTMENT	Physiotherapy		
LEVEL OF STUDY	Undergraduate		
MODULE CODE	Π2-8010	**SEMESTER OF STUDY**	**8th**
MODULE TITLE	Clinical Placement		

INDEPENDENT TEACHING ACTIVITIES	**TEACHING WEEKS**	**ECTS**
Clinical Placement	40	23

COURSE TYPE	Specialty Module
PREREQUISITES:	All specialty modules
LANGUAGE OF INSTRUCTION AND EXAMINATIONS:	Greek
THE COURSE IS OFFERED TO ERASMUS STUDENTS	Yes (English) Undertaking an essay
COURSE WEBSITE (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes
The module refers to the completion of the Clinical Placement of students in the science of physiotherapy. Upon successful completion of the course, students will be able to: • Understand the management of musculoskeletal, meurological, respiratory, cardiovascular problems. • Develop basic skills in designing and organizing treatment programs • Develop the ability to interpret the results of the evaluation, and decide on the selection and implementation of the most appropriate physiotherapy intervention in

rehabilitation based on clinical reasoning and research documentation

- Acquire the skills in the application of physiotherapy methods and techniques and in other cognitive fields where this is possible, such as oncology, obstetrics, geriatrics, sports medicine, etc.
- Develop the perception of respect for the individuality of each patient as well as the importance of his active participation.
- Develop the ability to manage and communicate well with patients and other health scientists

General Skills

- Analysis and synthesis of data and information
- Decision making
- Design and management of physiotherapy interventions
- Digital skills
- Communication skills

(3) COURSE CONTENT

- Clinical applications of the main and most frequent nosological entities that need physiotherapy intervention.
- Keeping and assessing medical records
- Training in the use of mobility aids
- Designing and re-assessing tailored rehabilitation programs

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

DELIVERY METHOD	Large Nursing, public and private organizations that ensure the cyclical education of students in the basic cognitive fields of Physiotherapy, such as Musculoskeletal, Neurological, Respiratory and Cardiovascular	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Communication with students (e-class)	
TEACHING ORGANIZATION	***Activity***	***Semester Workload***
	Educational visits	
	Clinical Placement	

	Individual project	
	Total	704
STUDENT EVALUATION	The course is evaluated by the Clinical Placement committee based on: 1. the recording by the student of his/her educational clinical work (30%) 2. the written evaluation of the student by the person in charge of the host institution (30%) 3. the writing of a pilot clinical or case study (40%)	

(5) SUGGESTED READING

The suggested Bibliography of the specialty courses of the Department of Physiotherapy

ELECTIVE MODULES GROUP A FALL SEMESTER

MODULE OUTLINE OF 'BIOPHYSICS'

(1)GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-ΕΑ10	**Semester**	FALL
Module Title	Biophysics		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Theory (Lectures)	3	**3**
Workshops		
Total	3	**3**

Module Type	Elective Module
Pre-Required Modules	
Teaching and Examination Language	Greek
Suitable for ERASMUS students	Yes (English)
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes - General Competences

This module aims (a) to provide basic knowledge of physics with focused interest in biological systems, which knowledge is essential for the understanding and interpretation of basic biological and physiological mechanisms of the human body, b) to provide specialized knowledge of physics, upon which current therapeutic and diagnostic methods are based with application in Medicine and Physiotherapy, and c) to familiarize the student with current medical technology and rational way of thinking, which allows for the better evaluation of magnitudes and quantities through simple calculations who derive from measures, examples of applications and exercises in calculations.
After completing the module, the students should be able to:

- Exhibit basic theoretical knowledge of biophysics regarding the application of the subject in Medical Physics issues.
- Understand the functional mechanisms of current technologies, methods and applications in general that are used (or are about to be introduced) in physiotherapeutic research and clinical practice.

General Competences

- Analysis and synthesis of data and information
- Independent work
- Teamwork
- Work in an interdisciplinary environment
- Design and management of physiotherapeutic interventions

(3)MODULE CONTENT

- Introduction to the module
- Biophysics of thermotherapy and cryotherapy
- Biophysics of diathermy
- Biophysics of Phototherapy
- Biophysics of ultrasound and ESWT
- Basic principles of electricity
- Biophysics of electrical stimulation
- Biophysics of iontophoresis and Biofeedback
- Hydrotherapy
- Work and power in the human body.
- Biomechanics: Muscles and forces in the human body. Examples of applications. Exercises.
- Physics of the human skeleton. Structure, composition and strength of bones.
- Biodynamics. Stimulation of nerves and muscles.
- Revision

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform	
TEACHING ORGANIZATION	**Activity**	**Semester Workload**
	Lectures	90
	Total	90
STUDENT ASSESSMENT	Final written examination (100%).	

(5) SUGGESTED READING

- *Suggested Reading:*
  - *ΘΕΡΑΠΕΥΤΙΚΑ ΗΛΕΚΤΡΟΦΥΣΙΚΑ ΜΕΣΑ.ΒΙΟΦΥΣΙΚΗ ΚΑΙ ΕΦΑΡΜΟΓΗ ΤΟΥΣ, Alain Y. Belanger*
  - *Φυσική για τις Επιστήμες Ζωής, Newman Jay*
  - *ΒΙΟΦΥΣΙΚΗ, Kensal Van Holde, W. Curtis Johnson, P. Shing Ho*
  - *ΚΛΙΝΙΚΗ ΜΑΓΝΗΤΙΚΗ ΤΟΜΟΓΡΑΦΙΑ, PETER REIMER*
  - *Ηλεκτροθεραπεία, Watson T.*
  - *Γεωργίου Ε. Ιατρική Φυσική. Αθήνα: Εκδόσεις ΠΧ Πασχαλίδης, 2008.*
  - *Προυκάκης Χ. Ιατρική Φυσική, Τόμοι Α',Β' και Γ'. Αθήνα: Επιστημονικές Εκδόσεις Παρισιάνου ΑΕ, 2004.*
  - *Σιανούδης Ι. Βιοφυσική: Θέματα Ιατρικής Φυσικής. Αθήνα: Εκδόσεις Λύχνος, 2008.*
  - *Τζαφλίδου Μ. Ιατρική Φυσική, Βιοηλεκτρισμός, Οπτική, Θερμότητα-Ψύχος. Αθήνα: Εκδόσεις Gutenberg, 2010.*
  - *Ψαράκου Κ, et al. Ιατρική Φυσική, Τόμος 2ος. Θεσσαλονίκη: Εκδόσεις University Press, 2010.*
  - *Cameron JR, Skofronick JD, Grant RM. Φυσική του Ανθρωπίνου Σώματος. Αθήνα: Επιστημονικές Εκδόσεις ΓΚ*
  - *Παρισιάνου ΑΕ, 2002.*
  - *Davidovits D. Η Φυσική στη Βιολογία και την Ιατρική. Αθήνα: Επιστημονικές Εκδόσεις Παρισιάνου ΑΕ, 2013.*
  - *Herman Ι. Φυσική ιατρική του ανθρωπίνου σώματος. Αθήνα: Εκδόσεις ΠΧ Πασχαλίδης, 2009.*
  - *Young HD, Freedman RA. Πανεπιστημιακή Φυσική, Τόμοι Α', Β', Γ'. Αθήνα: Εκδόσεις Παπαζήση, 2010.*

MODULE OUTLINE OF 'PEDIATRICS'

(1)GENERAL

SCHOOL	SCHOOL OF HEALTH AND CARE SCIENCES		
DEPARTMENT	PHYSIOTHERAPY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	**Π2-ΕΑ20**	**ΕΞΑΜΗΝΟ ΣΠΟΥΔΩΝ**	**FALL**
COURSE TITLE	PAEDIATRICS		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
Theory - Interactive lectures	3	3
Total	3	3

COURSE TYPE	Elective
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	Greek
IS THE COURSE OFFERED TO ERASMUS STUDENTS	Yes (English)
COURSE WEBSITE (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes
General Pediatrics and its specialties require intensive and lifelong training both in clinical and research terms, due to the rapid progress of science and technology. The content of the elective compulsory course in **Paediatrics** has been structured taking into account a number of teaching and learning theories, such as Adult Learning, Problem Based Learning, Evidence Based Medical Practice and Student-centered Teaching.

