

BULLETIN

UNIVERSITY OF DEBRECEN

ACADEMIC YEAR 2020-2021

FACULTY OF PUBLIC HEALTH

BSc in Physiotherapy

EDUCATIONAL OFFICE FACULTY OF PUBLIC HEALTH

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CHAPTER 1

INTRODUCTION

The aim of the University of Debrecen is to become a university of medical sciences committed to the prevention and restoration of health of the people, not only in its region but in the entire country.

In the past two decades both medical science and health care have entered a new era: the medical science of the 21st century. Molecular medicine is thriving, and new possibilities are available for the diagnosis, prevention, prediction and treatment of diseases. One can witness such a progress in medical sciences that has never been seen before. Modern attitudes in health care should be enforced in practice, including therapeutical approaches that consider the explanation and possible prevention of diseases, and attempt to comprehend and take the individual's personality into consideration. These approaches demand the application of the most modern techniques in all fields of the medical education.

All curricula wish to meet the challenges of modern times but also embody some very basic values. They are comprehensive; they take into consideration the whole patient, the individual (body and soul) in its natural and social surroundings; and they are based upon the best European humanistic traditions. Moreover, all curricula prepare students for co-operation and teamwork.

With respect to education, both students and teachers are inspired to acquire higher levels of professionalism, precision, and problem-solving skills, upon which the foundations of specialist training and independent medical practice can be built. This approach enables the assimilation of new scientific developments, facilitating further education and the continuous expansion of knowledge. The interplay of these factors ensures the ability to understand and handle the changing demands of health care.

With respect to research, the faculty members continuously acquire, internalize, and subsume new knowledge, especially concerning the genesis, possible prevention, and treatment of diseases. Moreover, new information aimed at improving, preserving, and restoring the health of the society is also acquired. The University of Debrecen is already internationally recognized in the fields of both basic and clinical research, and the clinicians and scientists of the University are determined to preserve this achievement. Special attention is given to facilitate and support the close co-operation of researchers representing basic science and clinical research, and/or interdisciplinary studies.

With respect to therapeutic practice, the main objective is to provide high quality, effective, up-to-date, and much devoted health care to all members of society, showing an example for other medical institutions in Hungary. One of the primary tasks is to continuously improve the actual standards of the diagnostic and therapeutic procedures and techniques, and to establish regional or even nationwide protocols.

With respect to serving the community, all faculty members wish to play a central role in shaping the policies of health services; both within the region and in Hungary. They also want to ensure that sufficient number of medical doctors, dentists and other health care experts with university level education are provided for society.

With respect to the development, all employees strive for reinforcing those features and skills of the lecturers, scientists, medical doctors, health care professionals, collaborators and students which are of vital importance in meeting the challenges of medical education, research, and therapy of the 21st century. These include humanity, empathy, social sensitivity, team-spirit, creativity, professionalism, independence, critical and innovative thinking, co-operation and management.

The organizational structure, including the multi-faculty construction of the institution, is a constantly improving, colorful educational environment, in which co-operation is apparent between the individual faculties and colleges, the various postgraduate programmes as well as the molecular

and medical biology educations.

HIGHER EDUCATION IN DEBRECEN

A Brief History

1235: First reference of the town of Debrecen in ancient charters.

1538: Establishment of the “College of Reformed Church” in Debrecen.

1567: Higher education begins in the College.

1693: Declaration of Debrecen as a “free royal town”.

1849: Debrecen serves as the capital of Hungary for 4 months.

1912: Establishment of the State University of Debrecen comprising the Faculties of Arts, Law, Medicine and Theology.

1918: Inauguration of the Main Building of the Medical Faculty by King Charles IV of Hungary.

1921: The opening of the Medical Faculty.

1932: Completion of buildings of the campus.

1944: Although during the Second World War, Debrecen became the capital of Hungary again (for 100 days), the University itself is abandoned for a while.

1949: The only year when the University has five faculties.

1950: The Faculty of Law idles; the Faculty of Science is established.

1951: The University is split up into three independent organizations: Academy of Theology, Medical School, Lajos Kossuth University of Arts and Sciences.

1991: The “Debrecen Universitas Association” is established.

1998: The “Federation of Debrecen Universities” is founded.

2000. The federation is transformed into the unified “University of Debrecen” with all the relevant faculties and with some 20,000 students.

Debrecen is a traditional economic and cultural centre of Eastern Hungary. In the 16th century Debrecen became the center of the Reformed Church in Hungary and later it was referred to as the “Calvinist Rome”. The 17th century was regarded as the golden age of the city as Debrecen became the mediator between the divided Hungary: the part under Turkish occupation, the Kingdom of Hungary and the Principality of Transylvania. For short periods of time, Debrecen served twice as the capital. Nowadays, with its population of approximately a quarter of a million, it is the second largest city in Hungary.

Debrecen is a unique city: although it has no mountains and rivers, its natural environment is rather interesting. One of the main attractions and places of natural uniqueness in Hungary is Hortobágy National Park, known as “puszta” (“plain”), which begins just on the outskirts of Debrecen. This is the authentic Hungarian Plain without any notable elevations, with unique flora and fauna, natural phenomena (e.g. the Fata Morgana), and ancient animal husbandry traditions. The region is unmatched in Europe, no matter whether one considers its natural endowments or its historic and ethnographic traditions. A very lovely part of Debrecen is the “Nagyerdő” (“The Great Forest”), which is a popular holiday resort. Besides several cultural and tourist attractions, luxurious thermal baths and spas, Nagyerdő accommodates the University campus too.

The history of higher education in Debrecen goes back to the 16th century when the College of the Reformed Church was established. The University Medical School of Debrecen has its roots in this spiritual heritage. It was in the year of the millennium of the foundation of Hungary (1896) when the institution of the present University was decided. The University of Debrecen was established in 1912, initially having four faculties (Faculties of Arts, Law, Medicine and Theology). The University was officially inaugurated by King Charles IV of Hungary on October 23rd, 1918.

The educational activity at the University started in 1924, although the construction of the whole University was completed only in 1932. In 1951 the Faculty of Medicine became a free-standing, independent Medical University for training medical doctors.

The special training of dentists began in 1976. As a further development, the University Medical

School established the Health College of Nyíregyháza in 1991. In 1993, as part of a nationwide programme, the University was given the rights to issue scientific qualifications and new PhD programmes were also launched. Several new programmes (e.g. the training of molecular biologists, pharmacists, general practitioners) were commenced in the '90s. The Faculty of Public Health was established in 1999, while the Faculty of Dentistry was founded in 2000.

Education at the University of Debrecen

Debrecen, the second largest city of Hungary, is situated in Eastern Hungary. Students enrolled in the various programmes (e.g. Medicine, Dentistry, Pharmacy, Public Health, Molecular Biology, etc.) study on a beautiful campus situated in the area called "Great Forest".

The Hungarian Government gives major priorities to the higher education of health sciences in its higher education policy. One of these priorities is to increase the ratio of college level training forms within the Hungarian higher education system. The governmental policy wishes to implement conditions in which the whole health science education system is built vertically from the lowest (post-secondary or certificate) to the highest (PhD-training) levels. In fact, this governmental policy was the reason behind the establishment of the new Health Science Education Centre within the Federation of Debrecen Universities (DESZ), based partially on the intellectual resources of the University of Debrecen. The new programmes – with specialized training for paramedics – will help balance out the Hungarian labor-market that became rather unsettled in the past few decades.

The Act of Higher Education (1993) has restored the rights of the medical universities to award postgraduate degrees.

The introduction of the credit system, starting in September 2003, has been mandatory in every Hungarian university, helping the quantitative and qualitative evaluation of the students' achievements.

International students study in English language. Entrance for certain courses of the Health College is possible on the basis of a special evaluation (scoring) and an entrance interview.

The syllabuses and classes of all courses correspond to European standards.

A one-year-long premedical (Basic Medicine) course, which serves as a foundation year, is recommended for those applicants who do not possess sufficient knowledge in Biology, Physics and Chemistry after finishing high school.

After graduation, several interesting topics are offered for PhD training, which lasts for three years. If interested, outstanding graduates may join these PhD courses ("English PhD programme").

The accredited PhD programmes include the following topics:

- Molecular and Cell Biology; Mechanisms of Signal Transduction
- Microbiology and Pharmacology
- Biophysics
- Physiology-Neurobiology
- Experimental and Clinical Investigations in Hematology and Hemostasis
- Epidemiological and Clinical Epidemiological Studies
- Cellular- and Molecular Biology: Study of the Activity of Cells and Tissues under Healthy and Pathological Conditions
- Immunology
- Experimental and Clinical Oncology
- Public Health
- Preventive Medicine
- Dental Research

The PhD programmes are led by more than 100 accredited, highly qualified coordinators and tutors.

Medical Activity at the Faculty of Medicine

The Faculty of Medicine is not only the second largest medical school in Hungary, but it is also one of the largest Hungarian hospitals, consisting of 49 departments: including 18 different clinical departments with more than 1,800 beds. It is not only the best-equipped institution in the area, but it also represents the most important health care facility for the day-to-day medical care in its region.

There are also close contacts between the University and other health care institutions, mainly (but not exclusively) in its closer region. The University of Debrecen has a Teaching Hospital Network consisting of 19 hospitals in Israel, Japan and South Korea.

It is also of importance that the University of Debrecen has a particularly fruitful collaboration with the Nuclear Research Institute of the Hungarian Academy of Sciences in Debrecen, allowing the coordination of all activities that involve the use of their cyclotron in conjunction with various diagnostic and therapeutic procedures (e.g. Positron Emission Tomography 'PET').

HISTORY OF THE FACULTY OF PUBLIC HEALTH

The first Faculty of Public Health in Hungary was established by the decision of the Hungarian Government on 1st December 2005.

Becoming an independent faculty of the University of Debrecen (presently uniting 15 different faculties) was preceded by a 10-year period of development. Establishment and launch of 5 different postgraduate and one graduate training programmes as well as the establishment of a doctoral programme were carried out by the teaching staff of the faculty with the effective support of the University of Debrecen. As a result of these efforts the Faculty became a unique, internationally recognized, and competitive training centre in Hungary. According to the Bologna process the Faculty has established and from 2006 and 2007 launched its Bachelor's and Master's training programmes in the field of public health and health sciences. With its 3 Bachelor's and 5 Master's training programmes with 6 Postgraduate courses, the Faculty of Public Health offers a rich variety of learning experience at present. There are two Doctoral programmes available since 2009.

Close cooperation with several faculties of the University of Debrecen guided the process of becoming a faculty, and the Faculty also became an internationally recognized workshop of public health research.

ORGANIZATIONAL STRUCTURE OF THE FACULTY OF PUBLIC HEALTH

- Department of Biostatistics and Bioinformatics
- Department of Health Promotion
- Department of Humanities for Health Care
- Department of Intervention Epidemiology
- Department of Habilitation Medicine
 - Division of Public Health Medicine
- Department of Physiotherapy
- Department of Hospital Hygiene and Infection Control
- Department of Health Management and Quality Assurance
 - Unit of Leadership Training for Health Care

MISSION OF THE FACULTY OF PUBLIC HEALTH

The mission of the Faculty of Public Health of the University of Debrecen as the centre of public health education in Hungary is to improve health of the population by developing and maintaining internationally recognized high quality training programmes, complying with the training needs of public health and health care institutions, both at the graduate and postgraduate level; pursuing excellence in research; providing consultancy as well as developing and investing in our staff. The

Faculty of Public Health organizes and carries out its training activities by the professional guidelines of the Association of Schools of Public Health in the European Region.

BSC AND MSC PROGRAMMES AT THE FACULTY OF PUBLIC HEALTH

Bachelor programme in Physiotherapy launched by the Faculty of Public Health of the University of Debrecen is built on the experience in education of physiotherapists at the University of Debrecen. The course is based on the University's highly trained, internationally competitive staff and excellent infrastructure in order to fulfil an international demand in health care (involving physiotherapy) training.

Another bachelor programme launched by the Faculty of Public Health is the BSc in Public Health.

The majority of teachers have remarkable teaching experience in English taking part in the international training programmes of University of Debrecen. The BSc in Dietetics programme starts in the academic year 2021/22 at first.

The international MSc programmes (MSc in Public Health, MSc in Complex Rehabilitation) launched by the Faculty of Public Health are offered for students graduated in the BSc courses of health sciences. Students studying in English – similarly to those studying in Hungarian – will have the opportunity to join the Students' Scientific Association, the most important means to prepare students for future academic career.

Outstanding students may present their work at the local Students' Scientific Conference organized by the Council of the Students' Scientific Association annually. The best performing students can advance to the National Students' Scientific Conference held every second year. Another way for students to introduce their scientific findings is to write a scientific essay which is evaluated through a network of reviewers.

CHAPTER 2

– ORGANISATION STRUCTURE

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CHAPTER 3

– ADMINISTRATIVE UNITS

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Manager Assistant	Ms. Márta Hajdu M.A.
Agent&Marketing Coordinator	Tamás Zabán M.Sc.
Marketing Coordinator	Ms. Eszter Balázs M.Sc.
	Ms. Dóra Mónus M.A.
Financial Coordinator	Ms. Rita Kovács J.D.
Agent Coordinator	József Harmati J.D.
Ranking and Marketing Coordinator	Ms. Zsófia Münnich M.Sc.
English Program Coordinators	Ms. Dóra Benkő (Admission, Visa Issues, BMC, US Loans)
	Ms. Regina Berei (Tuition fee, Financial certificates, Refunds)
	Ms. Marianna Gyuris (Admission, Visa issues, USMLE, MCCEE, Stipendium Hungaricum Scholarship, Wyckoff Heights)
	Ms. Ildikó Lakatos M.A. (Admission, Visa Issues)
	Ms. Krisztina Németh M.Sc. (Bulletin)
	Ms. Enikő Sallai M.Sc.