The teaching methods and course contents have been designed based on the needs of the students of the Department of Physiotherapy, emphasizing on diseases of the respiratory, nervous and musculoskeletal systems, rheumatic, metabolic and genetic diseases. The training programme will be competitive, ensuring quality and with an active role of the students.

Upon completion of the course, students will:

- **i.** Be able to implement Personal Protective Equipment, and Measures.
- **ii.** Acquire the established and evolving knowledge of Clinical and Laboratory Pediatrics and familiarize with the needs and specialties of a pediatric patient.
- **iii.** Become familiar with the normal neonate, infant, toddler, child and adolescent, their physical, and psychomotor development, and will be able to recognize possible abnormalities.
- **iv.** Be educated in the recognition and evidenced-based therapeutic approach of various pathological conditions, system by system, understanding the necessity of a holistic and individualized therapy.
- **v.** Be able to take a correct and comprehensive history, which is sometimes sufficient to establish the diagnosis.
- **vi.** Be educated in the necessity of early disease diagnosis and prevention.
- **vii.** Be able to recognize particular cases of possible child abuse.
- **viii.** Be trained in the clinical application of digital health transformation, and apply new technologies in solving clinical problems, conducting scientific research and generating new knowledge.
- **ix.** Be instructed to pursue lifelong learning, knowledge and skill development, due to the continuous evolution of medicine and technology
- **x.** Be educated to work in accordance with the basic principles of ethics and bioethics of the Physical Therapy Profession, with responsibility, conscientiousness, consistency, confidentiality and empathy for their patient.
- **xi.** Adopt a patient-centred approach, respecting diversity and interculturalism.

General Competence

The course aims at the following general competences

- - Analysis and synthesis of data and information
- - Collaboration with the interdisciplinary team
- - Autonomous work
- - Group work

(3) CONTENT OF THE COURSE

History taking and clinical examination of pediatric patients, depending on the age-relevant characteristics and development (neonate, infant, toddler, child, adolescent).

Clinical application of digital health transformation

Telehealth services that leverage technology to provide remote patient education and can be delivered via a variety of methods, such as telecommunications, remote patient monitoring tools, e.g. wearables, live video chatting, electronic records transmission, mobile health-m Health apps and evidence-based therapeutic platforms (DigitalTherapeutics-DTx)

Development and milestones of psychomotor development in children-Behavioural disorders in childhood

- Body weight, length, head circumference curves.
- Disorders of longitudinal growth and head growth (low stature, high stature, microcephaly, hydrocephalus).
- Psychomotor development-control at milestone ages.
- Common developmental problems of childhood.
- Early detection of behavioural disorders.

Preventive and social pediatrics - Vaccines - Vaccination schedule

- Social paediatrics – Abuse, and neglect - Care of a child with a chronic health problem - Adolescent problems.
- Accident prevention in children.
- Poisoning
- Vaccines included in the National Vaccination Programme
- New vaccines, side effects of vaccines, vaccination in special groups

Clinical genetics

- Congenital disorders
- Chromosomal abnormalities
- Genetic counseling - prenatal testing.
- Inherited metabolic diseases-connective tissue disorders

Neonatal conditions

- Neonatal Screening
- Intrauterine growth restriction -intrauterine and neonatal insults
- Common birth injury
- Complications of Prematurity (perinatal asphyxia, cerebral hemorrhage, periventricular leukomalacia, cerebral palsy, hypotonia, respiratory distress syndrome, bronchopulmonary dysplasia, neonatal jaundice).
- Congenital and perinatal infections
- Essential newborn care
- Sudden infant death syndrome - guidelines for prevention.

Nutrition in each age group and nutritional disorders

- Breastfeeding -Benefits of breastfeeding for the newborn/infant and the mother.
- Infant Feeding-Weaning
- Nutritional needs of children and adolescents.
- Vitamin and trace element deficiencies.
- Feeding disorders-obesity, anorexia, malnutrition

Common childhood infections

- Upper and lower respiratory tract infections (tonsillitis, otitis, laryngitis, epiglottitis, bronchiolitis, community pneumonia).
- Tuberculosis
- Meningitis-encephalitis
- Urinary tract infections
- Gastroenteritis (infectious, viral, parasitic)
- Infectious arthritis-Osteomyelitis
- Exanthematous diseases of childhood
- Prolonged fever-Fever of unknown origin
- SARS-CoV-2 in childhood: Respiratory and cardiovascular complications in the acute phase-Long COVID-19 Clinical management of long-term complications.

Respiratory system diseases in childhood

- Clinical and laboratory assessment of the respiratory system.
- Chest wall deformities and respiratory dysfunction
- Upper and lower respiratory airway obstruction diseases (laryngomalacia, tracheomalacia, vocal cord paralysis, congenital diaphragmatic hernia).
- Asthma
- Cystic fibrosis
- Apnoea
- Pneumothorax
- Pleural effusion
- Cough
- Atelectasis
- Neuromuscular diseases and respiratory dysfunction

Cardiovascular diseases in childhood

- Clinical and laboratory assessment of the cardiovascular system in children
- Signs of heart diseases in children
- Major congenital heart diseases - cyanosis
- Valvular diseases

- Infectious endocarditis
- Rheumatic fever
- Myocarditis
- Pericarditis-pericardial effusion
- Cardiomyopathies
- Arterial hypertension in childhood
- Heart failure
- Kawasaki disease
- Arrhythmias

Common gastrointestinal disorders in children

- Vomiting - Gastroesophageal reflux disease
- Gastritis-Peptic ulcer
- Malabsorption syndromes (celiac disease, idiopathic inflammatory bowel diseases, lactase deficiency).
- Intussusception
- Acute and chronic abdominal pain in children
- Acute appendicitis
- Inguinal hernia.
- Diarrhea - Constipation
- Gastrointestinal bleeding
- Acute viral hepatitis
- Chronic hepatitis
- Jaundice
- Drug-induced hepatitis
- Wilson's disease
- Cholelithiasis - Cholecystitis
- Acute - chronic pancreatitis, pancreatic insufficiency

Endocrine disorders of childhood

- Thyroid function disorders: Hypothyroidism, hyperthyroidism, goiter
- Parathyroid gland disorders: hypoparathyroidism; hyperparathyroidism; calcium and vitamin D disorders; rickets.
- Hypothalamic-pituitary disorders: diabetes mellitus; excessive secretion of antidiuretic hormone; short and tall stature; growth hormone disorders; pituitary insufficiency.
- Physiology of puberty - Adolescence disorders (precocious puberty, delayed puberty) .
- - Adrenal disorders: congenital adrenal hyperplasia; adrenal insufficiency; Cushing's syndrome
- - Diabetes mellitus-hypoglycemia

Common Neurological Diseases in children

- Neurological history and clinical examination, neonatal reflexes
- Approach to a child with weakness and hypotonia.
- Congenital Dysplasias of the Central Nervous System
- Postural and gait disorders (ataxia, tremor, tremor, chorea, atrophy, dystonia, tics)
- Cerebral palsy
- Seizures, epilepsy
- Headaches - childhood migraine
- Coma
- Multiple sclerosis
- Neuromuscular diseases (spinal muscular atrophy, myasthenia, myopathies, Guillain--Barré syndrome, dystrophinopathies)

Haematological diseases in childhood

- Iron deficiency anaemia-Megaloblastic anaemia -Childhood anaemias
- Haemolytic anaemias
- Disorders in haemoglobin biosynthesis - Thalassaemias, sickle cell anaemia
- Disorders of Hemostasis (thrombocytopenia, platelet dysfunction, haemophilia, von Wilebrand's disease)
- Malignant diseases (leukaemias/lymphomas, bone marrow transplantation, solid organ tumours).

Diseases of the Genitourinary System

- Congenital Disorders of the Urinary Tract
- Glomerulonephritis - Nephrotic syndrome
- - Haematuria – Albuminuria
- Vesicoureteral reflux (VUR)
- Nephrolithiasis in childhood
- Acute and chronic renal failure
- Enuresis

Common Orthopaedic Problems and Rheumatological Diseases

- -Congenital dislocation of the hip
- -Knee Valgus and. Varus
- -Torticollis
- Scoliosis, kyphosis
- Back pain
- Transient synovitis of the hip
- Slipped upper femoral epiphysis

- Legg-Calve-Perthes disease
- Baker's cyst
- Osgood-Schlatter disease
- Anisomelia -Limb Length Discrepancy
- Sports injuries
- Evaluation of Rheumatic Diseases
- Vasculitis - Henoch-Schönlein's purpura
- Juvenile Idiopathic Arthritis
- Reactive Arthritis
- Rheumatic fever
- Systemic lupus erythematosus
- Juvenile dermatomyositis
- Chronic Musculoskeletal Pain

Allergies

- Mechanisms and diagnosis
- Rhinitis, rhinosinusitis
- Food allergies
- Anaphylaxis
- Urticaria, Angioedema
- Drug allergies
- - Atopic dermatitis

(4)TEACHING and LEARNING METHODS - EVALUATION

DELIVERY	**Face-to-face**
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	Yes Electronic communication with the students using ICT (Information and Communications Technology) Computer-aided lectures, use of Overhead Projectors, Eclass platform
TEACHING METHODS	

Activity	*Semester workload*
InteractiveTeaching	90
Sum	90

STUDENT PERFORMANCE EVALUATION

- Final written exams in Greek (70%) multiple choice questionnaires
- Essay/reportn(30%)

(5)SUGGESTED READING

- *Ματσανιώτης Ν, Καρπάθιος Θ, Νικολαϊδου-Καρπαθίου. «Επίτομη Παιδιατρική». Ιατρικές Εκδόσεις Λίτσας, 2011. ISBN 9789603721420.*
- *Karen J. Marcdante, Robert M. Kliegman. «NELSON Βασική Παιδιατρική». POTONTA, 2017. ISBN 9789606894848.*
- *Lissauer T, Clayden G. «Σύγχρονη Παιδιατρική». BROKEN HILL PUBLISHERS LTD, 2012. ISBN 9789963716098.*
- *Simon Attard-Montalto, Vaskar Saha. «ΠΑΙΔΙΑΤΡΙΚΗ, MASTER MEDICINE», Εκδόσεις Παρισιάνου, 2015. ISBN 9789603947462.*
- *Φ. Κανακούδη -Τσακαλίδου, Φ. Παπαχρήστου, Β. Δρόσου- Αγακίδου, Δ. Ζαφειρίου «Βασική Παιδιατρική», University Studio Press, 2020. ISBN 978-960-12-2578-4.Stiller K. Safety issues that should be considered when mobilizing critically ill patients. Critical Care Clin. 2007; 23:35-37.*

- Journals:

1. JAMA Pediatrics
2. Lancet Child and Adolescent Health
3. Pediatrics
4. Journal of adolescent health
5. BMC Pediatrics
6. Journal of pediatrics
7. UpTo Date
8. *Pediatric Physical Therapy*

MODULE OUTLINE OF 'RHEUMATOLOGY'

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	GRADUATE		
MODULE CODE	Π2-ΕΑ30	SEMESTER	FALL
MODULE TITLE	RHEUMATOLOGY		
INDEPENDENT TEACHING ACTIVITIES		**WEEKLY TEACHING HOURS**	**ECTS**
Theory (lectures)		3	3
MODULE TYPE	Elective		
PRE-REQUIRED MODULES			
TEACHING AND EXAMINATION LANGUAGE	Greek		
MODULES SUITABLE for ERASMUS STUDENTS			
MODULE WEBPSITE (URL)			

(2) LEARNING OUTCOMES

Learning outcomes

The course provides knowledge and skills regarding interpretation, the definition, the classification, the comprehension and the characteristics of rheumatic diseases. The student will learn about the prevention, the current capabilities of the therapeutical interventions, the psychosocial impact and physical rehabilitation of rheumatic diseases.

The study aims to educate students about the comprehension of rheumatic diseases and their impact on patients and society. It aims at the development of an appropriate level of knowledge and skills for the diagnosis, prevention, therapy and rehabilitation of rheumatic diseases.

The objective is the comprehension of the magnitude of the problem the rheumatic diseases pose, at a national and international level, of the scientific approach to the content and to the classification of rheumatic diseases, of the symptoms and clinical signs, the impact, the prevention and the therapy and rehabilitation.

After the successful completion of the course, the student will be able to:

- Comprehend the risk factors, the biological and psychosocial parameters
- Have the scientific background for the prevention, diagnosis, therapy and rehabilitation
- Use tools and methods for the assessment of rheumatic diseases and for tracking the problem with the appropriate interventions.
- Operate independently, or in cooperation with other health professionals in the context of health services provision, diagnosis, therapy and rehabilitation of rheumatic diseases.

General competences

- Individual work
- Teamwork
- Work in a multi-disciplinary environment

- Development of new research ideas
- Project designing and managing
- Respect to multiculturalism and diversity

(3) MODULE CONTENT

- Definition and classification of rheumatic diseases. Epidemiology – public health.
- Basic principles of rheumatology – musculoskeletal health. Comorbidities. Clinical signs. Definition of arthritis.
- Basic principles of immunology. Autoimmunity. Meaning of inflammation and biological indices.
- Rheumatic diseases: The role of genes – immune system – hormones – environmental factors – diet – exercise – severity – infections.
- Rheumatoid arthritis.
- Seronegative arthritis. Angylosic spondyloarthritis. Psoriatic arthritis. Enteropathic arthritis.
- Connective tissue diseases. Systemic lupus erythematosus. Mixed connective tissue disease. Dermatomyositis – Polymyositis. Scleroderma. Sjogren syndrome.
- Vasculitis. Classification. Temporal (giant cell) arteritis. Rheumatic polymyalgia. Polyarteritis nodosa. Adamantiades-Behcet's disease.
- Gout. Osteoarthritis. Osteoporosis (FRAX assessment).
- Therapeutic options. The role of NSAIDs, corticoids, slow-acting antirheumatic, immunosuppressants, biologic factors.
- Joint and soft tissues block. Corticosteroids in inflammatory arthritis and regional pain. Hyaluronic injections. Stem cells and PRP blocks.
- Physical rehabilitation in rheumatoid diseases. Exercise and physiotherapy
- Psychosocial sequelae of rheumatoid and musculoskeletal diseases. Patient management.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence.
USE OF INFORMATION & COMMUNICATION TECHNOLOGY (ICT)	Open e-class platforms
TEACHING ORGANIZATION	

Activity	***Semester workload***
Lectures	90
Total	90

STUDENT ASSESSMENT	The course will be assessed with ✓ Final written examination which includes questions in the form of multiple choice questions, right/wrong questions, fill the blank questions and essay type questions (100%).