(Tuition fee, Health Insurance)

Ms. Mária Tóth M.Sc.
(Stipendium Hungaricum Scholarship)

Imre Szűcs B.Sc.

IT Project Coordinator

CHAPTER 5

– UNIVERSITY CALENDAR

UNIVERSITY CALENDAR FOR THE BSC IN PHYSIOTHERAPY PROGRAM ACADEMIC YEAR 2020/2021

Academic year opening ceremony	8 th September 2020 (Tuesday)
1 st semester Registration week	31 st August –4 th September 2020(1 week)
1 st semester study period	7 th September 2020–11 th December 2020(14 weeks)
1 st semester exam period	14 th December 2020–29 th January 2021(7 weeks)
1 st semester extension week	1 st –5 th February 2021(1 week)
2 nd Semester Registration week	1 st –5 th February 2021(1 week)
2 nd semester study period	8 th February 2021–14 th May 2021(14 weeks)
2 nd semester exam period	17 th May 2021–2 nd July 2021(7 weeks)
2 nd semester extension week	5 th July 2021–9 th July 2021(1 weeks)

CHAPTER 6

– ACADEMIC PROGRAM FOR CREDIT SYSTEM

In September 2003, the introduction of the credit system became compulsory in every Hungarian university, including the University of Debrecen. The aim of the credit system is to ensure that the students' achievements can be properly and objectively evaluated both quantitatively and qualitatively.

A credit is a relative index of cumulative work invested in a compulsory, required elective or optional subject listed in the curriculum. The credit value of a course is based upon the number of lectures, seminars and practical classes of the given subject that should be attended or participated in (so called „contact hours”), and upon the amount of work required for studying and preparing for the examination(s) (in the library or at home). Together with the credit(s) assigned to a particular subject (quantitative index), students are given grades (qualitative index) on passing an exam/course/class. The credit system that has been introduced in Hungary is in perfect harmony with the European Credit Transfer System (ECTS). The introduction of the ECTS promotes student mobility, facilitates more organization of student' exchange programs aimed at further education in foreign institutions, and allows recognition of the students' work, studies and achievements completed in various foreign departments by the mother institution.

Credit-based training is flexible. It provides students with a wider range of choice, enables them to make progress at an individual pace, and it also offers students a chance to study the compulsory or required subjects at a different university, even abroad. Owing to the flexible credit accumulation system, the term „repetition of a year” does not make sense any longer.

It should be noted, however, that students do not enjoy perfect freedom in the credit system either, as the system does not allow students to randomly include subjects in their curriculum or mix modules.

Since knowledge is based on previous knowledge, it is imperative that the departments clearly and thoroughly lay down the requirements to be met before students start studying a subject.

The general principles of the credit system are the following:

According to the credit regulations, students should obtain an average of 30 credits in each semester

The criterion of obtaining 1 credit is to spend some 30 hours (including both contact and noncontact hours) studying the given subject.

Credit(s) can only be obtained if students pass the exam on the given subject.

Students accumulate the required amount of credits by passing exams on compulsory, required elective and optional subjects. Completion of every single compulsory credit course is one of the essential prerequisites of getting a degree. Courses belonging to the required elective courses are closely related to the basic subjects, but the information provided here is more detailed, and includes material not dealt within the frame of the compulsory courses. Students do not need to take all required elective courses, but they should select some of them wisely to accumulate the predetermined amount of credits from this pool. Finally, a certain amount of credits should be obtained by selecting from the optional courses, which are usually not closely related to the basic (and thus mandatory) subjects, but they offer a different type of knowledge.

Students can be given their degree if, having met other criteria as well, they have collected 240 credits during their studies. Considering the recommended curriculum, this can be achieved in four years.

The pilot curricula show the recommended pacing of compulsory courses. If these courses are carefully supplemented with credits obtained from the necessary number of required elective and optional courses, students can successfully accumulate the credits required for their degree within 8 semesters.

The diploma work is worth 20 credits.

Internship (supervised practices) in the final year is compulsory.

Regulations concerning the training of students in the credit system prescribe a minimum amount of credits for certain periods as outlined in the Regulations of Training and Examination (RTE).

Although Physical Education and Summer Internship (controlled practices) are not recognized by credits, they have to be completed to get the final degree (see the rules outlined in the Information section about the conditions).

BSC IN PHYSIOTHERAPY

	Subject	Subject type: compulsory/elective	Lec	Sem	Pract	TOT	Cr	Ass	Pre-requirement
I.SEMESTER	Applied Health Sciences I.	compulsory	56	42		98	6	ESE	
	Anatomy of skeletal system for physiotherapists	compulsory	42	14	14	70	5	ESE	
	General principles in nursing and clinical propedeutics	compulsory	42	14	42	98	6	ESE	
	Introduction to basics of biostatistics	compulsory		14	14	28	2	AW5	
	Health informatics I.	compulsory	10		18	28	2	AW5	
	First aid	compulsory	14		14	28	2	AW5	
	Kinesiology I.	compulsory		14	28	42	2	ESE	
	Work safety and fire protection	compulsory		14		14	1	AW5	
	Latin language	compulsory			28	28	2	AW5	
	Roger's conversation	compulsory	7	7		14	1	AW5	
	Physical education I.	compulsory			28	28		Sign	
	Elective subjects						1		
Total			171	119	158	476	30		
II.SEMESTER	Applied Health Sciences II.	compulsory	56	42		98	4	ESE	Applied Health Sciences I.
	Anatomy histology and embryology for physiotherapists	compulsory	48	11	11	70	5	ESE	Anatomy of skeletal system for physiotherapists
	Health informatics II.	compulsory	10		18	28	2	AW5	Health informatics I.
	Electro-, balneo-, hydro- and climatotherapy (EBHCT)	compulsory	14		14	28	1	AW5	General principles in nursing and clinical propedeutics
	Physiology I.	compulsory	28	14		42	3	ESE	General principles in nursing and clinical propedeutics Applied Health Sciences I.
	Communication	compulsory		14		14	1	AW5	Roger's conversation
	Basics of Research Methodology	compulsory	28			28	2	ESE	Introduction to basics of biostatistics Health informatics I.
	Kinesiology II.	compulsory	28	28	84	140	10	ESE	Anatomy of skeletal system for physiotherapists Kinesiology I.
	Hungarian language I.	compulsory	0	0	28	28	0	SIGN	
	Elective subjects	elective					2		
Physical education II.	criteria			28	28		Sign		
Total			212	109	137	504	30		

	Subject	Subject type: compulsory/elective	Lec	Sem	Pract	TOT	Cr	Ass	Pre-requirement
III.SEMESTER	Basic psychology I.	compulsory	28			28	2	ESE	
	Physiology II.	compulsory	28	14	14	56	4	ESE	Physiology I.
	Introduction to law	compulsory	28			28	2	ESE	
	Microbiology I.	compulsory	14	14		28	2	ESE	Applied Health Sciences II.
	Mobilization-Manual Techniques I.	compulsory	14		70	84	6	AW5	Kinesiology II., Physiology I.
	Kinesiology III.	compulsory	28	14	84	126	10	ESE	Kinesiology II., Physiology I.
	Public Health medicine I.	compulsory	28	14		42	3	ESE	Physiology I., General principles in nursing and clinical propedeutics
	Hungarian language II.	compulsory	0	0	28	28	0	Sign	
	Elective subjects	elective					1		
	Total		168	56	196	420	30		
IV.SEMESTER	Applied Training Methods	compulsory	14	14	28	56	4	AW5	Kinesiology III., Physiology II.
	Professional Hungarian Language I.	compulsory			42	42	3	AW5	Hungarian language II.
	Internal Medicine for Physiotherapists (Respiratory physiotherapy, Cardiovascular rehabilitation)	compulsory	28		84	126	6	ESE	Public Health medicine I. Physiology II
	Basics of dietetics	compulsory	14	14		28	2	ESE	General principles in nursing and clinical propedeutics
	Principles of Health Sciences	compulsory	14			14	1	ESE	Anatomy histology and embryology for physiotherapists, Physiology I-II
	Health Care Law	compulsory	14			14	1	ESE	Introduction to law
	Principles of Kinesiology	compulsory	14			14	1	ESE	Kinesiology III
	Microbiology II.	compulsory	14	14		28	2	ESE	Microbiology I.
	Mobilization-Manual Techniques II.	compulsory			84	84	6	AW5	Mobilization-Manual Techniques I.
	Kinesiology practice	criteria			120	120	0	Sign	Principles of Kinesiology, Mobilization-Manual Techniques II.
	Elective subjects	elective					4		
		Total		112	42	358	526	30	

	Subject	Subject type: compulsory/elective	Lec	Sem	Pract	TOT	Cr	Ass	Pre-requirement
V. SEMESTER	Basics of pedagogy	compulsory	14			14	1	ESE	
	Basics of sociology	compulsory	14			14	1	ESE	
	Professional Hungarian Language II.	compulsory			42	42	3	AW5	Professional Hungarian Language I.
	Philosophy	compulsory	14			14	1	ESE	
	Pharmacology	compulsory	28			28	3	ESE	Physiology II., Microbiology II.
	Preventive Medicine and Public Health I.	compulsory	28	28		56	4	ESE	Basics of Research Methodology
	Neurology for Physiotherapists I.	compulsory	14	14		28	2	ESE	Physiology II, Principles of Kinesiology
	Orthopaedics for Physiotherapists	compulsory	10	18		28	2	ESE	Principles of Kinesiology
	Pathology	compulsory	28			28	2	ESE	Public Health medicine I., Physiology II
	Psychiatry for Physiotherapists	compulsory	28		14	42	3	ESE	Public Health medicine I
	Rheumatology for Physiotherapists I.	compulsory	14	14		28	2	ESE	Public Health medicine I. Principles of Health Sciences Principles of Kinesiology
	Obstetrics and Gynaecology for Physiotherapists	compulsory	28		14	42	3	ESE	Public Health medicine I, Principles of Kinesiology
	Traumatology for Physiotherapists	compulsory	28			28	2	ESE	Principles of Health Sciences Principles of Kinesiology
Elective subjects	elective					1			
	Total		248	74	70	392	30		
VI. SEMESTER	Bioethics	compulsory	14			14	1	ESE	
	Infant Care and Paediatrics for Physiotherapists	compulsory	14	14	28	56	4	ESE	Orthopaedics for Physiotherapists, Neurology for Physiotherapists I.
	Infant Care and Paediatrics Clinical Practice	criteria			80	80	0	Sign	Infant Care and Paediatrics for Physiotherapists
	Physiotherapy Principles of Internal Medicine	compulsory	14			14	1	ESE	Internal Medicine for Physiotherapists
	Preventive Medicine and Public Health II	compulsory	28	28		56	4	ESE	Preventive Medicine and Public Health I
	Physiotherapy of the Movement System I.	compulsory	42	28	56	126	8	ESE	Mobilization-Manual Techniques II. Orthopaedics for Physiotherapists Traumatology for Physiotherapists
	Neurology for	compulsory	14		28	42	3	ESE	EBHCT, Neurology for

	Physiotherapists II.								Physiotherapists I.
	Radiology and Diagnostic Imaging for Physiotherapists	compulsory			14	14	1	AW5	Orthopaedics for Physiotherapists, Traumatology for Physiotherapists
	Rheumatology for Physiotherapists II.	compulsory	28		28	56	4	ESE	EBHCT, Mobilization-Manual Techniques II. Rheumatology for Physiotherapists I.
	Thesis I.	compulsory					4	AW5	Kutatásmetodika alapjai
	Total		154	70	234	458	30		
	Subject	Subject type: compulsory/elective	Lec	Sem	Pract	TOT	Cr	Ass	Pre-requirement
VII.SEMESTER	Economics and Management	compulsory	28			28	2	ESE	
	Intensive Therapy for Physiotherapists	compulsory	10	4		14	1	ESE	Physiotherapy Principles of Internal Medicine, Physiotherapy of the Movement System I.
	Physiotherapy Principles of the Movement System	compulsory	14			14	1	ESE	Physiotherapy of the Movement System I. Rheumatology for Physiotherapists II.
	Physiotherapy of the Movement System II.	compulsory			56	56	4	AW5	Physiotherapy of the Movement System I.
	Neurology for Physiotherapists III.	compulsory	6		24	58	4	AW5	Neurology for Physiotherapists II.
	Rehabilitation skills	compulsory	28	14	28	70	5	ESE	Rheumatology for Physiotherapists II., Physiotherapy of the Movement System I., Neurology for Physiotherapists II.
	Rheumatology for Physiotherapists III.	compulsory			28	28	2	AW5	Rheumatology for Physiotherapists II.
	Thesis II.	compulsory		14		14	8	AW5	Thesis I.
	Elective subjects	elective					3		
	Total		86	32	136	282	30		
VIII.SEMESTER	Internal Medicine Clinical Practice	compulsory			80	80	3	AW5	Physiotherapy Principles of Internal Medicine
	Neurology Clinical Practice	compulsory			80	80	3	AW5	Neurology for Physiotherapists III.
	Rehabilitation Clinical Practice	compulsory			120	120	4	AW5	Physiotherapy Principles of the Movement System
	Orthopaedics Clinical Practice	compulsory			80	80	3	AW5	Physiotherapy Principles of the Movement System Rehabilitation skills
	Rheumatology Clinical Practice	compulsory			120	120	4	AW5	Physiotherapy Principles of the Movement System
	Traumatology Clinical Practice	compulsory			120	120	4	AW5	Physiotherapy Principles of the Movement System
	Cardiopulmonary Resuscitation (CPR)	criteria			14	14	1	AW5	
	Thesis III.	compulsory			14	14	8	AW5	Thesis II.
	Total		0	0	628	628	30		
	Subtotal		1151	502	1917	3686	240		

CHAPTER 7

Subject: **APPLIED HEALTH SCIENCES I.**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **56**

Seminar: **42**

1. week

1. Basic chemical concepts, structure of atoms 2. Introduction to biophysics, types and law of radioactive decay, radioactive series 3. General cell biology, pro-and eucaryotes, basic cellular functions.