(5) SUGGESTED READING

Suggested reading

- *Χανιώτης Φ., Χανιώτης Δ. Νοσολογία-Παθολογία. Ιατρικές Εκδόσεις Λίτσας, 2011. (Εύδοξος: 12573696)*
- *Klippel J.,Dieppe P. Βασική κλινική ρευματολογία. Εκδόσεις Broken Hill Publishers LTD, 2005.*
- *Fauci A. S. Harrison's Ρευματολογία. Επιστημονικές Εκδόσεις ΠΑΡΙΣΙΑΝΟΥ Α.Ε., 2011*
- *Apley Graham ''Apley's System of Orthopaedics and Fractures''. 7th Edition Butterworth-Heinemann Ltd. 1993.*
- *Νικόλαος Ε. Ευσταθόπουλος. Αρθρίτιδες. Ιατρικές εκδόσεις Κωνσταντάρας. Αθήνα 2009..*
- *Γεώργιος Π. Λυρίτης «Μεταβολικά νοσήματα των οστών» 4η Έκδοση. Hylonome Editions, Αθήνα 2007.*
- *Mark D. MiLler, Jeniffer A. Hart, John M. Macknight. Βασική Ορθοπαιδική. Αθήνα: Ιατρικές εκδόσεις Πασχαλίδης, 2020.*

MODULE OUTLINE OF 'DIAGNOSTIC IMAGING'

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDEGRADUATE		
MODULE CODE	Π2-ΕΑ40	**SEMESTER**	**FALL**
MODULE TITLE	DIAGNOSTIC IMAGING		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Lectures - Practice	3	3
Total	3	3

MODULE TYPE	Elective
PRE-REQUIRED MODULES	
TEACHING AND EXAMINATION LANGUAGE	Greek
MODULE SUITABLE for ERASMUS STUDENTS	
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
The aim of the course is to present to the students the methods and the systems of Diagnostic Imaging (Chest X-ray, Computed Tomography, MRI), with emphasis on those that have applications in diseases associated with the specialty of Physiotherapy, as well as the possibilities for diagnosis and treatment implemented by the Diagnostic Departments. The aim of the lesson is to make sure that students have all the necessary knowledge to be able to evaluate the findings of imaging techniques after applying the physiotherapy protocols compared to the beginning of the programs.
General Competences - Learning Outcomes
• Individual work • Teamwork • Decision making • Searching, analyzing and composing of data and information using the appropriate technological means**.**

(3) MODULE CONTENT

The module content is as follows:

- X-rays:
  - ✓ evaluation of pulmonary parenchyma, both in terms of homogeneity (in the presence of shadows or clarifications)
  - ✓ evaluation of the position of the trachea, whether it is displaced right or left, and the position of the two main bronchi
  - ✓ evaluation of the width and contour of the heart and aorta, elements that suggest or reject the possibility of large heart, heart failure or aneurysms in large vessels such as the aorta
  - ✓ The evaluation of pulmonary parenchyma also includes the detection of evidence suggesting neoplasm / fluid / abscess
- Computed Tomography: Computed tomography can be either simple or using a CT contrast agent. Computed tomography gives a detailed record of the position and anatomy of the organs in the anatomical compartment (skull, thorax, abdomen) which is examined accordingly. Computed tomography features the same features as chest X-rays but with a much higher resolution, which increases even more when used with a contrast agent. Computed tomography does not diagnose in situ tumor neoplasia, therefore, the CT should be repeated every three months if the condition is present. Computed tomography examines the patient's progress after applying the physiotherapy protocol.
- Magnetic Resonance Imaging / MRI: Helps to enlarge the test organ and is the most reliable test both diagnosis and follow-up of the test organ following the application of any treatment, including physiotherapy protocols. A contrast agent is used to perform the magnetic resonance imaging.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platforms	
TEACHING ORGANIZATION	**Activity a**	**Semester workload**
	Lectures	90
	Course Total	90
STUDENT ASSESSMENT	Final written examination (70%) Practical part (30%)	

(5) SUGGESTED READING

Suggested Reading:

- *Greenstein B.Trounce's Κλινική φαρμακολογία για νοσηλευτές. Αθήνα: Εκδόσεις Παρισιάνου ΑΕ, 2007.*
- *Netter Άτλας Βασικών Ιατρικών Επιστημών, Φαρμακολογία. Αθήνα: Εκδόσεις Π.Χ Πασχαλίδη, 2008.*
- *Page C, Curtis M, Sutter M, Walker M, Hoffman B. Φαρμακολογία. Αθήνα:Εκδόσεις Π.Χ Πασχαλίδη, 2008.*
- *Simonsen T, Aarbakke J, Kay I, Coleman I, Sinott P, Lysaa R. Νοσηλευτική Φαρμακολογία. Αθήνα: Εκδόσεις Π.Χ Πασχαλίδη, 2009. Pitt-Brooke J, Reid H, Lockwood J, et al. Rehabilitation of movement. Theoretical basis of clinical practice. Philadelphia: W.B. Saunders Company, 1998.*
- *Ryf C, Weymann A. Εύρος κίνησης-ουδέτερη-ο-μέθοδος της Α.Ο. μέτρηση και τεκμηρίωση Αθήνα: Ιατρικές Εκδόσεις Π.Χ. Πασχαλίδης, 2004.*
- *Schoen J, Pearl L. Keep Calm and Stretch: 44 Stretching Exercises to Increase Flexibility Relieve Pain, Prevent Injury, and Stay Young! USA: Little Pearl Publishing, 2012.*
- *Snyder KT, Goodman C. Differential diagnosis in physical therapy. 4th Edition. Philadelphia: W.B. Saunders Company, 2007.*

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MODULE OUTLINE OF 'ENGLISH MEDICAL TERMINOLOGY'

(1) GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	ΠΦ2-ΕΑ50	**Semester**	**FALL**
Module Title	English Medical Terminology		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Lectures	2	
Workshops	1	
Total	3	3

Module Type	Elective Module
Pre-Required Modules:	
Teaching and Examination Language:	English
Suitable for ERASMUS students:	Yes
Module Website (URL)	

(2) LEARNING OUTCOMES

Learning outcomes
The aim of the course is the teaching of applied knowledge of the English language through exercises in specialised texts of anatomy, physiology, pathology, and related topics, for the training of physiotherapy students in the comprehension of scientific texts with medical – physiotherapeutic

terms. Thus, students are introduced to the terminology used in their field and familiarize themselves with the language used in authentic texts about their specialty. Upon completion of the course students will be able to:
-read and comprehend textbooks and research articles in the field of Physiotherapy
- be able to attend oral presentations and participate in subsequent discussions
- locate resources for further information in the field of their interest
-communicate with colleagues
-translate specialty physiotherapy texts

General Competences - Learning Outcomes

- Analysis and synthesis of data and information
- Independent work
- Teamwork

(3) **MODULE CONTENT**

- Introduction to Physiotherapy
- Chest Physiotherapy
- Cardiovascular Physiotherapy
- Neurological Physiotherapy
- Physiotherapy assessment
- Clinical reasoning
- Body plan
- Body regions and cavities
- Bone anatomy
- Functions of the skeletal system
- Joint injuries
- Osteoarthritis
- Vertebral column and skull
- Disorders of muscle tone and movement
- Nervous system
- Grammar and writing exercises

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

DELIVERY	Face to face
USE OF INFORMATION & COMMUNICATION TECHNOLOGY (ICT)	Open e-class platform
TEACHING ORGANIZATION	Lectures 70 Workshop 20

	Total	90	
STUDENT ASSESSMENT			Written final examination which Includes questionnaires that cover all the course material and are related to multiple-choice questions, selection, right-wrong, fill-in-the-blank and/or text development

(5)SUGGESTED READING

- *Betsy J. Shiland, Εξειδικευμένη Αγγλική Ορολογία Επιστημών Υγείας, Elsevier, 2019*
- *Dictionary of Medicine, Peter Collin Publishing,2000*
- *American Association of Cardiovascular and Pulmonary Rehabilitation. Guidelines for Pulmonary Rehabilitation Programs. Champaign,Illinois: Human Kinetics, 2011.*
- *Pryor JA, Prasad SA. Physiotherapy for respiratory and Cardiac Problems. Adults and Pediatrics. 4th Edition. Edinburgh: Churchill Livingstone, Elsevier, 2012.*
- *Elli Terzoglou ,Reviewing English Grammar ,third edition,2017*
- *Elli Terzoglou, Exercises to Reviewing English Grammar ,third edition, 2010*
- *Dorland's , Ιατρικό Λεξικό ,εκδόσεις Πασχαλίδη1997*
- *Αγγλοελληνικό Λεξικό Ιατρικών Όρων Μιχαηλίδη*

MODULE OUTLINE OF 'COMPUTING IN HEALTH SCIENCES'

(1) GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	**Π2-ΕΑ60**	**Semester**	**FALL**
Module Title	Computing in Health Sciences		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Lectures	3	
Total	3	3