1. Basic chemical concepts, structure of atoms.

2. week

1. Chemical bonds 2. Electromagnetic waves, dual nature of light, matter waves, production of light 3. Nucleus, chromatin, chromosomes.

2. Types and law radioactive decay.

3. week

1. Water, aqueous solutions, acids, bases, buffers 2. Molecular spectra. Jablonski diagram, fluorescence, phosphorescence and their applications 3. Cell cycle and its regulation.

3. General cell biology, pro-and eucaryotes, basic cellular functions.

4. week

1. Reaction kinetics, types of chemical reactions, catalysis 2. Radiation and its interaction with absorbing matter. Detection of radiation 3. Mitosis, meiosis, the human genome, results of HGP.

1. Chemical bonds. Water, aqueous solutions, acids, bases, buffers. Reaction kinetics, types of chemical reactions, catalysis.

5. week

1. Oxidation, reduction, redox processes 2. Radiation biophysics: target theory, direct and indirect action of radiation, dosimetry, the biological effect of radiation 3. Genetic code, regulation of prokaryotic gene expression.

2. Electromagnetic waves, dual nature of light, matter waves, production of light. Molecular spectra. Jablonski diagram, fluorescence, phosphorescence and their applications.

6. week

1. Types of carbon bonding, classification of organic compounds 2. Experimental, diagnostic and therapeutic applications of radioactive isotopes; accelerators 3. Regulation of eucaryotic gene expression, epigenetics.

3. Nucleus, chromatin, chromosomes, cell cycle and its regulation. Mitosis, meiosis, human genome; results of HGP. The genetic code, regulation of pro-and eucaryotic gene expression, epigenetics.

7. week

1. Hydrocarbons 2. Generation of X-rays, its absorption mechanisms; X-ray crystallography 3. Mendelian genetics, Mendel's 1st law, monogenic inheritance, monohybrid cross, genes, alleles, genotype, phenotype.

1. Oxidation, reduction, redox processes. Types of carbon bonding, classification of organic compounds.

8. week

1. Halogenated hydrocarbons, alcohols, ethers 2. Basics of nuclear magnetic resonance (NMR), NMR spectroscopy in biology and in medicine 3. Mendel's 2nd law, dihybrid cross, dominant and recessive alleles, gene interactions, epistasis, lethal genes, autosomal and X-linked genes.

2. Radiation and its interaction with absorbing matter. Detection of radiation. Radiation biophysics:

target theory, direct and indirect action of radiation, dosimetry, the biological effect of radiation. Experimental, diagnostic and therapeutic applications of radioactive isotopes; accelerators.

9. week

1. Aldehydes, ketones, carboxylic acids, esters 2. X-ray diagnostics, CT, magnetic resonance imaging (MRI) 3. Population genetics.

1. Hydrocarbons. Halogenated hydrocarbons, alcohols, ethers. Aldehydes, ketones, carboxylic acids, esters.

10. week

1. Nitrogen-containing bases, nucleosides, nucleotides, nucleic acids 3. Mutations, DNA repair, DNA polymorphisms, human blood group systems, the HLA system.

3. Mendelian genetics, Mendel's 1st law, monogenic inheritance, monohybrid cross, genes, alleles, genotype, phenotype. Mendel's 2nd law, dihybrid cross, dominant and recessive alleles, gene interactions, epistasis, lethal genes, autosomal and X-linked genes. Mutations, DNA repair, DNA polymorphisms, human blood group systems, the HLA system.

11. week

1. Amines, amides, amino acids, peptides. 2. Gamma camera, SPECT, PET. 3. Molecular background of hereditary diseases.

2. Generation of X-rays, its absorption mechanisms, CT; basics of nuclear magnetic resonance (NMR), NMR spectroscopy in biology and in medicine, magnetic resonance imaging (MRI). Gamma camera, SPECT, PET.

12. week

1. Proteins. 2. Sedimentation and electrophoretic techniques, mass spectrometry. 3. Genetic background of tumors; oncogenes.

1. Nitrogen-containing bases, nucleosides, nucleotides, nucleic acids. Amines, amides, amino acids, peptides. Proteins. 2. Sedimentation and electrophoretic techniques, mass spectrometry, X-ray crystallography.

13. week

1. Carbohydrates. 2. Chemical potential, Brownian motion, diffusion on molecular level, statistical interpretation, Fick's laws, osmosis. 3. Pharmacogenetics and pharmacogenomics, ecological genetics.

3. Population genetics. Genetic background of tumors; oncogenes. Genetic background of tumors, oncogenes. Pharmacogenetics and pharmacogenomics, ecological genetics.

14. week

1. Lipids 2. Structure of biological membranes, membrane transport 3. Disease-gene associations, prenatal diagnostics, genetic consulting, ethical issues.

1. Carbohydrates. Lipids. 2. Chemical potential, Brownian motion, diffusion on molecular level, statistical interpretation, Fick's laws, osmosis. Structure of biological membranes, membrane transport.

Attending lectures is recommended, attending seminars is mandatory. The maximum absence from seminars is permitted to be 1 occasion (3 hours)/semester. Participation can be made up in another group, after consulting with the seminar leader. Exceeding the permitted absence (regardless of being confirmed or unjustified) will result in a refusal of the signature. The material covered during lectures and seminars is the base of the mid-semester (week #7) and end-of-semester (week #14) written tests. Based on the achieved average scores of the two tests, the grades of the best scores (top 1/3 of ranked scores) will be offered. If a student does not receive an offered grade or if it is not adequate for him/her, he/she must take a written exam during the exam period.

Subject: **ANATOMY OF SKELETAL SYSTEM FOR PHYSIOTHERAPISTS**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **42**

Seminar: **14**

Practical: **14**

1. week

Epithelium

Connective tissue

Histology of the blood and bone marrow

The role of white blood cells in immunity

2. week

Muscle tissue

The anatomy of the heart I

The anatomy of the heart II

Histology of blood vessels. Vascular system of the human body

3. week

Lymph circulation. Histology of lymph nodes and spleen

The respiratory system. Anatomy of the nasal cavity and larynx

Anatomy and histology of the trachea and lung

Organization of the digestive system. The oral cavity

4. week

Anatomy and histology of the pharynx, esophagus and stomach

Anatomy and histology of the intestine

Anatomy and histology of the liver and pancreas

Organization of the urinary system. Anatomy and histology of the kidney

5. week

Anatomy and histology of the ureter, urinary bladder and urethra

Anatomy and histology of the male genital organs

Anatomy and histology of the female genital organs

Cell division. Development of gametes

6. week

Fertilization. Cleavage. Development of the germ layers

Differentiation of the germ layers I

7. week

Differentiation of the germ layers II

Development of the fetal membranes. Labor

Development of the skeletal system I

Development of the skeletal system II

8. week

Development of the nervous system

Nervous tissue - neurons and glial cells

Nervous tissue - synapses

The peripheral nervous system - receptors, nerves and ganglia

9. week

The central nervous system - organization of the spinal cord

The brain. Organization of the brainstem

10. week

Structure of the brainstem. Nuclei of cranial nerves

Anatomy and histology of the cerebellum

Diencephalon - structure of the thalamus and hypothalamus
Organization of the pituitary gland. Hypothalamo-hypophyseal system

11. week

The parts of the forebrain. Functional anatomy of the lobes
Histology of the forebrain
Somatosensory system
The somatomotor system. Innervation of the skeletal muscles

12. week

Role of the spinal cord in organization of movements
Descending motor pathways
Role of the motor cortex and basal ganglia in organization of movements
Autonomic nervous system

13. week

Vestibular system
Auditory system
The eye
The visual system

Requirements

Concerning attendance, the rules written in the Regulations Governing Admission, Education and Examinations of the University are valid. The presence in practices, seminars and lectures will be recorded. The course organizer may refuse to accept the academic performance if a student is absent from more than two practices or misses more than 50% of the lectures in the semester.

Subject: **GENERAL PRINCIPLES OF NURSING AND CLINICAL MEDICINE**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **42**

Seminar: **14**

Practical: **42**

1. week

Lecture: The history of nursing and medicine The physician's behavior. The patient and health care staff relationship. The professional secrecy. The aim of the diagnosis and its different forms. Symptoms of diseases.

2. week

Lecture: System of definitions and philosophy of nursing; nursing theories; nursing models, basic human needs; assessment of the basic human needs; patient observation. Nursing protocols and standards. Rules of the nursing documentation; ethical and legal aspects of nursing.

3. week

Lecture: Physiological breathing: needs of the rest and movements and their gratification; needs of nutrition, water and fluid balance and their gratification; suitable clothes and physiological body temperature.

4. week

Lecture: Defecation and micturition; hygienic needs; needs of communication and information. Needs of the safety; the unconscious patient; postoperative nursing tasks; aseptic and hygienic environment. How to take care of a dying patient.

5. week

Practical: Scene of the nursing; structure of a hospital unit; observation of the patient; measurement of vital parameters. Nursing diagnosis and preparing of the nursing plan; maintenance of the patient's personal hygiene; beds and bed-making; methods of bed-making; general and specific

instructions for the bed-making.

6. week

Practical: Patient medication; personal and objective conditions of feeding; artificial feedings; feeding with tube.

7. week

Lecture: Tools for collecting urine and faeces; the planning and evaluation of the safety for patient.

8. week

Lecture: History taking. Family history, previous diseases, present complaints. Types of diagnosis, hospital course, hospital discharge summary. General medical physical examination (inspection, palpation, percussion, auscultation).

9. week

Lecture: Physical examination of the skin, head, neck, and thyroid gland, the lymph nodes, the oral cavity, the eyes and the breasts and axillae.

10. week

Lecture: Clinical laboratory: anatomic pathology, clinical microbiology, clinical biochemistry, hematology. Non invasive and invasive diagnostic tests (electrocardiography, nuclear medicine techniques, x-ray, ultrasound, MRI, PET, CT etc), cardiac catheterization and different forms of endoscopy.

11. week

Lecture: Physical examination of the respiratory and cardiovascular system.

12. week

Lecture: Physical examination of the abdomen and genital-urinary system.

13. week

Lecture: Physical examination of the locomotors system and the nervous system.

14. week

Lecture: Different forms of management of patients, Drug treatment efficacy, side effects, overdose and interaction. Clinical toxicology.

Requirements

Attendance of lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance of practices is compulsory. If you missed more than 2 practices, the signature may be refused. To pass the practical examination is the indispensable condition for signature of Lecture Book.

Subject: **INTRODUCTION TO BASICS OF BIOSTATISTICS**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Seminar: **14**

Practical: **14**

1st week:

Lecture: The role and importance of statistical analysis

Practical: Introduction to Microsoft Excell

2nd week:

Lecture: Basic data management, types of variables

Practical: Data management 1

3rd week:

Lecture: Presenting data by measures and charts

Practical: Data management 2, charts, descriptive statistics

4th week:

Lecture: Theoretical basics of interval estimation

Practical: Theoretical basics of interval estimation, distribution of the sample mean

5th week:

Lecture: Estimating the population mean

Practical: Confidence Interval for a Population Mean

6th week:

Lecture: Theoretical basics of hypothesis testing, statistical power, error of type 1 and 2

Practical: Hypothesis testing: a single population mean (z-test)

7th week:

Lecture: Statistical inference by interval estimation and/or hypothesis testing

Practical: One-sample t-test of mean

8th week:

Lecture: Comparing two means, two-sample t-test, paired t-test

Practical: Comparing two means, two-sample t-test, paired t-test

9th week:

Lecture: Comparing more means

Practical: One-way analysis of variance (ANOVA)

10th week:

Lecture: Nonparametric and distribution-free statistics

Practical: Checking the assumption of normality (p-p plot), data transformation

11th week:

Lecture: Estimating probability, proportion and odds

Practical: Confidence interval for a population proportion, z-test for a population proportion

12th week:

Lecture: The chi-square distribution and the analysis of frequencies

Practical: Chi-square test statisti

13th week:

Lecture: Introduction to the regression modeling

Practical: Simple linear regression

14th week:

Lecture: The multiple linear regression model

Practical: Multiple linear regression

Subject: **HEALTH INFORMATICS I.**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **10**

Practical: **18**

1. week

Information, data, knowledge, communication, codes, measures, interpretation in the field of Informatics / Health Informatics. Signal processing, biometrics, digital imaging, artificial intelligence.

Introduction

Neptun: <http://neptun.unideb.hu/?page=studeng>

MOODLE: The e-learning system <https://elearning.med.unideb.hu/?lang=en>"

2. week

Health care: data security and protection – data types, data management. Health and economic data. Legal issues: Hungarian and international practice: law and judgment.

3. week

Health care: organizations, prevention, screening, health promotion and prevention (countries, regions, global issues), decisions. WHO and global organizations: data, legal and relevant sources, availability of data.

4. week

Administration, dataflow, standards, quality assurance in the Health Care. Problems, errors possible causes, uncertainties and solutions. Information systems – possibilities.

5. week

Classification, code systems, nomenclature, conversions. ICD, Procedure codes, SNOMED, TNM, RCC, metacode, bar code, QR code, PID, solution provider ID, economic data codes. Graphs, UMLS, GRAIL. Statistical models. Usage and value.

6. week

TEST (MOODLE: Multiple Choice from the Lecture material)

7. week

MS WORD: DATA import. Insert and edit text, picture, table, textbox chart. Formatting Fonts and Paragraphs (MS WORD) / MS PowerPoint: Making a Presentation

8. week

MS WORD: Cover page. Page/Section break, Header, Footer, Footnote, Endnote, Table of Contents, List of Figures, List of Tables, Number of characters / words (Home assignment!)

9. week

MS EXCEL: DATA export and import – text file / Selection of the cells – ranges / Filling the cells / Search, Find and Replace. / Order / Filters / 3D references / Functions

10. week

MS EXCEL: statistical functions: COUNT(), COUNTIF(), AVERAGE(), AVERAGEIF(), SUM(),SUMIF(), MEDIAN(), MIN(), MAX()

11. week

MS EXCEL: IF(), VLOOKUP(), HLOOKUP(), INDEX() MATCH() search tables. text functions / LEFT(), RIGHT(), MID(), LENGTH(), CONCATENATE(), Date and time functions TODAY()

12. week

MS EXCEL: PIVOT Table + practice

13. week

MS EXCEL: practice

14. week

TEST (Practical EXCEL (exercises solving with computer))

Subject: **FIRST AID**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **14**

Practical: **14**

1. week

Lecture: Definition of “first aid”; first aid levels; time factor; behaviour of first responder in the field; the emergency call

2. week

Lecture: Unconsciousness; airway obstruction; airway opening maneuvers.

3. week

Lecture: Death as a process; determining of clinical death; the different oxygen demand of the brain depending on age; establishing unconsciousness or death; assessment of vital signs; assessment of breathing, circulation, pupils and muscle tone

4. week

Lecture: Reanimation on the spot – organisation problems; the theory of CPR; complications during the CPR; effect, results and success during CPR

5. week

Lecture: Burning, first aid in burning diseases, shock.

6. week

Practical: AVPU, ABCDE approachment.

7. week

Practical: Recognition of unconsciousness, recovery position, airway management.

8. week

Practical: Practicing the ventilation.

9. week

Practical: Complex CPR training, usage of AED.

10. week

Practical: Practical exam.

11. week

Practical: Types of bleeding, bleeding control, hypovolaemic shock, Trendelenburg position.

12. week

Practical: Distortions and extended soft-tissue injuries, bandage for fixation with special triangle, stifneck, dessault bandage, fixation of finger and hand fractures, usage of siplint.

13. week

Practical: Basic trauma care.

14. week

Practical: Consultation, written test.

Self Control Test

Requirements

Condition of signing the Lecture book:

Attendance at practices is compulsory. The tutor may refuse to sign the Lecture book if the student is absent from the practicals more than twice in a semester. Missed practicals should be made up after consultation with the tutor. Facilities for a maximum of 2 make-up practicals are available at the Ambulance Center in Debrecen. The current knowledge of students will be tested twice in each semester driving a written test.

Subject: **KINESIOLOGY I**

Year, Semester: 1st year/1nd semester

Number of teaching hours:

Seminar: **14**

Practical: **28**

Subject: **WORK SAFETY AND FIRE PROTECTION**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Seminar: **14**

Subject: **LATIN LANGUAGE**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Practical: **28**

1th week:

Introduction, orientation

2nd week:

Chapter 2: Anatomical positions, planes and directions

3rd week:

Chapter 3: Parts of the body – Word quiz 1

4th week:

Grammar 1: Basic elements of Latin grammar – Word quiz 2

5th week:

Chapter 5: Regions – Word quiz 3

6th week:

Concord of genders Word quiz 4

7th week:

Formation of adjectives, revision, Word quiz 5 – Mid-term Test

8th week:

Chapter 6: Skeletal system I

9th week:

Skeletal system II, Plural forms – Word quiz 6

10th week:

Chapter 7: Joints – Word quiz 7

11th week:

Complex adjectives – Word quiz 8

12th week:

Chapter 8 Muscles Latin prefixes Latin and Greek prefixes related to numerals and quantities; Latin numerals Word quiz 9

13th week:

Chapter 9: Greek roots – Revision 2 Word quiz 10 – End-term Test

14th week:

Evaluation

Subject: **ROGER'S CONVERSATION**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **7**

Seminar: **7**

Subject: **PHYSICAL EDUCATION I.**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Practical: **28**

Content:

Practical: Sports events: Aerobic, Basketball, Handball, Horse-riding, Ice-skating, Skiing, Soccer, Spinning, Swimming, Tennis, Volleyball. Spare time sports: body building, badminton, floorball, Pilates, Speed Minton, cardio-workout

Requirements

The subject is a criterion condition for getting Certificate of Completion.

Registering for the Physical Education courses:

Step 1: register in Neptun system – you have to choose course

Step 2: you have to come in the P.E. Department (Móricz Zsigmond körút 22, 3rd Youth Hostel) to choose sport course.

If you have any question don't hesitate to ask: nvkata@med.unideb.hu

Subject: **APPLIED HEALTH SCIENCES II.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **56**

Seminar: 42

1. week

1. Metabolism, storage of biological energy 2. Thermodynamic equilibrium potentials (Nernst-, Donnan-potential). Diffusion potential (Goldman-Hodgkin-Katz equation) 3. Intracellular transport processes, nuclear envelope, nuclear transport

2. week

1. Digestion and absorption of carbohydrates, glycolysis 2. Action potential and electric excitability. Measurement of the membrane potential 3. Intracellular membrane systems: lysosome, peroxysome, ER, Golgi, endo- and exocytosis

3. week

1. The citric acid cycle, terminal oxidation 2. Ion channels (gating, selectivity) "patch-clamp" technique 3. Energy transduction, mitochondrion

4. week

1. Gluconeogenesis, synthesis of glycogen, glycogenolysis 2. Physical basics of ECG and EEG I. 3. Cytoskeleton, microtubules, intermediate and microfilaments

5. week

1. Digestion and absorption of lipids, lipid transfer particles 2. Physical basics of ECG and EEG II. 3. Cell motility

6. week

1. Beta-oxidation, lipid biosynthesis 2. Basic geometrical optics. Optical microscopy. Electron microscopy 3. Cell membrane, membrane transport, ABC transporters

7. week

1. Digestion of proteins, amino acid degradation, urea cycle 2. The human eye as an optical system. Photoreceptors. Molecular mechanism of vision 3. Ion channels, membrane potential

8. week

1. Synthesis of amino acids, nitrogen balance 2. Mechanism of hearing, Weber-Fechner law. Electrical properties of auditory receptors, coding of sound 3. Signaling I: general concepts, nuclear receptors, GPCR

9. week

1. Digestion of nucleic acids, purine and pyrimidine metabolism 2. Biomechanics I. 3. Signaling II: TK, proteolytic signals, signaling pathways to the nucleus

10. week

1. Synthesis of purines, pyrimidines, nucleosides and nucleotides 2. Biomechanics II. 3. Cellular

aging, cell death

11. week

1. Integrated metabolic pathways, starving, obesity, hormonal regulation of circadian rhythm 2. Flow of fluids, basics of blood circulation 3. Stem cells, from genes to cellular functions

12. week

1. Coagulation and the complement system 2. Biophysics of respiration 3. Intracellular Ca^{2+}

13. week

1. Iron and hemoglobin metabolism. Extracellular matrix and muscle biochemistry

14. week

1. Biochemistry of bones and cartilages. Vitamins

Subject: **ANATOMY HISTOLOGY AND EMBRYOLOGY FOR PHYSIOTHERAPISTS**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **48**

Seminar: **11**

Practical: **11**

1. week

- Lecture: 1. Cell division. Development of gametes
2. Fertilization. Cleavage. Development of the germ layers
3. Differentiation of the germ layers I
4. Differentiation of the germ layers II

2. week

- Lecture: 1. Development of the skeletal system I
2. Development of the skeletal system II
3. Development of the nervous system
4. Development of the fetal membranes. Labor

3. week

- Lecture: 1. Epithelium
2. Connective tissue
3. Histology of the blood and bone marrow
4. The role of white blood cells in immunity

4. week

- Lecture: 1. Muscle tissue
2. The anatomy of the heart I
3. The anatomy of the heart II
4. Histology of blood vessels. Vascular system of the human body
Practicum: Anatomy of the heart. Vascular system of the human body

5. week

- Lecture: 1. Lymph circulation. Histology of lymph nodes and spleen
2. Organization of the respiratory system. Anatomy of the nasal cavity and larynx
3. Anatomy and histology of the trachea and lung
4. Organization of the digestive system. The oral cavity
Practicum: Anatomy of the respiratory system

6. week

- Lecture: 1. Anatomy and histology of the pharynx, esophagus and stomach
2. Anatomy and histology of the intestine
3. Anatomy and histology of the liver and pancreas
4. Organization of the urinary system. Anatomy and histology of the kidney
Practicum: Anatomy of the digestive system

7. week

- Lecture: 1. Anatomy and histology of the ureter, urinary bladder and urethra
2. Anatomy and histology of the male genital organs
3. Anatomy and histology of the female genital organs
4. Nervous tissue - neurons and glial cells
Practicum: Anatomy of the urinary and genital systems

8. week

- Lecture: 1. Nervous tissue - synapses
2. The peripheral nervous system - receptors, nerves and ganglia
3. The central nervous system - organization of the spinal cord
4. The brain. Organization of the brainstem

Practicum: Exam: Anatomy of the inner organs

9. week

Lecture: 1. Structure of the brainstem. Nuclei of cranial nerves

2. Anatomy and histology of the cerebellum

3. Diencephalon - structure of the thalamus and hypothalamus

4. Organization of the pituitary gland. Hypothalamo-hypophyseal system

Practicum: Structure of the spinal cord. Organization of the spinal nerves

10. week

Lecture: 1. The parts of the forebrain. Functional anatomy of the lobes

2. Histology of the forebrain

3. Somatosensory system

4. Organization of the somatomotor system. Innervation of the skeletal muscles

Practicum: Anatomy of the brainstem. Cranial nerves

11. week

Lecture: 1. Role of the spinal cord in organization of movements

2. Descending motor pathways

3. Role of the motor cortex and basal ganglia in organization of movements

4. Autonomic nervous system

Practicum: Structure of the cerebellum and diencephalon

12. week

Lecture: 1. Vestibular system

2. Auditory system

3. The eye

4. The visual system

Practicum: Forebrain. Meninges, liquor and blood circulation of the brain

13. week

Practicum: Anatomy of the auditory and visual systems

14. week

Practicum: Exam: Anatomy of the spinal cord and brain

Requirements

Prerequisite: Anatomy I

Rules of examination

Concerning attendance, the rules written in the Educational and Examination Regulations of the University of Debrecen are valid. The presence in practices, seminars and lectures will be recorded. The course organizer may refuse to accept the academic performance if a student is absent from more than two practices or misses more than 50% of the lectures in the semester.

Midterm examinations

Two midterm examinations will be held on the 9th and 15th weeks in the dissection room covering the gross anatomy of the viscera and central nervous system, respectively. The students who performed the midterm examinations successfully are exempted from two topics during the practical parts of the end-semester exam.

End-semester examinations

The end-semester examinations are divided into two stations:

1. The first part of the end-semester exam is a practical oral exam will be held in the dissecting room. The exam covers gross anatomy of the viscera and central nervous system. The students have to choose a question including four topics. The list of the topics is available for the students during the semester. The students who performed the midterm examinations successfully have the right to choose only two topics out of the four during the practical examination.
2. The second part of the end-semester exam is a written exam including simple and multiple-choice test questions which cover the topics of lectures and practices.

The student has to pass the practical and the written exam, respectively. If the student pass the practical or the written exam during the A chance he/she does not have to do it again next time. Registration and postponement of the exam can be done through the NEPTUN system.

Subject: **HEALTH INFORMATICS II.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **10**

Practical: **18**

1. week

Concepts of database systems, database and database manager, historical overview of its development, Requirements for information systems, Structure of data storage, Access to data, Application programs.

2. week

Formation of a relational data model, Relational data structure (getting to know its elements), Operations of a relational data model. Normalization.

3. week

An insight into the relational algebra that forms the basis of queries. Structural description of SQL language. Data security, Data protection in healthcare - data types, data management, disposal rights.