Module Type	Elective
Pre-Required Modules:	
Teaching and Examination Language	Greek
Suitable for ERASMUS students:	Yes (English)
Module Website (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
The purpose of the course is to introduce students to Information Technology and Technology in Health Sciences, and their application in the field of health and in particular in Physiotherapy. In this context, basic concepts of the network and the Internet are presented as well as online bibliographic databases that are widely used to retrieve scientific medical knowledge. Reference is made to health information systems, coding standards and the exchange of medical information on these systems. The course will teach writing of scientific papers, oral

presentations of scientific works as well as the study and critique of scientific texts based on international data. Students who have completed the course will: • Have acquired knowledge of Computer Science and Technology in Health Sciences • Be able to identify modern technology and study systems • Be aware of the information systems used by health care providers. • Be able to understand, select and then apply the methods of writing and presenting • Be able to collect, interpret and synthesize evidence-based research results through clinical reasoning • Be able to identify short-term and long-term goals with international directives • Have acquired the necessary skills to adequately implement specific technology and bibliographic review systems

General Competences

- Analysis and synthesis of data and information
- Decision making
- Independent work
- Teamwork
- Design and management of information through Information Technology and Health Sciences

(3) MODULE CONTENT

- Introduction to the science of Information Technology
- Health Information Systems
- Electronic Health Record
- Information Coding in the Health Sector
- Information Systems Protection & Security
- Interoperability of Health Systems
- Image & Bio signal Processing & Analysis
- Management and Dissemination of Knowledge in the Health Sector General Data Protection Regulation (GDPR)
- Smart cards and health information systems
- Medical Devices and Computer Management of Biomedical Equipment

- Tele-medicine - Tele-rehabilitation
- Search in scientific and medical bibliographic databases,
- Learning to study and critique bibliographic references and specialized articles.

(4) TEACHING AND LEARNING METHODS – ASSESSMENT

Delivery	Face to Face
Use of Information and Communication Technology (ICT)	Open e-class platform

Teaching Organization Delivery Use of Information and Communication Technology (ICT)

Activity	*Semester Workload*
Lectures	90
Independent Learning	
Written assignments	
Total	90

Teaching Organization

The theory of the course is evaluated with

- ✓ Written final examination (70%) which includes questionnaires covering all the course material related to multiple choice, right-to-wrong questions, filling in the blanks and essay-type questions
- ✓ Teamwork presentation (30%)

(5) SUGGESTED READING

1. *Πουλής Γ., Μειμέτη Ε. Πληροφορική στην Υγεία Εκδόσεις Κωνσταντάρας ISBN 9789606080005*
2. *Venot A, Bugan A, Quantin C Η πληροφορικη στην Ιατρική -eHealth-Βασικές Αρχές και Εφαρμογές Διαθέτης (Εκδότης): BROKEN HILL PUBLISHERS LTD ISBN: 9789925575534*
3. *Καρανικόλας Ν. Πληροφορική και Επαγγέλματα Υγείας. Αθήνα: Εκδόσεις Νέων Τεχνολογιών, 2010.*
4. *Τόκης Ιωάννης και Τόκη Ευγενία, Πληροφορική υγείας, 1η έκδοση, 2006, Εκδόσεις Τζιόλα, ISBN: 960-418-107-6*
5. *Μπότσης Ταξιάρχης και Χαλκιώτης Στέλιος, Πληροφορική υγείας, 1η έκδοση, 2005, Εκδόσεις Δίαυλος, ISBN: 978- 960-531-183-4*
6. *Βλαχόπουλος Γ, Κλεπετσάνης Π. Εφαρμογές Πληροφορικής στις Επιστήμες Υγείας. Πάτρα: Εκδόσεις Αλγόριθμος,2012.*
7. *Κουμπούρος Ι. Τεχνολογίες Πληροφοριών και Επικοινωνίας & Κοινωνία. Αθήνα: Εκδόσεις Νέων Τεχνολογιών, 201*
8. *Akay M, Marsh A. Information Technologies in Medicine. NY: Wiley-IEEE Press, 2013.*
9. *Braunstein M. Health Informatics in the Cloud NY: Springer, 2012.*
10. *Donnelly WJ. Patient-centered medical care requires a patient-centered medical record. NY: Academic Medicine, Lippincot Williams & Wilkins, 2006.*

11. *Venot A, Burgun A, Quantin C (eds). Medical Informatics, e-Health, Fundamentals and Applications. NY: Springer, 2014.*

12. *Hoyt RE, Bailey N, Yoshihashi A (eds). Health Informatics: Practical Guide For Healthcare And Information Technology Professionals. 5th ed., Raleigh: Lulu, 2012.*

13. *Erl T, Puttini R, Mahmood Z. Cloud Computing: Concepts, Technology & Architecture. Westford: The Prentice Hall Service Technology Series, 2013.*

14. *Fong B, Fong A, Li C.Telemedicine Technologies: Information Technologies in Medicine and Telehealth. NY: John Wiley & Sons Ltd, 2010.*

15. *Tripathi M, Delano D, Lund B, Rudolph L. Engaging patients for health information exchange. Bethesda: Health AffAirs, 2009. Thomas RJ, Nelson KJ. Research methods in Physical Activity. 2nd Edition. Human Kinetics, USA, 1990.*

- Suggested Journal

- *Research Quarterly for Exercise and Sports*
- *Research technology Management*
- *Telemedicine Journal and E-Health*
- *Telecommunication Policy*
- *Telecommunication Systems*

ELECTIVE MODULES GROUP B EASTER SEMESTER

MODULE OUTLINE OF 'PRINCIPLES OF HEALTH MANAGEMENT '

(1) GENERAL

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-ΕΒ10	**Semester**	**EASTER**
Module Title	PRINCIPLES OF HEALTH MANAGEMENT		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
THEORY: Interactive Lectures - practice	3	3
Total	3	3

Module Type	Elective
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	
Module Website (URL)	

(2)LEARNING OUTCOMES

Learning Outcomes

The Principle of the Health Management course is the introduction to the education of students in matters related to the written and "unwritten" laws-principles on the basis of which small and large businesses in the Health sector operate and are managed in Greece. Students are taught the role and contribution of administrative science in the field of health and the relationship of the health scientist with other professionals in his work environment. The specialized modules that make up the teaching material of the course are mainly focused on:

a) in the understanding of the historical path of the concept of Management and Entrepreneurship during the evolution of humanity,

b) in the perception of the basic principles of Administration

c) in the recognition of the basic Management Models of Individual or Small Businesses in general

d) in the recognition of the basic Management Models in the Health Area

e) in the perception of the basic principles of Vertical and Horizontal structure of a Health Human Resources Organization

f) analysis of key contemporary concerns in Entrepreneurship, performance and feasibility of Health Services in the Public and Private sector

g) in the understanding of basic Principles of financial management

h) in the understanding of the basic Principles of Ethics of advertising and promotion in the field of Health and applications in Physiotherapy

i) entrepreneurship in Physiotherapy - legislation

In this way, students will be able to understand the value of Administrative science in the correct, efficient and productive qualitative development in the field of Health. It will be possible to understand the importance of the proper operation of a Health service both in relation to the offer of services and the decision-making concerning employees. Particular importance is given to the investigation of the modern perception and the established position of the physical therapist in the multi-purpose health service centers, in primary health care and in his participation in interdisciplinary working groups.