4. week

New data storage, collection and processing procedures. (Big Data, Machine Learning, Data Mining, Artificial Intelligence) Representation of results, interpretation of health statistics Getting to know data sources: HFA database, OECD database, EUROSTAT, KSH.hu, www.cdc.gov

5. week

TEST (MOODLE: Multiple Choice from the Lecture material)

6. week

MS EXCEL: Search functions: INDEX (MATCH()) knowledge and comparison with the already known FKERES, VKERES search functions + problem solution

7. week

MS EXCEL: Pivot table (creation of groups, filters, multi-level tables, slicers)

8. week

MS EXCEL: Exercise solution (search functions and pivot tables)

9. week

DATABASE MANAGEMENT: Learn about MS Access database manager. Learn about other database management systems: Apache OpenOffice, LibreOffice Data Import, Export. Creating a data table, Linking data tables

10. week

DATABASE MANAGEMENT: Queries (SQL) I. (Understanding the structure of SQL, Simple queries, Sorting result rows, Alias)

11. week

DATABASE MANAGEMENT: Queries (SQL) II. (Select rows, query with search criteria: Simple criteria, Criteria in sets, Advanced search criteria, Precedence of operations)

12. week

DATABASE MANAGEMENT: Queries (SQL) III. (Grouping, Group Functions, Nested SELECT Instructions, Linking Tables)

13. week

DATABASE MANAGEMENT: Task Solution I.

14. week

DATABASE MANAGEMENT: Task solution II.

15. week

TEST (practical exercise EXCEL + ACCESS (problem solving with a computer))

Subject: **ELECTRO-, BALNEO-, HYDRO-, AND CLIMATOTHERAPY**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **14**

Practical: **14**

1. week

Definition and subdivisions of physical therapy, theoretical background of electrotherapy, low frequency treatments, galvanic current therapy, special Galvan treatments

2. week

Theoretical background of the iontophoresis and TENS therapies

3. week

Theoretical background of selective stimulus therapies and the middle frequency electrotherapies (diadynamic and interference treatments)

4. week

Theoretical background of the high frequency therapies and magnetotherapy, mechanotherapy: ultrasound, traction therapies, hydromassage

5. week

Theoretical background of hydrotherapy, balneotherapy and climate therapy

7. week

Theoretical background of inhalation therapies, phototherapy

Requirements

Prerequisite: Biophysics, Basics of Physiotherapy

Course Requirements:

Conditions for obtaining a signature:

Attendance at lectures and practice is compulsory. The prerequisite for obtaining the signature is not to exceed the permissible absences from theoretical and practical lessons! Theoretical absences are 2 hours, and the practical lessons are 2 hours during the semester. Exceeding the permissible absences implies a refusal to sign. Replacement is possible on the basis of consultation with the practice supervisors.

Exam type: 5 grade practice grade. One complex written exam (from theoretical and practical part) during the semester, pass grade:60%. During the first two weeks of the exam period a complex oral exam will take place.

Examination:End-semester exam (ESE)

Subject: **PHYSIOLOGY I.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **28**

Seminar: **14**

1. week

lecture: Basic neuronal functions: resting potential and excitatory processes; function of neuronal networks; sensory receptors; properties of impulse propagation, synaptic transmission, effectors; injury of nerves, regeneration

seminar: Introduction to the subject. Requirements

2. week

lecture: Somatosensory function of CNS: psychological and psychophysical basic definitions; deep sensation; proprioception; exteroceptors, the skin as a sensory organ; significance and mechanisms of pain sensation; specific and aspecific ascending sensory systems; function of the sensory cortex
seminar: Disorders of impulse propagation and synaptic transmission

3. week

lecture:

Somatomotor function of CNS: reflex activity at different levels; proprioceptive and exteroceptive spinal cord reflexes; injury of spinal cord, acute and permanent consequences

seminar: Disorders of sensory functions

4. week

lecture

Reflex control of posture, the vestibular apparatus as receptor structure; distribution of muscle tone

seminar: Reflex control of posture

5. week

lecture: Role of the brainstem in the movement regulation; cortical mechanisms; role of the cerebellum in the coordination of movement; dysfunction of motoric system at various level of regulation

seminar: Postural disorders

6. week

lecture:

Skeletal muscles as effectors: motor unit; electric properties of skeletal muscle; characteristics of mechanical response; regulation of muscle tone

seminar: Higher function of CNS

7. week

lecture: Neuromuscular synaptic transmission; myasthenia gravis; dysfunctions of skeletal muscles with myogenic and neurogenic origin; denervation and inactivity atrophy

practice: Neurological examinations

8. week

lecture: Lecture: Impulse generation and conduction in the heart in normal and pathological conditions; myogenic and neural regulation of cardiac output; factors affecting cardiac performance; role of Starling mechanism in pathologic conditions

practice: Discussion of clinical relations (disorders of impulse generation and conduction): analysis of abnormal ECG records

9. week

lecture: Main features of coronary circulation; oxygen consumption and physical work. Aspects of cardiac performance; metabolic demand for physical activity

practice: Analysis of abnormal ECG records

10. week

lecture: Lecture: Regional circulation in resting condition (pulmonary circulation, cerebral flow, blood supply of skeletal muscles; renal and splanchnic circulation)

practice: Pulse qualities, blood pressure measurement, heart sound; changes in cardiovascular parameters during physical activity, restoration

11. week

lecture: Regional circulation during physical activity, redistribution of cardiac output.

Characteristics of circulation and changes in the flow during physical exercise in the skeletal muscle vessels

seminar: Case studies

12. week

lecture: Microcirculatory system, effects of physical exercise on its function; venous circulation, improvement the venous return by physical exercise

practice: Summary: neural and humoral factors acting on the precapillary vessels

13. week

lecture: Mechanical aspects of respiration: resistance of airways; static and dynamic respiratory parameters; factors affecting respiratory minute volume; effects of physical exercise on respiration
practice: Obstructive and restrictive respiratory disorders, pathophysiology, analysis of respiratory parameters; analysis of respiratory parameters during physical activity

14. week

lecture: Alveolar gas exchange in normal and pathological conditions; chemical and neural regulation of respiration; energetic aspects of physical work; metabolic changes during physical activity; physical activity and thermoregulation

practice: Normal and pathological breathing patterns; long term adaptation of cardiorespiratory system to physical activity

Requirements

Signature of Lecture Book

Attendance at lectures and seminars is compulsory. The signature of the Lecture Book may be refused for the semester in the cases of absences from more than two seminars.

Evaluation during the semester

The knowledge of students will be tested 3 times per semester using a written test system (mid-semester tests). Participation is compulsory.

Examination

The semester is closed by the end-semester exam (ESE) covering the topics of all lectures, seminars. It is not compulsory to take the ESE if the average of mid-semesters test reaches or higher than the passing limit (55%) and none of the individual tests' results are less than 40%.

The mark based on the average score of mid-semester tests is calculated according to the following table:

0 – 54 % fail (1)

55 – 64 % pass (2)

65 – 74 % satisfactory (3)

75 – 84 % good (4)

85 – 100 % excellent (5)

If one is not satisfied with this result, (s)he may participate in ESE during the examination period. A and B chances are written tests, C chance is oral presentation.

Actual information is available on the website of the Department of Physiology:

<http://phys.dote.hu/index.php?action=oldal&process=showpage&id=46>

The contact hours are completed by an e-learning module containing the course material and assessments.

The e-learning module is available at: <https://elearning.med.unideb.hu/course/view.php?id=434>

The e-learning module is aimed to support the effective learning process. The lectures cannot be substituted by e-learning activity. You can collect bonus points by fulfilment of different tasks in the module. 10% of the scores can be achieved in the e-learning module. The bonus points (maximum 10% of total) are added to the average score achieved in mid-term tests or ESE, if there is no performance below 40% and the average score is at least 55% without bonus points.

Subject: **COMMUNICATION**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Seminar: **14**

1. week

Lecture: Introduction to the concept of communication. Channels of communication. Verbal and non-verbal communication. The main non-verbal channels.

2. week

Lecture: The helping relationship. Influencing factors, principles. The role of empathy in the communication.

3. week

Lecture: Aggressive, passive and assertive communication. Effective communication techniques

4. week

Lecture:

The importance of communication with people in different situations. Difficulties in communication situations. Persuasive communication.

5. week

Lecture: Communication Disorders. Special issues in communication.

6. week

Lecture: Management of the conflicts occurred during the helping relationship. Communication with the elderly.

7. week

Lecture: Communication with impaired persons. Communication with the 'difficult' patient. Communication with acute patients.

8. week

Lecture: Consultation

Practical: Preparation for the field practice. Review of the basic concepts of communication, communication channels. Verbal and non-verbal communication.

9. week

Practical: Significance of the first impression. Analysis of our own communication styles. Aggressive, passive and assertive communication. Persuasive communication.

10. week

Practical: Film – the doctor.

11. week

Practical: Film – analyzing its communicational aspect.

12. week

Practical: Field practice – observation (no course).

13. week

Practical: Persuasive communication Effective communications techniques. Presentation of the field practice and feedbacks.

14. week

Practical: Presentation of the field practice and feedbacks.

Feedbacks. Written exam.

Requirements

Attendance at lectures is highly recommended, at practical hours is compulsory. If there are more than 2 absences from practical hours the module coordinator refuses the signature of the Lecture Book.

Subject: **BASICS OF RESEARCH METHODOLOGY**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **28**

1. week

Lecture: The principles of scientific inquiry. Validity, reliability, precision of research

2. week

Lecture: Types and process of scientific research

3. week

Lecture: Ethics of science

4. week

Lecture: Methods of quantitative research I

5. week

Lecture: Methods of quantitative research II

6. week

Lecture: Methods of qualitative research

7. week

Lecture: Orientation in the library

8. week

Lecture: Orientation in the scientific literature I

9. week

Lecture: Orientation in the scientific literature II

10. week

Lecture: Study design

11. week

Lecture: Collecting data, measurements, observations

12. week

Lecture: Data storage, processing, and analysis

13. week

Lecture: Interpreting, presenting and publishing results. Evidence-based practice

14. week

Lecture: Rules of scientific publication

Requirements

Prerequisite: Health Informatics II

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. E-learning course contains the course material.

The course is closed by a written end of semester exam (ESE). The grading scale is as follows:

<54%: (1) fail

55-64%: (2) pass

65-74%: (3) satisfactory

75-84%: (4) good

85-100%: (5) excellent

The course supported by an e-learning module. The attendance at lectures cannot be replaced by the e-learning activity! 10% of the scores in the ESE can be achieved in the e-learning module. The bonus points are added to the score achieved in the written exam above 55%. The „fail” cannot be improved by bonus points.

Subject: **KINESIOLOGY II**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **28**

Seminar: **28**

Practical: **84**

1. week

Lecture: Description and analysis of human movements by physical terms.

E Seminar: Fundamentals in physical examination, SOAP-NOTE – General process of examination.

Examination in pathological conditions based on James Cyriax's theory

A Seminar: Review of the anatomy of the trunk muscles, general rules of physical exercises.

Gravity, body positions, tools, lever arm used in the physiotherapy. Movement terminology: elongation, isometric and isotonic muscle contractions, synergisms.

2. week

Lecture: Structure and function of joints. Determination of osteokinematics and arthrokinematics.

E Seminar: Anamnesis and inspection of the pelvis and SI joint. Complex functional examination of pelvis and SI joint.

A Seminar: Analysing movements of trunk flexors in different positions.

3. week

Lecture: Structure and function of skeletal muscles. Types of muscle activity.

E Seminar: Complex functional examination of pelvis and SI joint.

A Seminar: Analysing movements of trunk extensors in different positions

4. week

Lecture: The vertebral column - general structure and function: the mobile segment, a typical vertebra, the intervertebral disk, articulation, ligaments and joint capsules. Function: kinematics and kinetics

E Seminar: Anamnesis and inspection of the lumbar spine. Complex functional examination of the lumbar spine.

A Seminar: Analysing movements of trunk lateral flexors in different positions

5. week

Lecture: Structure and function of the sacral and lumbar region, sacroiliac joint and the symphysis.

Effect of muscles on lumbar and sacral regions. Pelvico-lumbo-hip synergism. Analysis of the muscle synergism of the trunk.

E Seminar: Complex functional examination of the lumbar spine.

A Seminar: Analysing movements of trunk rotators in different positions

6. week

E Seminar: Anamnesis and inspection of the thoracic spine. Complex functional examination of the thoracic spine.

A Seminar: Muscle chains - synergism. Possibilities of improvement of proprioception by different tools. Compensatory mechanisms.

7. week

Lecture: Structure and function of the thoracic region: typical thoracic vertebra, articulations, kinematics and kinetics. Diaphragm, muscles associated with rib cage. Respiratory function

E Seminar: Anamnesis and inspection of cervical spine. Complex functional examination of the cervical spine.

A Seminar: Complex analysis of muscle chains of pelvis and trunk.

8. week

Lecture: Structure and function of the upper cervical region: typical cervical vertebra, articulations, kinematics and kinetics. Atlanto-occipital and atlanto-axial joints. Effect of muscles on the cervical regions. Lower functional region of the neck. Effect of muscles on the cervical regions.

Practice - Analysis: General rules of physical exercises, body positions and tools used in the

physiotherapy

Elongation, isometric and isotonic muscle contractions, synergisms (practical examples). Active exercises of trunk flexors in different positions by taking the principle of gradation into consideration: with and without tools, in pairs.

Practice – Examination: Rules and tools in examination. Inspection of posture, standing and gait pattern. Examination of pelvis and SI joints.

9. week

Practice - Analysis: Strengthening of the trunk flexors in different positions by taking the principle of gradation into consideration: with and without tools, in pairs.

Active exercises and strengthening exercises of the trunk flexors launched from supine position, and on oblique desk.

Practice – Examination: Examination of pelvis and SI joints II.

10. week

Lecture: Components of the shoulder complex: sterno-clavicular, acromio-clavicular joints, scapulo-thoracic functional attachment. Structure and function of the shoulder girdle.

Practice - Analysis: Dictation exercises for trunk flexors in different positions by taking the principle of gradation into consideration: gravity and lever arm.