After successful completion of the course, the student will be able to:

- Understand the basic concepts of Administration
- Knows the importance of this science in the practice of the profession
- Acquire the skills to participate in business plans
- Has the ability to analyze simple concepts of economic content related to the field of health
- Has the ability to collaborate with his/her fellow students to analyze and present complex issues related to interdisciplinary collaboration

General Competences
• Analysis and synthesis of data and information •Decision making •Individual work •Teamwork • Design and management of physiotherapeutic interventions

(3) MODULE CONTENT

- HISTORICAL REVIEW OF ADMINISTRATIVE SCIENCE IN THE FIELD OF HEALTH
- BASIC MANAGEMENT MODELS
- STRATEGIC MANAGEMENT AND PHYSICAL THERAPY
- ANALYSIS OF VERTICAL AND HORIZONTAL STRUCTURE OF ORGANIZATIONS
- FACTORS AFFECTING ADMINISTRATION
- APPLICATIONS IN THE FIELD OF HEALTH - HEALTH SYSTEMS
- COMMUNICATION – PUBLIC RELATIONS
- HUMAN RESOURCES
- THREE LEVELS OF HEALTHCARE – THE ROLE OF PHYSICAL THERAPY
- INDIVIDUAL AND SMALL BUSINESSES OF HEALTH SERVICES SPECIALIZING IN PHYSICAL THERAPY
- LARGE BUSINESS MODEL ORGANIZATIONS PUBLIC AND PRIVATE SECTOR
- CHANGE MANAGEMENT AND ORGANIZATIONAL DEVELOPMENT AND CULTURE IN HEALTH SERVICES
- BASIC PRINCIPLES OF FINANCIAL MANAGEMENT - ACCOUNTING MODELS
- SATISFACTION OF EMPLOYEES IN THE HEALTH FIELD
- SATISFACTION OF USERS OF HEALTH SERVICES
- QUALITY IN THE HEALTH PROFESSIONS
- INTERSCIENTIFIC COOPERATION-PROTOCOLS
- LEGALLY REGISTERED WORKPLACES - PHYSICAL THERAPISTS.

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

Delivery	Face to Face	
Use of Information and Communication Technology (ICT)	Open e-class platform	
Teaching Organization	**Activity**	**Semester Workload**
	Lectures	90
	Group work in the analysis of issues of administrative science and the study of legislation	
	Small individual tasks to understand topics in the field of health with a specialization in physical therapy	
	Total	**90**

Student Assessment	The course is evaluated with - Presentation of group work (30%) and - written final exam (70%) which includes the administration of questionnaires that cover all the material of the course and concern multiple choice, true-false questions, filling in the blanks and text development

(5)SUGGESTED READING

Suggested Reading:

1. . Ν. Πολύζος Πολιτική υγείας και Διοίκηση υπηρεσιών υγείας, ΚΡΙΤΙΚΗ, εκδόσεις ΑΕ,2024
2. Ν. Πολύζος Διοίκηση και Οργάνωση Υπηρεσιών υγείας, ΚΡΙΤΙΚΗ, εκδόσεις ΑΕ, 2014
3. Σ.Σούλης, Σχεδιασμός υπηρεσιών υγείας και κοινωνικής προστασίας, Παπαζήσης εκδ. 2015

- *RELATIVE JOURNALS*

- Journal of Health Management
- HealthManagement Journal Library
- Journal of Healthcare Management

MODULE OUTLINE OF BIOSTATISTICS

(1) GENERAL

FACULTY	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPARTMENT	PHYSIOTHERAPY		
STUDY LEVEL	UNDERGRADUATE		
MODULE CODE	Π2-ΕΒ20	**SEMESTER**	EASTER
MODULE TITLE	BIOSTATISTICS		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
THEORY: Lectures	3	3
Total	3	3

MODULE TYPE	ELECTIVE
PRE-REQUIRED MODULES:	
TEACHING AND EXAMINATION LANGUAGE:	GREEK
SUITABLE FOR ERASMUS STUDENTS	NO
MODULE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning Outcomes
The aim of the course is to familiarize students with the basic principles and methods of Biostatistics, both at a theoretical level and at an applied level through the use of SPSS. Upon completion of this course, the students will be able to: • Recognize how the science of Biostatistics is applied and how it contributes to advances in Physiotherapy, • Understand the terms “Research”, “Probability”, “Randomness”, “Population”, “Census”, “Sampling Frame”, “Sample”, “Sampling Error” and define the specific terms,

- Understand both the concept and the nature of “Variables”, recognize and distinguish different types of variables,
- Choose, in relation to the type of variables, the appropriate method of analysis,
- Analyze data using SPSS,
- Interpret and evaluate the results of statistical analyses,
- Discuss and write the results and conclusions that arise from their statistical analyses

General Competences - Learning Outcomes

- Data search,
- Analysis and synthesis of data using necessary statistical technologies,
- Critical thinking

(3) MODULE CONTENT

- The Role of Biostatistics,
- Basic Concepts, Types of Data,
- Summary Statistics,
- Graphs,
- Theoretical Probability Distributions,
- Sampling Distribution of the Mean,
- Confidence Intervals,
- Hypothesis Testing,
- Comparison of Two Means,
- Analysis of Variance,
- Correlation,
- Linear Regression,
- Inference on Proportions,
- Contingency Tables,
- Logistic Regression,
- Sampling Theory

(4) TEACHING AND LEARNING METHODS-ASSESSMENT

DELIVERY	In Person	
USE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)-SOFTWARE	• e-class platform • SPSS	
TEACHING ORGANIZATION	**ACTIVITY**	**SEMESTER WORKLOAD**

	Lecture hours	90
	Self Study (hours)	
	Total	**90**
STUDENT ASSESSMENT	Final written examination (100%)	

(5) SUGGESTED READING

Suggested Reading:

Armitage P., Berry G., Matthews J.N.S. 2002. Statistical Methods in Medical Research. Wiley-Blackwell, Oxford

Pagano M., Gauvreau K., Mattie H. 2022. Principles of Biostatistics. Chapman and Hall, London

Παπαγεωργίου Ε. 2022. Πιθανότητες-Βιοστατιστική και Εφαρμογές με το SPSS. Εκδόσεις Νέων Τεχνολογιών, Αθήνα

Petrie A., Sabin C. 2016. Ιατρική Στατιστική με Μια Ματιά. Επιστημονικές Εκδόσεις Παρισιάνου (Μετάφραση Τζώνου Α.), Αθήνα

Rosner B. 2015. Fundamentals of Biostatistics. Cengage, Boston

Triola M.M., Triola M.F., Roy J. 2021. Βιοστατιστική των Επιστημών Βιολογίας και Υγείας. Εκδόσεις Π.Χ. Πασχαλίδης-Broken Hill Publishers Ltd., Λευκωσία

Related Scientific Journals:

Biometrika

Biostatistics

Journal of the American Statistical Association

Journal of the Royal Statistical Society

Statistics in Medicine

Websites:

https://www.who.int/data/collections

https://ec.europa.eu/eurostat

https://stats.oecd.org

https://data.worldbank.org

https://webgate.ec.europa.eu/dyna/echi/

https://www.statistics.gr

MODULE OUTLINE OF 'PHARMACOLOGY'

(1) GENERAL

Faculty	Faculty of Health & Caring Sciences		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-ΕΒ30	**Semester**	EASTER
Module Title	Pharmacology		
Independent Teaching Activities		**Weekly Teaching Hours**	**ECTS**
	Theory (Lectures)	3	**3**
Module Type	Elective Module		
Pre-Required Modules			
Teaching and Examination Language	Greek		
Suitable for ERASMUS students			
Module Website (URL)			

(2) LEARNING OUTCOMES

Learning Outcomes
The purpose of the module is for students to understand the functions of drugs in relation to the corresponding, per system, physiological mechanisms of the human body, emphasizing both the mechanisms of drug action for the specific system and the interactions of the drug with the other body systems. In particular, the teaching of pharmacology should aim at: (a) knowledge of the pharmacokinetics and pharmacodynamics of the drug; (b) mechanisms of absorption and excretion of the drug by the body; (c) interactions with other drugs; (d) adverse effects and their management; (e) indications with the dosages and contraindications of the drug administration. After having successfully completed the module, students will be able to: • Know the indicated drug administered depending on the patient's disease and clinical condition • Know how to manage any complications associated with the aberrations that will occur in their respective physiological mechanisms.
General Competences
• Independent work • Group work • Decision making • Analysis and synthesis of data and information, using necessary technologies

(3) MODULE CONTENT

The course content includes the following systems of the human body: Musculoskeletal, Nervous, Circulatory, Respiratory, Urinary and Reproductive, Digestive, Blood, Endocrine glands. The teaching of each system is based firstly by a brief, but precise, description of the physiology mechanisms of each system, which are essential for understanding absorption, action, excretion, and interaction with other concomitantly administered medications.