Active exercises of the trunk extensors by taking the principle of gradation into consideration: gravity and lever arm.

Practice – Examination: Examination of lumbar spine.

11. week

Lecture: Components of the gleno-humeral joint. Structure and function, osteo and arthrokinematic motions of the gleno-humeral joint.

Practice - Analysis: Active exercises and strengthening of the trunk extensors in different positions by taking the principle of gradation into consideration: with and without instruments, in pairs.

Strengthening exercises of the trunk extensors launched from prone position, on all fours, creeping-, kneeling-, standing positions, and on oblique desk.

Practice – Examination: Examination of lumbar spine II.

12. week

Practice - Analysis: Active exercises of the trunk extensors in different positions by taking the principle of gradation into consideration: with and without tools, in pairs.

Strengthening exercises of the lateral trunk flexors and rotators with and without tools, exercises in pairs.

Practice – Examination: Examination of lumbar spine II.

13. week

Lecture: Complex overview of dynamic stabilizers of pelvis, trunk and shoulder girdle.

Practice - Analysis: Active exercises of the trunk lateral flexors and rotators in different positions by taking the principle of gradation into consideration: gravity and lever arm.

Active exercises of the trunk lateral flexors and rotators in different positions by taking the principle of gradation into consideration: with and without tools, in pairs

Practice – Examination: Examination of cervical spine.

14. week

Lecture: The temporo-mandibular joint: articular surfaces, disk, capsules and ligaments; mandibular motion and muscular control Examinations of the temporo-mandibular joint in physiological and pathological states; relationships between the functions of the temporo-mandibular joint and neck.

Practice - Analysis: Complex exercises of the trunk muscles in different positions by taking the principle of gradation

Strengthening exercises of the trunk muscles in different positions by taking the principle of gradation

Practice – Examination: Examination of cervical spine II.

Requirements

Attendance at lectures is highly recommended, attendance at seminars and practices is compulsory. If you miss more than 2 seminars or practices per modules, the signature may be refused.

Exam: The exam consists of three components: complex (theoretical +examination +analysis) exam should be taken in the exam period.

The final grade is calculated as the average of the results of the 3 components (theoretical +examination +analysis) if each of them are at least pass (2).

The grade cannot be improved separately during the semester. If any of the module grades is fail, then the final grade of the exam is fail.

Subject: **HUNGARIAN LANGUAGE I.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Practical: **28**

1. week

Lesson Greetings

2. week

Lesson Nationalities, languages

3. week

Lesson Places, numbers

4. week

Lesson Test your Knowledge

5. week

lesson Activities, times of day

6. week

Lesson Activities II

7. week

Lesson Revision (Midterm)

8. week

Lesson Everyday objects, food and drink

9. week

Lesson The menu, ordering, shopping

10. week

Lesson The weather

11. week

Lesson Test your knowledge 2

12. week

Lesson Body parts

13. week

Lesson Jobs, family relations

14. week

Revision 2 (Endterm+oral exams)

Attending the online language classes is compulsory. If a student joins the online class after 15 minutes the class starts, it is considered as an absence. In case of missing more than 10 percent of the lessons the student may not take the exam. For the successful completion of the course students should participate in the classes using their microphones and cameras and should complete all the assignments given by their teacher. Students have to take a written mid and final exams + oral form at the end of the course. Passing requirement for the mid and final tests is 60%.

(Students who do not complete the Hungarian Language Course cannot receive a signature).

90% 5 (jeles) excellent A

80% 4 (jó) good B

70% 3 (közepes) medium C

60% 2 (elégséges) satisfactory D

0-59% 1 (elégtelen) unsatisfactory – you failed F

Subject: **PHYSICAL EDUCATION II**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Practical: **28**

Content:

Practical: Sports events: Aerobic, Basketball, Handball, Horse-riding, Iceskating, Skiing, Soccer, Spinning, Swimming, Tennis, Volleyball. Spare time sports: body building, badminton, floorball, Pilates, Speed Minton, cardio-workout etc.

Requirements

The subject is a criterion condition for getting Certificate of Completion.

Registering for the Physical Education courses:

Step 1: register in Neptun system – you have to choose course

Step 2: you have to come in the P.E. Department (Móricz Zsigmond körút 22, 3rd Youth Hostel) to choose sport course

If you have any question don't hesitate to ask: nvkata@med.unideb.hu

Subject: **BASIC PSYCHOLOGY I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

1. week

Lecture:

Introduction, course requirements. Topics and methods of psychology. Psychological functions and behavior

2. week

Lecture:

Object and subject. Sensation and perception. Perception as a subjective experience. Good and bad subjective experiences: pleasure and pain. Conscious and unconscious

3. week

Lecture: Attention, memory, wakefulness and sleep. Stages of sleep

4. week

Lecture: Learning and conditioning. Classical and operant conditioning. Teaching and learning.

5. week

Lecture: Thinking, intelligence, creativity

6. week

Lecture:

Arousal, affect, emotion, mood, instinct. Basic emotions. Recognition and control of emotions, impulse control. Is there such a thing as emotional intelligence?

7. week

Lecture:

Drive, impulse, motivation. Hierarchy of motivation (Maslow, Ryan&Deci). Stimulation and incentive

8. week

Lecture: Structure and major theories of personality

9. week

Lecture:

Stages of psychological development. Expected competences and behaviors by age during normal development. Gender differences in psychology and behavior.

10. week

Lecture:

Social behavior 1. Attachment, mother-baby relationship, intimate relationship.

11. week

Lecture:

Social behavior 2. Attitudes, stereotypes. Expectation, conformity, identification and resistance. Conditions of group formation, group effects, collective decision making. Leadership styles

12. week

Lecture:

Stress and coping: stressful events, psychological and physiological reactions to stress. Acute and chronic stress and their impact on health. Coping skills.

13. week

Lecture:

Interrelationship of body and mind (psychosomatic diseases, impact of belief on the body)

14. week

Lecture: How to improve/treat psychological dysfunctions (psychotherapy, pharmacotherapy)

Requirements

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics and compulsory reading.

Subject: **PHYSIOLOGY II.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

Seminar: **14**

Practical: **14**

Topics

Physiology of the human body. Cell physiology, membrane transport mechanisms, significance of the membrane potential. Compartmentalisation of body fluids, cellular elements of the blood, blood types. Electrical and mechanical properties of the heart, neural and humoral regulation of the cardiac function, pathophysiological relations. Functional characteristics and regulation of the peripheral circulation in normal and pathophysiological conditions. Responses of the cardiovascular system to exercise. Functional characteristics of the respiratory system, neural and humoral regulation. Physiology of the gastrointestinal tract, motoric and secretory function, digestion, absorption. Metabolism and energy balance, qualitative and quantitative characteristics of nutrition. Thermoregulation and fluid balance of the body. General aspects of renal function; glomerular filtration, types of tubular transport processes. Fluid volume and osmoregulation, pH regulatory system of the body. Principles of the hormonal regulation, effects and function of the hormones. Sensory function of the nervous system, physiological basis of hearing and vision. Motor function of nervous system. Function and regulation of skeletal muscle. Pathology of motor function.

Subject: **INTRODUCTION TO LAW**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

1. week: Introduction to law, concept of law
2. week: The legal system, legal norm
3. week: Sources of law, scope of legislation
4. week: The state and its functions
5. week: Branches of governance, separation of powers
6. week: The parliament, the government
7. week: The president, the constitutional court
8. week: The judicial system
9. week: Legal relationships
10. week: Civil, political and personal rights
11. week: Corporations
12. week: Property law
13. week: Contractual law
14. week: Civil law - Criminal law

Subject: **MICROBIOLOGY I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

1. week

History of microbiology. Structure of bacterial cells. Essential and nonessential components. Cell walls of Gram-positive and Gram-negative bacteria. Virulence factors (capsule, enzymes). Microscopic examination.

2. week

Bacterial metabolism. Aerobic and anaerobic bacterial growth. Fermentation of sugars. Iron metabolism. Aerobic and anaerobic cultivation. Sterilization and disinfection.

3. week

The human microbiome. Types of bacterial infections. Bacterial pathogenesis. Toxin production: exotoxins and endotoxins. Infectious diseases and host defenses. Innate and adaptive immunity.

4. week

Laboratory diagnosis of bacterial infections. Rules for collecting clinical specimens. Serological reactions: precipitation, agglutination, and complement activation. Enzyme-linked immunosorbent assay (ELISA), fluorescent-antibody assay.

5. week

Bacterial vaccines. Antimicrobial drugs. Chemoprophylaxis. Antibiotic sensitivity.

6. week

Overview of the major Gram-positive bacteria: Staphylococci, Streptococci, Bacillus, Clostridia. Epidemiology and clinical findings. Laboratory diagnosis.

7. week

Overview of the major and Gram-negative bacteria. Enterobacteriaceae and non-fermentative Gram-negative bacilli. Zoonotic infections. Epidemiology and clinical findings. Laboratory diagnosis.

8. week

Skin and soft tissue infections caused by bacteria: Staphylococcus aureus, Streptococcus pyogenes, Clostridium perfringens.

9. week

Respiratory tract infections caused by bacteria. Streptococcus pyogenes, Haemophilus influenzae, Corynebacterium diphtariae, Bordetella pertussis, Streptococcus pneumoniae, Mycobacterium tuberculosis, Legionella pneumophila, Mycoplasma pneumoniae.

10. week

Intestinal infections caused by bacteria: Campylobacter jejuni, Salmonella spp., Shigella spp., Yersinia spp., Escherichia coli, Vibrio cholerae, Clostridium difficile.

11. week

Urinary tract infections caused by bacteria: Escherichia coli, Enterococcus faecalis, Staphylococcus saprophyticus, Proteus spp., Klebsiella spp., Enterobacter spp., Pseudomonas aeruginosa.

12. week

Sexually transmitted bacterial diseases. *Neisseria gonorrhoeae*, *Haemophilus ducreyi*, *Treponema pallidum*, *Chlamydia trachomatis*

13. week

Central nervous system diseases caused by bacteria: *Neisseria meningitidis*, *Escherichia coli*, *Streptococcus pneumoniae*, *Streptococcus agalactiae*, *Listeria monocytogenes*.

14. week

General mycology. Medically important fungi. General properties of fungi. Dermatomycoses, Subcutaneousmycoses. Systemic and opportunisticmycoses. Clinical diagnosis.

The students are required to attend the seminars. The Department may refuse to sign the students' Microbiology subject if they are absent more than two seminars in a semester.

Subject: **MOBILIZATION-MANUAL TECHNIQUES I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **14**

Practical: **70**

1. week

Lecture: PNF: Definition and history of the proprioceptive neuromuscular facilitation (PNF).

Introduction to classic Swedish massage

Practical: (1) Massage: examination of patient; palpation of subcutaneous connective tissue, blood vessels, lymph nodes, muscles, tendons and insertions of tendons; (2) Passive mobilization: goals, principles, rules of application. (3) PNF I: Introduction to the PNF. Basic positions of the PNF

2. week

Lecture: PNF: Basic procedures of the PNF. Specific treatment goals. Massage: basic techniques in Swedish massage; special, complementary techniques; theoretical knowledge of Swedish massage treatment of the back, the neck-shoulder girdle region, chest and abdomen

Practical: (1) Massage: Swedish massage treatment of the back (2) Passive mobilization: passive mobilization of the neck (3) PNF I: Examination of diagonal movements

3. week

Lecture: PNF: Fundamentals of the patterns, assessment, manual contact, resistant

Practical: (1) Massage: palpation of the muscles in the neck-shoulder girdle complex; qualitative evaluation of the muscular tone; Swedish massage treatment of the neck-shoulder girdle region (2) Passive mobilization: passive mobilization of the lumbar and thoracic spine (3) PNF I: scapula patterns: anterior elevation, posterior depression, anterior depression, posterior elevation

4. week

Lecture: Stretching: Definitions, theoretical elements of stretching

Practical: (1) Massage: Swedish massage treatment of the chest; expectoration of the bronchial secretion by percussion and vibration; support of thoracic breathing by intermittent intervention; Swedish massage treatment of the abdomen; Swedish massage treatment of the face; treatment of scars (2) Passive mobilization: passive mobilization of the scapulae (3) PNF I: pelvis patterns: anterior elevation, posterior depression, anterior depression, posterior elevation

5. week

Lecture: Passive mobilization: general purposes of the passive mobilization, theoretical elements of passive mobilization

Practical: (1) Massage: Swedish massage treatment of the lumbo-gluteal region; Swedish massage

treatment of the lower limb (2) Passive mobilization: passive mobilization of the shoulder (3) PNF I: arm patterns; flexion-abduction-external rotation; extension-adduction-internal rotation

6. week

Lecture: Massage: types of the reflex zone massage: segment massage, connective tissue and periosteal massage; segmentation of the human body, segmental innervation of the organs and tissues; physiological basis of the segment massage; patterns of the referring pain; viscera-cutaneous and viscera-muscular reflex pathways; definition of the Head and McKenzie zones; hyperalgetic dermatomes and spasms; painful myotomes

Practical: (1) Massage: examination of Head and McKenzie zones (2) Passive mobilization: passive mobilization of the elbow (3) PNF I: arm patterns; flexion-abduction-external rotation with elbow flexion and extension; extension-adduction-internal rotation with elbow flexion and extension

7. week

Lecture: Massage: the aim and application fields of the segment massage, duration, techniques

Practical: (1) Massage: preceding examinations of the patients; structure of the segment massage; practising techniques (2) Passive mobilization: passive mobilization of the wrist and hand joints (3) PNF I: arm patterns; flexion-adduction-external rotation; extension-abduction-internal rotation

8. week

Practical: (1) Massage: special manoeuvres; segment treatment; rules of the segment massage; importance of the maximal points, their mapping; segment massage treatment of the heart and the lungs (2) Passive mobilization: passive mobilization of the hip joints (3) PNF I: arm patterns; flexion-adduction-external rotation with elbow flexion and extension; extension-abduction-internal rotation with elbow flexion and extension

9. week

Practical: (1) Massage: segment massage treatment of the stomach, the liver and gallbladder (2) Passive mobilization: passive mobilization of the knee (3) PNF I: leg patterns; flexion-abduction-internal rotation; extension-adduction-external rotation

10. week

Practical: (1) Massage: examination of patient, practising techniques of the connective tissue massage (2) Passive mobilization: passive mobilization of the ankle and toe joints (3) PNF I: leg patterns; flexion-abduction-internal rotation with knee flexion and extension; extension-adduction-external rotation with knee flexion and extension

11. week

Practical: (1) Massage: practice of the pelvis techniques; treatment of the trunk (2) Passive mobilization: positioning techniques (3) PNF I: leg patterns; flexion-adduction-external rotation; extension-abduction-internal rotation

12. week

Practical: (1) Massage: lateral trunk pattern; treatment of the scapula; treatment of the chest; patterns for upper limbs; mobilization techniques (2) Passive mobilization: mobilization techniques (3) PNF I: leg patterns; flexion-adduction-external rotation with knee flexion and extension; extension-abduction-internal rotation with knee flexion and extension

13. week

Practical: (1) Massage: treatment of the abdomen and gluteal region; patterns for the lower extremities; repetition (2) Passive mobilization: repetition, practice (3) PNF I: repetition, practice

14. week

Practical: (1) Massage: practice exam (2) Passive mobilization: practice exam ((3) PNF I: practice exam

Requirements

Prerequisites: Anatomy II, Electro-, balneo-, hydro- and climatotherapy, Kinesiology I
Attendance at practices is compulsory. If you missed more than 2 practices per modules, the

ENGLISH PROGRAM BULLETIN FOR BSC IN PHYSIOTHERAPY

signature may be refused. Examination: The term mark consists of 2 components in each module: (1) theoretical and (2) practical knowledge will be assessed at the end of the semester. The grades of the modules will be averaged and will be determined as the final grade. If any of the partial grades is/are “fail”, the final grade is “fail”. You have a chance to improve the unsuccessful part(s) once in the examination period not later than the end of the third week.

Subject: **KINESIOLOGY III.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

Seminar: **14**

Practical: **84**

Subject: **PUBLIC HEALTH MEDICINE I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

Seminar: **14**

1. week

Introduction of Medicine

Introduction of Medicine. Course requirements

Diagnostic behaviour of physicians – case presentation. Prevention of major health diseases (primary, secondary and tertiary prevention). „Evidence based medicine”

Laboratory diagnosis, blood sampling, ABO and Rh blood group determination, examination of urine sediment. Molecular genetic methods.

2/3. weeks

Introduction of Public Health Medicine

The physician's ethical, clinical and legal accountability: health protection and prevention.

Clinically significant symptoms and compulsory questions. Case history and physical examination.

Medical ethics. History taking. General physical examination. Special examinations:

electrocardiography (ECG), blood gas analysis, rectal digital examination.

The importance of internal medicine in public health

The history and methods of public health and preventive medicine. Major public health issues in developing and developed countries

Imaging techniques (X-ray, CT). The basic principles of radiotherapy.

4/5. weeks

Metabolic disorders

Diabetes mellitus. Micro- and macrovascular complications of diabetes mellitus

The role of diet in type 2 diabetes mellitus

Diet in metabolic disorders. A practical approach to healthy eating

Obesity, lipid and other metabolic disorders

Diet in metabolic disorders

Insulin regimens and treatment, blood sugar measurement.

Diabetic recipes and a healthy diet

6/7. weeks

Cardiology

Epidemiology of heart diseases. Risk factors. Primary and secondary prevention. Acute coronary and chronic ischaemic heart disease (differential diagnosis of chest pain, acute coronary syndrome)

Physical examination of patients with cardiac disorders. Differential diagnosis of chest pain, acute coronary syndrome. ECG, exercise tolerance test, Holter-ECG. Echocardiography.

Cardiac failure: signs, diagnosis and treatment. Arrhythmias

Atherosclerosis, occlusive arterial disorders. Acute deep vein thrombosis.

Pacemaker therapy, defibrillation, radiofrequency ablation. Peripheral arterial disease, deep vein thrombosis and pulmonary embolism.

8/11. weeks

Emergency Medicine

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Oxyology (fundamental concepts, organization of a National Ambulance Service) Introduction of an Emergency Department, internal oxyology

CPR, BLS, ALS. Work at the local Emergency Department

The most important medical emergencies I.

Related topics

The most important medical emergencies II.

Related topics

The most important medical emergencies III.

Related topics

12. week

Urology

The basic principles of urology, examination of the genitourinary tract

Visiting wards and operating theatres, basic instruments in urology.

13. week

Nephrology

Acute kidney injury (acute renal failure), Chronic kidney diseases (chronic renal failure). Kidney transplantation

Renal Replacement Therapy and Extracorporeal Life Support.

14. week

Hypertension

Hypertension: clinical signs, classification, prevention and therapy

Blood pressure measurement, ambulatory blood pressure monitoring (ABPM). Ankle brachial pressure index (ABPI).

Requirements

During the semester there are going to be 2 written exams (weeks 7 and 13). 25 simple questions (from lecture and practice slides) are going to be asked on each occasion. At the end of the semester every student is going to get a mark based on his/her midterm exam results (maximum 50 points, 90-100% excellent, 80-89% good, 70-79% satisfactory, 60-69% pass, 0-59% fail). Every student can accept/turn down this mark. Those who are not willing to accept their marks have to take a written exam at the end of the semester during the exam period (25 simple questions from all semester topics, 90-100% excellent, 80-89% good, 70-79% satisfactory, 60-69% pass, 0-59% fail). Those who fail 2 times on the written exam during the exam period are going to take an oral exam (exam topics are the same as lecture and practice topics).

During the semester students have the chance to give short presentations (5-10 minutes, power point). Topics should be related to lecture topics but cannot be the same. These presentations are going to be given at the end of lectures during the semester (weeks 7 and 13). Maximum 3 points are going to be given for each presentation. These points are going to be added to your midterm exam results. Presentation slides should be sent to the coordinator's e-mail address (e-mail subject should be the following: student's name, title of presentation, date of presentation). If you turn down your mark given based on your midterm exams you have to take a written exam at the end of the semester and your additional points (given for your presentation) are going to be lost.

Subject: **HUNGARIAN LANGUAGE II**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Practical: **28**

1. lecke: Itt az ideje gyakorolni revision
2. lecke: Zoli, a debreceni randiguru
3. lecke: UniBike és a Nagyerdő
4. lecke: Debrcenbe utazik a családom
5. lecke: Panoráma a Nagytemplomból
6. lecke: Együtt a család Debrecenben (Revision)
7. lecke Van kedved moziba menni?
8. lecke Megyünk az egyetemre
9. lecke: Mit csinálsz a Malomparkban?
- 10- lecke: Kirándulunk Hortobágyon
11. lecke: Ez az utolsó óra? (Revision)

Szóbeli vizsgára készülés

Revision/End-term

Oral exam

Subject: **APPLIED TRAINING METHODS**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

Practical: **28**

1. week

Lecture: Basics of applied training methods - General purposes of movement therapy.

Seminar: Definition principles and elements of training.

Lecture: Basics of exercise physiology.

Seminar: Types of training, planning of a training program.

2. week

Lecture: Age-dependent characteristics of the endurance.

Seminar: Physical abilities and possibilities for improvement of conditional skills

Lecture: The physical loading.

Seminar: Criteria and rules of strengthening.

3. week

Lecture: Effect of physical load on the respiratory system

Seminar: Static and dynamic strengthening.

Lecture: Characteristics of muscle functions.

Seminar: Basic definitions and methods of speed training.

4. week

Lecture: Energetic aspects of muscle function.

Seminar: Rules and methods for improvement of flexibility

Lecture: Types of muscle contractions.

Seminar: Improvement of coordination skills.

5. week

Lecture: Effect of physical load on the movement system. Muscle fatigue.

Seminar: Types and characteristics of endurance training

Lecture: Methods of improvement of muscle strength and endurance

Seminar: Methods of improvement of endurance

6. week

Lecture: Features of endurance training programs

Seminar: Sport specific training theories and their adaptation to rehabilitation.

7. week

Lecture - Seminar: System of training materials

Lecture - Seminar: Criteria of training planning

8. week

Practice: General structure and rules of workout.

Practice: Principles and elements of warm-up and cool-down in practice.

9. week

Practice: General rules, principles and structure of strengthening in practice.

Practice: Strengthening – strength-endurance

10. week

Practice: Strengthening – maximal strength

Practice: Improvement of speed

11. week

Practice: Improvement of flexibility

Practice: Improvement of coordination skills

12. week

Practice: Rules, principles, techniques and structure of endurance training in practice. Low - impact, high - impact exercises, basics and possibilities of own zone loading during constant and interval type workout.

Practice: Difference between constant and interval type workouts. Demonstration of linear structured and choreographed workouts in practice.

13. week

Practice: Difference between Fartlek and interval type workouts.

Practice: Improvement of strength by circle training and interval method

14. week

Practice: Difference between special constant and interval type workouts

Practice: Practical exam.

Requirements

Attendance at lectures, at seminars and practices is compulsory. The signature may be refused if one has more than 1 times absences from each part.

The final end-result of the subject will be calculated based on the results of theoretical-seminars and practical components.

The theoretical component can be achieved by a written exam (theoretical questions) at the last week of the semester.

Calculation of results of written exam: 0-59% Failed (1), 60-69% Pass (2), 70-79% Satisfactory (3), 80-89% Good (4), 90-100% Excellent (5).

The practical component can be achieved by individual or group projects and dictation on practical lessons according to the previously given topics and “Accepted” or “Well accepted” grade on practical exam. If the student graded “Accepted” at practical exam 5% would be given to the result of written exam. If the student graded “Well accepted” at practical exam 10% would be given to the result of written exam.

If the student graded “Non accepted” at practical exam and/or 60% can't be achieved at written exam in theoretical component, corrective exam should be taken in the first 3 weeks of exam period.

The result of the subject can be corrected only one time in the first 3 weeks of exam period.

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE I.**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Practical: **42**

1. week

Emlékszel?

2. week

Napirend

3. week

Melyik a jobb?

4. week

Melyik a jobb?

5. week

A testem

6. week

Beteg vagyok

7. week

Ismétlés a tudás anyja (Midterm)

8. week

A család

9. week

A család

10. week

Csak azért is zumbázni akarok

11. week

Mit csináltál tegnap?

12. week

Mit csináltál? 10. Hol nyaraltatok?

13. week

Vizsga lesz! (Endterm)

14. week

Oral exam

Requirements

Attending the online language classes is compulsory. If a student joins the online class after 15 minutes the class starts, it is considered as an absence. In case of missing more than 10 percent of the lessons the student may not take the exam. For the successful completion of the course students should participate in the classes using their microphones and cameras and should complete all the assignments given by their teacher. Students have to take a written mid and final exams + oral form at the end of the course. Passing requirement for the mid and final tests is 60%.

(Students who do not complete the Hungarian Professional Course cannot receive a signature and grade).

90% 5 (jeles) excellent A

80% 4 (jó) good B

70% 3 (közepes) medium C

60% 2 (elégséges) satisfactory D

0-59% 1 (elégtelen) unsatisfactory – you failed F

Subject: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS (Respiratory physiotherapy, Cardiovascular rehabilitation)**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **28**

Practical: **84**

1. week

Lecture: Structure and function of the respiratory system (respiratory organs, respiratory muscles) – repetition

Practical: Examination of patients, process of examination

2. week

Lecture: Gas exchange in the lungs; regulation of breathing – repetition

Practical: Examination of patients, process of examination

3. week

Lecture: Classification of pulmonary diseases

Practical: Expectoration techniques; percussion and vibration of the chest; aerosol therapy, postural drainage; indications and contraindications

4. week

Lecture: Restrictive pulmonary diseases I (pneumonia)

Practical: Active expectorant techniques (active periodic breathing, forced expiratory techniques, autogenic drainage)

5. week

Lecture: Restrictive pulmonary diseases II (pleuritis)

Practical: Positive expiratory pressure techniques (flutter, PEP mask)

6. week

Lecture: Restrictive pulmonary diseases III (pulmonary abscess, empyema)

Practical: Rules, effects and contra-indications of the manual treatment of the chest

7. week

Lecture: Obstructive diseases of the airways I (chronic bronchitis, emphysema)

Practical: Manual mobilization of the chest (demonstration)

8. week

Lecture: Obstructive diseases of the airways II (bronchial asthma)

Practical: Manual mobilization of the chest (practice)

9. week

Lecture: Mucoviscidosis (cystic fibrosis)

Practical: Methods for strengthening the respiratory muscles (breathing exercises, exercises against resistance, inspiratory muscle training)

10. week

Lecture: Surgical interventions on the chest

Practical: Pre- and postoperative treatments of the patients

11. week

Lecture: Respiratory insufficiency

Practical: Prevention and treatment of postoperative respiratory insufficiency with physiotherapeutic methods

12. week

Lecture: Pulmonary manifestation of cardiovascular diseases

Practical: Training program for patients with pulmonary diseases (principles)

13. week

Lecture: Complex rehabilitation in COPD
Practical: Summary of the movement program in COPD

14. week

Lecture: Repetition
Practical: Practice
+14 hours demonstration.