Pharmacokinetics, Pharmacodynamics, interactions with other medications, indications and contraindications as well as the management of the complications that may arise from the administration of the drug are analyzed and examined in detail for each system. The goal of teaching is directly related to both the content of the module and the potential to put into practice the knowledge required to be gained. For each specific body system, following the teaching of Pharmacology and the evaluation of the students' necessary knowledge, the students should be able to know the drug selected according to the present disease in order to achieve the following: 1) Musculoskeletal System: Improving and treating of muscle contraction mechanism and enhancement of bone tissue in order to avoid imminent muscle injury and/or bone fracture; 2) Nervous System: ensuring functionality of the remaining normal neural tissue by focusing on the pharmacology of nerve and neuromuscular synapses and ensuring nerve cell nutrition; 3) Circulatory System: improving and treating microcirculation of tissues at capillary level, improving myocardial function including the present pathological conditions such as ischemia, arrhythmias and infarction, treating and preventing of pathological conditions vessel wall and endothelial; 4) Respiratory system: improving and treating of respiratory gas exchange in connection with improved muscle function, preventing and treating of respiratory infections and occupational respiratory diseases, treatment of bronchial / allergic asthma, medication of obstructive and restrictive lung diseases; 5) Urinary and reproductive system: improving

and treating of pathological conditions such as acute and chronic renal failure, urinary tract infections, and all diseases of the urinary and reproductive system requiring treatment, conservative or surgical in relation to maintaining their functioning; 6) Blood: treating and improving of anemia and hematopoietic neoplasms which adversely affect tissue oxygenation and the application of therapeutic physiotherapeutic protocols; 7) Endocrine glands: improving and treating of chronic metabolic diseases to be considered in the application of physiotherapeutic protocols.

(4) TEACHING AND LEARNING METHODS - ASSESSMENT

DELIVERY	Physical presence	
USE OF INFORMATION and COMMUNICATIONS TECHNOLOGY (ICT)	Open e-class platform	
TEACHING ORGANIZATION	**Activity**	**Semester Workload**
	Lectures	90
	Total	90
STUDENT ASSESSMENT	Final written examination (100%) of all module content.	

(5) SUGGESTED READING

- *Suggested Reading:*
  - *Greenstein B.Trounce's Κλινική φαρμακολογία για νοσηλευτές. Αθήνα: Εκδόσεις Παρισιάνου ΑΕ, 2007.*
  - *Netter Άτλας Βασικών Ιατρικών Επιστημών, Φαρμακολογία. Αθήνα: Εκδόσεις Π.Χ Πασχαλίδη, 2008.*
  - *Page C, Curtis M, Sutter M, Walker M, Hoffman B. Φαρμακολογία. Αθήνα:Εκδόσεις Π.Χ Πασχαλίδη, 2008.*
  - *Simonsen T, Aarbakke J, Kay I, Coleman I, Sinott P, Lysaa R. Νοσηλευτική Φαρμακολογία. Αθήνα: Εκδόσεις Π.Χ Πασχαλίδη, 2009*

MODULE DESCRIPTION OF DISSERTATION

1) General

Faculty	Faculty of Health & Caring Professions		
Department	Physiotherapy		
Study Level	Undergraduate		
Module Code	Π2-8020A	**Semester**	**8th**
Module Title	Dissertation		

Independent Teaching Activities	**Weekly Teaching Hours**	**ECTS**
Total	3	7

Module Type	Elective
Pre-Required Modules:	
Teaching and Examination Language:	Greek
Suitable for ERASMUS students:	Yes (English)
Module Website (URL)	http://www.phys.uniwa.gr/undergraduate-studies/

(2) Learning Outcomes

Learning Outcomes
. Upon successful completion of the dissertation the student will be able to: • Understand the subject area on which his / her work will be based

- To develop the ability to search the literature in a broad context initially and in a more specific context later, in order to have the knowledge that will enable him to fully understand the subject and to create those research questions that interest him.
- Develop the key skills in designing and organizing a scientific study
- Develop the ability to interpret the results of the literature and to classify them according to their relevance and content
- Develop the ability to organize the design of a study and apply it
- Develop the ability to write the results of an observation or experimental study and to transfer them scientifically in writing
- Develop the ability to interpret the results of his studies and to describe them appropriately in a scientific way.
- Develop the concept of respect for the principles of sound scientific research and study and be able to apply them
- Develop the ability to manage and communicate with patients and other health scientists in the case of experimental studies or related research requirements
- Respect and work within the concept of Research Ethics in scientific study design
- Obtain competence in management of personal and digital data related to their study and being sensitized in the protection of personal and medical confidentiality
- Obtain communication skills with patients and other health professionals when conducting experimental studies

General Competences

- Search, analyze and synthesize data and information, using the necessary technologies
- Independent work
- Teamwork
- Working in an interdisciplinary environment
- Production of new research ideas
- Promoting free, creative and inductive thinking
- Project planning and management

(3) Module Content

- As defined in the relevant dissertation guide

(4) Teaching and Learning Methods – Assessment

Delivery	Face to Face and autonomous work and / or teamwork depending on the subject of the study
Use of Information and Communication Technology (ICT)	**Use of e-class facilities and network communication** **Use of interactive internet platforms (MS Teams)**
Teaching Organization	***Activity*** / ***Semester Workload*** Dissertation Writing / 196 / Total / 196
Student Assessment	• The module is evaluated by the 3-member Graduate Dissertation Committee (the supervisor and 2 other Lecturers/ Professors the Department) based on the rules set in the dissertation guide (100%) • For all dissertations control for potential plagiarism with the use of special software is required - The assessment process includes: A) assessment of the written manuscript B) open public presentation. It includes a 10min presentation and a 15min assessment of the Committee C) the defense of the dissertation The assessment criteria are described in the Dissertation Guide

(5) Suggested Reading

- *Suggested Reading :*

  - *Barbara Gadtel. How to Write and Publish a Scientific Paper, 8th Edition, 8th ed. 2017*
  - *Thomas A. Lang. How to Write, Publish, and Present in the Health Sciences: A Guide for Physicians and Laboratory Researchers, 1st ed., 2018 02.*

MODULE OF ADVANCED PHYSIOTHERAPY

(1) GENERAL

SCHOOL	FACULTY OF HEALTH AND CARING PROFESSIONS		
DEPTARTURE	PHYSIOTHERAPY		
LEVEL OF STUDY	UNDERGRADUATE		
MODULE CODE	**П2-8020Β**	**SEMESTER**	**8TH**
MODULE TITLE	ADVANCED PHYSIOTHERAPY		

LEARNING ACTIVITIES	**HOURS PER WEEK**	**ECTS**
Theory	3	7

MODULE TYPE	Elective
PRE-REQUIRED MODULES	----------
TEACHING AND EXAMINATION LANGUAGE:	Greek
SUITABLE for ERASMUS ERASMUS STUDENTS	Yes
MODULE WEBSITE (URL)	

(2)LEARNING OUTCOMES

The aims of this module are for students to acquire specialized knowledge related to various aspects of Physiotherapy, with an emphasis on the assessment and design of advanced physiotherapeutic interventions for patients with multiple needs. Students will be encouraged to critically evaluate the effectiveness of innovative clinical interventions. Also, with the current module students will strengthen their research interest and support their continuous professional development as future physiotherapists in clinical practice.

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

- Acquire knowledge of the basic concepts and principles of applying advanced physiotherapeutic assessment and treatment methods using new technologies.
- Understand and analyze thoroughly the evolution and innovative aspects of physiotherapy in complex cases.
- Familiarize themselves with the advantages and limitations of new technologies used in rehabilitation.
- Know how to use innovative assessment tools and data to monitor patient progress.
- Evaluate the effectiveness of advanced therapeutic approaches and adjust treatment plans accordingly.
- Understand the importance of collaboration with other healthcare professionals to provide comprehensive care.
- Be familiar with the ethical, social, and legal issues arising from the use of new technologies in physiotherapy and develop critical thinking to address these issues.
-

General Skills:

- Search, analysis, and synthesis of knowledge using necessary technologies (internet, databases, software, etc.)
- Decision-making
- Self-directed learning
- Teamwork
- Critical thinking and self-reflection
- Promotion of free creative and inductive thinking.
- Development of written and oral presentation skills of scientific knowledge.

(3)MODULE CONTENT

- Intercultural Physiotherapy in Healthcare

In this unit, students will explore common clinical scenarios where primary conditions are complicated by the presence of other pathologies, involvement of other systems, or where environmental, psychological, or socio-economic factors are of primary importance. The unit will provide students with an understanding of the roles of other healthcare professionals in interprofessional patient management and the legislation and social services related to community care, especially in rural and remote areas. Examples for exploration will include refugees, immigrants, and the Roma population with complex and diverse medical and social needs, leading to healthcare professionals facing multiple challenges in their care.

- Lifestyle Change (Smoking, Alcohol, Diet, etc.) in Various Diseases

This unit focuses on the importance of lifestyle change in the prevention and management of various diseases (cardiovascular, respiratory, metabolic, etc.) and the role of physiotherapy in supporting patients during these changes. Emphasis will be put on the impact of smoking, alcohol consumption, and dietary habits on health, as well as the strategies physiotherapists use to encourage and support these changes.

- Tele-Physiotherapy

Tele-rehabilitation is part of the telehealth revolution, describing the use of telehealth technology to provide physiotherapy services remotely. Students will learn about the advantages and challenges of tele-rehabilitation in patients with musculoskeletal, neurological, cardiovascular, respiratory, and other issues, such as facilitating access for patients in remote areas, continuous monitoring of patient progress, and improving compliance with therapeutic programs.

- New Technologies in Physiotherapy

Virtual Reality (VR) in Rehabilitation. The aim of the teaching unit is to introduce students to the cutting-edge applications of virtual reality in physiotherapy and rehabilitation. Students will explore how VR can be used to improve mobility, cognitive training, and psychological support for patients through interactive and personalized therapeutic programs.

Wearable Devices and Smart Technologies for Health Monitoring. This particular unit focuses on devices worn on the body which can monitor health-related data to prevent and improve various aspects of patients' health. The unit delves into the use of such devices in individuals after stroke, with cardiovascular diseases or respiratory conditions, after surgeries, geriatric patients, and the potential benefits of collecting data to support motivation for home exercise and prevent possible complications. Key elements include technology design, user-friendliness, feedback delivery, and how the use of this technology will support patient motivation and collaboration.

Artificial Intelligence (AI) in Physiotherapy. Artificial Intelligence has the potential to revolutionize healthcare practices, including physiotherapy, by providing advanced analytics, personalized treatment plans, and improved patient outcomes. This unit examines the use of Artificial Intelligence (AI) in physiotherapy and how modern AI technologies can enhance the assessment, diagnosis, and treatment of patients. The purpose of this unit is to present theoretical and practical data regarding the integration of artificial intelligence into clinical practice. Key subtopics include the definition and basic principles of artificial intelligence, types and technologies of AI (e.g., machine learning, deep learning), applications of AI in physiotherapy, clinical decision-making with the use of AI, ethical issues, and challenges related to data privacy, integrity, and security in AI usage, as well as the legislative and ethical challenges associated with the integration

of AI into clinical practice.

- Cognitive Functional Therapy in Chronic Pain Management

This educational unit focuses on the use of cognitive functional therapy for chronic pain management. The aim of this unit is to provide students with the knowledge and skills needed to utilize cognitive functional therapy in their clinical practice. Key points in this unit will include understanding the basic principles of cognitive functional therapy, differences and similarities with other forms of cognitive and behavioral therapy, mechanisms of chronic pain and its impact on the daily lives of patients, psychosocial factors influencing chronic pain, assessment and identification of patient perceptions and behaviors with chronic pain, patient education strategies, cognitive and functional interventions, as well as the assessment and monitoring of the progress of patients with chronic pain.

- Temporomandibular Joint Disorders

Temporomandibular joint disorder is a common condition that affects individuals of all ages and genders. This unit provides a comprehensive approach to managing disorders of the temporomandibular joint, offering participants the necessary knowledge and skills for effective treatment and restoration of their patients. Effective management of temporomandibular joint disorders involves a multifaceted approach, including physical therapy, pain management, lifestyle adjustments, and potentially dental interventions.

- Voice Physiotherapy

This unit provides a comprehensive approach to voice physiotherapy, offering participants the necessary tools and knowledge for effective assessment, treatment, and management of voice disorders. The goal of this unit is to understand the physiology and anatomy of the voice, recognize various forms of voice disorders, apply appropriate therapeutic interventions to improve vocal function, educate patients on promoting and maintaining vocal health, and collaborate with other healthcare professionals for the holistic management of voice disorders.

- Blood Flow Restriction Training

This unit provides a comprehensive introduction and practical guidance for the use of Blood Flow Restriction Training in rehabilitation, equipping participants with the necessary knowledge and skills to apply this technique in clinical practice. Subtopics will include the theoretical background of the technique, indications and contraindications, mechanisms of actions, and benefits in several patients' groups.

- Physiotherapists as First Contact Practitioners

This section focuses on training physiotherapists to function as First Contact Practitioners. This role allows physiotherapists to undertake primary care, providing direct assessment, diagnosis, and management of patients without the need for referral from another

healthcare professional. Some important thematic sub-sections include defining the role and responsibilities of physiotherapists as First Contact Practitioners, the differences from the traditional role of the physiotherapist, the detailed process of history taking and clinical examination, the evaluation of symptoms and the detection of serious pathologies (red flags), the algorithms and decision-making protocols for managing common musculoskeletal problems in primary care, the criteria and referral processes to other healthcare professionals, the legislation and ethics governing the role of First Contact Practitioners, and communication and patient education.

(4)TEACHING AND LEARNING METHODS - ASSESSMENT

TEACHING TYPE	On site
USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES	Use of information and communication technologies during teaching (internet, multimedia, electronic communication via platforms), electronic mail and social media. Use of software & programs related to the module (presentation programs, AI bots, etc.)
TEACHING ORGANIZATION	***Activity*** / ***Semester Workload*** Lectures: 196 Total: ***196***
EXAMINATION TYPE	- Final written exam (70%), which may include: Multiple Choice Questions that cover all the course material. Short Answer or Development questions that cover all the material of the course. - Elaboration of an essay of 2000 words and an oral presentation (30%) *For students attending through Erasmus, the evaluation of the course includes an essay of 3000 words and an oral presentation (100%) in English.

(5) SUGGESTED READING

- Winstein C, Requejo P. Innovative technologies for rehabilitation and health promotion: what is the evidence?.Physical therapy. 2015 Mar 1;95(3):294-8.
- Giesbrecht E, Major ME, Fricke M, Wener P, van Egmond M, Aarden JJ, Brown CL, Pol M, van der Schaaf M. Telerehabilitation delivery in Canada and the Netherlands: results of a survey study. JMIR Rehabilitation and Assistive Technologies. 2023 Feb 20;10(1):e45448.
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- Rutkowski S, Kiper P, Cacciante L, Mazurek J, Turolla A. Use of virtual reality-based training in different fields of rehabilitation: A systematic review and meta-analysis. Journal of Rehabilitation Medicine. 2020 Nov 19;52(11):1-6.
- Zhang Q, Fu Y, Lu Y, Zhang Y, Huang Q, Yang Y, Zhang K, Li M. Impact of virtual reality-based therapies on cognition and mental health of stroke patients: systematic review and meta-analysis. Journal of medical Internet research. 2021 Nov 17;23(11):e31007.
- Hao J, Xie H, Harp K, Chen Z, Siu KC. Effects of virtual reality intervention on neural plasticity in stroke rehabilitation: a systematic review. Archives of Physical Medicine and Rehabilitation. 2022 Mar 1;103(3):523-41.
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