Requirements

Prerequisite: Applied Training Methods, Basics of Internal Medicine

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences from the practical hours. Signature in the Lecture Book and passing the midterm practical exam are the conditions for the end of semester examination.

Subject: **BASICS OF DIETETICS**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

Introduction of dietetic nutrition. Basic definitions. Energy and food requirements. Nutrients. Characteristics for the nutrition of the Hungarian population. Hungarian nutrition recommendation. Food product knowledge. Food preparation methods. Basics of menu planning. Counting appropriate energy and nutrient intake for individuals. Obesity. Opportunities the healthy losing weight. Diet of Diabetes mellitus. Diet in Osteoporosis. Diet in Celiac Disease. Eating disorders. Possibilities of roboration. Food allergies treatment.

Subject: **PRINCIPLES OF HEALTH SCIENCES**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

1. week

lecture: Anatomy of the skeletal system

2. week

lecture: Anatomy of the organs

3. week

lecture: Neuroanatomy

4. week

lecture: Membrane potential, electrical and mechanical properties of the heart, neural and humoral regulation of the cardiac function in normal and pathophysiological conditions.

5. week

lecture: Functional characteristics and regulation of the peripheral circulation in normal and pathophysiological conditions. Blood. Functional characteristics of the respiratory system, neural and humoral regulation.

6. week

lecture:

Physiology of the gastrointestinal tract, motoric and secretory function, general aspects of renal

function,

7. week

lecture:

Principles of the hormonal regulation. Morphology and motor function of nervous system.

Function and regulation of skeletal muscle. Pathology of motor function. Autonomic nervous system.

Requirements

Prerequisites: Cardiorespiratory and Exercise Physiology, Neurophysiology, Physiology.

To attend the lectures is strongly recommended. The participation in the e-learning activity is compulsory. If you miss the e-learning activity and/or more than 2 lectures the signature of Lecture Book will be refused.

Subject: **HEALTH CARE LAW**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

1. week

Introduction to administrative law

Sources of administrative law

2. week

Management and control in public administration

Principles of public administration

3. week

Administrative proceedings

Types of cases

4. week

Significance of administrative proceedings

Administrative sanctioning measures

5. week

Application, request, suit

Nonsuit

6. week

Probative proceedings

7. week

The president, the constitutional court

Evidence

8. week

Closure of the procedure

Termination

9. week

Representation and suspension

Agency

10. week

Rulings

Case study

11. week

Procedural documents

Documents, public documents, official certificates

12. week

Fines

Sanctions of public administration

13. week

Timeline

Deadlines

14. week

Licensing health care services. Minimum requirements of health care services

Medical practices – GPs' clusters (GPC). Administrative control

Subject: **PRINCIPLES OF KINESIOLOGY**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

1. week

Examination of structural problems and functional dysbalances in the pelvico-lumbo-hip and thoraco-cervico-scapular complex. Sacroiliac dysfunction.

2. week

Analysis of structural problems and functional dysbalances in the pelvico-lumbo-hip and thoraco-cervico-scapular complex. Sacroiliac dysfunction.

3. week

Examination of structural and functional disturbances in the upper limb, neurological dysfunction in the upper limb, differential diagnosis. Dysfunctions in the cervicobrachial region.

4. week

Analysis of structural and functional disturbances in the upper limb, neurological dysfunction in the upper limb, differential diagnosis. Dysfunctions in the cervicobrachial region.

5. week

Examination of the physiological axes of the lower limb. Dysfunction of the knee and hip joints. 6. Arches of the foot and dysfunction. Examination of pathological gait.

7. week

Analysis of the physiological axes of the lower limb. Dysfunction of the knee and hip joints. Arches of the foot and dysfunction. Analysis of pathological gait. Complex muscle analysis of spine and extremities.

Subject: **MICROBIOLOGY II.**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

1. week

Lecture: The microbial world. Cell-mediated and antibody-mediated (humoral) immunity. Active and passive immunization

2. week

Lecture: Laboratory diagnosis of bacterial and viral infections. Sterilization and disinfection

3. week

Lecture: Structure of bacterial cells. Essential and nonessential components. Exotoxins and

endotoxins. Non-toxic virulence factors

4. week

Lecture: Overview of the major Gram- positive bacteria

5. week

Lecture: Overview of the major and Gram-negative bacteria

6. week

Lecture: Bacterial respiratory tract diseases. Skin and soft tissue infections caused by bacteria

7. week

Lecture: Sexually transmitted bacterial diseases. Central nervous system diseases caused by bacteria

8. week

Lecture: General mycology. Medically important fungi

9. week

Lecture: The structure and classification of viruses. The pathogenesis of viral diseases

10. week

Lecture: Respiratory tract infections caused by viruses

11. week

Lecture: Agents of viral gastroenteritis. Hepatitis viruses

12. week

Lecture: Agents of viral skin rash. Congenital virus infections

13. week

Lecture: The protozoal diseases

14. week

Lecture: Helminths. Ectoparasites

Requirements

The students are required to attend the lectures.

Examination End semester examination consists of an oral test. The student's performance will be assessed on a five-grade scale.

Subject: **MOBILIZATION-MANUAL TECHNIQUES II.**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Practical: **84**

1. week

Practical: (1) Soft tissue mobilization: the position of the soft tissue mobilization in the physiotherapeutic tool; indications, contraindications and treatment principles; palpation of the soft tissues (2) Joint mobilization: Biomechanical basics to joint structure and function (3) PNF II: Neck patterns: flexion-left lateral flexion-left rotation; extension- right lateral flexion-right rotation (4) Stretching: theoretical basis, definitions

2. week

Practical: (1) Soft tissue mobilization: Mobilization techniques for the neck-shoulder girdle region (2) Joint mobilization: Convex-concave basic rule, arthrokinematic motions in the upper extremities (3) PNF II: Trunk patterns: chopping, lifting (4) Stretching: demonstration of the stretching techniques; practice

3. week

Practical: (1) Soft tissue mobilization: Mobilization techniques applied at the dorsal, ventral and lateral sides of the chest (2) Joint mobilization: Convex-concave basic rule, arthrokinematic motions in the lower extremities (3) PNF II: Combined patterns for the trunk (4) Stretching:

stretching of the contracture-predisposed muscles of the upper limb: upper part of the trapezius muscle, levator muscle of the scapula

4. week

Practical: (1) Soft tissue mobilization: Mobilization techniques for the lumbar and pelvic girdle region; indications and contraindications (2) Joint mobilization: Traction and mobilization of the shoulder complex: sterno-clavicular-, acromio-clavicular joints and scapulo-thoracic functional attachment. Test and therapy (3) PNF II: Combined patterns for the trunk (4) Stretching: stretching techniques for latissimus dorsi and teres maior muscles

5. week

Practical: (1) Soft tissue mobilization: Mobilization techniques for the upper limbs; indications and contraindications (2) Joint mobilization: Traction and mobilization of the gleno-humeral joint. Test and therapy (3) PNF II: Techniques and application of Kabat exercises (4) Stretching: stretching techniques for maior and minor pectoral muscles

6. week

Practical: (1) Soft tissue mobilization: Mobilization techniques for the lower limbs; indications and contraindications (2) Joint mobilization: The elbow complex. Traction, ulnar-radial sliding and mobilization of the humero-ulnar and humero-radial articulations; test and therapy (3) PNF II: Mat activities: rolling (4) Stretching: stretching techniques for biceps brachii, brachioradial and brachial muscles

7. week

Practical: (1) Soft tissue mobilization: Theoretical basis and practice of the scar treatment (2) Joint mobilization: The elbow complex. Traction, dorsal-ventral sliding and mobilization of the superior and inferior radio-ulnar articulations; test and therapy (3) PNF II: Mat activities: crawling, kneeling, bridging (4) Stretching: stretching of the triceps brachii, pronator teres and palmaris longus muscles

8. week

Practical: (1) Soft tissue mobilization: Stretching techniques in pairs (2) Joint mobilization: The wrist complex: traction, gliding and mobilization of the radio-carpal and mid-carpal joints (3) PNF II: Mat activities: standing up (4) Stretching: repetition of the stretching methods applied on the upper extremities

9. week

Practical: (1) Soft tissue mobilization: Definition and position of deep massage technique in the mobilization techniques; indications and contraindications (2) Joint mobilization: The ankle and foot complex: traction and mobilization of the ankle, subtalar and transverse tarsal joints. Test and therapy (3) PNF II: Mat activities: gait training (4) Stretching: stretching of the contracture-predisposed muscles of the lower limb: iliopsoas, rectus femoris muscles and ischiocrural group

10. week

Practical: (1) Soft tissue mobilization: Treatment of the neck-shoulder girdle region (2) Joint mobilization: The knee complex: traction, sliding and mobilization of the tibio-femoral joint. Test and therapy (3) PNF II: Specific techniques: rhythmic stabilization, reversed stabilization (4) Stretching: stretching techniques for the adductor group of muscles and tensor fasciae latae muscle

11. week

Practical: (1) Soft tissue mobilization: Techniques on the chest (2) Joint mobilization: The knee complex: traction, sliding and mobilization of the patello-femoral, superior tibio-fibular joints and syndesmosis. Test and therapy (3) PNF II: Specific techniques: contract-relax, hold relax (4) Stretching: stretching techniques for the triceps surae and adductor hallucis muscles

12. week

Practical: (1) Soft tissue mobilization: Techniques on the upper extremities (2) Joint mobilization: The hip complex: traction, sliding and mobilization. (3) PNF II: PNF in the practice (4) Stretching: summary, practice

13. week

Practical: (1) Soft tissue mobilization: Techniques on the lower extremities (2) Joint mobilization:

Importance of techniques above in the practice (3) PNF II: Practice (4) Stretching: repetition, practice

14. week

Practical: (1) Soft tissue mobilization: Practice examination (2) Joint mobilization: Consultation (3) PNF II: Practice examination (4) Stretching: practice examination

Requirements

Prerequisite: Mobilization-Manual Techniques I

Attendance at practices is compulsory. If you missed more than 2 practices per modules, the signature may be refused.

Examination: The term mark consists of 2 components in each module: (1) theoretical and (2) practical knowledge will be assessed at the end of the semester.

Subject: **KINESIOLOGY PRACTICE**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Practical: **120**

Content:

Practical: Observation and examination of the posture; inspection and analysis of position and movements of the joints; palpation of the bones and soft tissues in the articulations; measurement of the range of the active and passive motions in the joints of the spinal column and extremities; analysis of movement in functional units; measurement of the muscle strength, determination of the closed and open position of the joints; investigation of the reason of dysfunction in the Cyriax's system; determination of the origin of the pain; observation of the locomotion; inspection and analysis of physiological and pathological patterns of the locomotion.

Requirements

Prerequisites: Mobilization-Manual Techniques II, Principles in Kinesiology

Educational objective: The aim of the practice is to deepen the theoretical knowledge in clinical circumstances, to get experience in the investigation of normal and pathological movement.

To take part in the clinical practice in kinesiology is criteria for the certificate of completion (absolutorium). You accept a signature in the Lecture Book, if you fulfil the requirements detailed in the Practice Lecture Book. The students are required to know: the observation and palpation of the movement system; measurement methods of the active and passive, isotonic and isometric movements; the most frequent special and functional tests in the examination of the movement system; the evaluation of subjective and objective findings, discover the origin of dysfunctions.

Subject: **BASICS OF PEDAGOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

1. week

Lecture: Basic concepts of pedagogy

2. week

Lecture: Principles of pedagogical activity

3. week

Lecture: Theories and trends in pedagogy

4. week

Lecture: Elements of pedagogical influence

5. week

Lecture: Values and aims. Process of pedagogical influence

6. week

Lecture: Fields of personality development

7. week

Lecture: Process of education postoperative nursing tasks; aseptic and hygienic environment

8. week

Lecture: Process of teaching and learning

9. week

Lecture: Edifying conduct

10. week

Lecture: Methodology (basics, influencing factors, methods, differentiation)

11. week

Lecture: Scenes of pedagogical activity (family, school, boarding schools, etc.)

12. week

Lecture: Key participants and their communication

13. week

Lecture: Consultation

14. week

Lecture: Theoretical and practical issues of planning

Requirements

Attendance at lectures is strongly recommended since the examination topics are equal to the lectured topics.

Subject: **BASICS OF SOCIOLOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

1. week

Lecture: Introduction to sociology and to the module

2. week

Lecture: Definition of health; gender and health

3. week

Lecture: Social class and health; ethnicity and health

4. week

Lecture: Families and changing family relationships

5. week

Lecture: Social forces, health and illness

6. week

Lecture: The social distribution of illness

7. week

Lecture: The experience of illness, social contexts

8. week

Lecture: Disability and chronic illness

9. week

Lecture: Mental health and mental illness

10. week

Lecture: The profession of medicine

11. week

Lecture: Other health care providers

12. week

Lecture: Patients and practitioners

13. week

Lecture: Main scopes of social policy in general and in Hungary I

14. week

Lecture: Main scopes of social policy in general and in Hungary II

Requirements

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics.

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE II.**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Practical: **42**

6. week

Ismétlés, Emlékszel?

7. week

Testrészek, Tünetek

8. week

Tünetek, Gyógyszerek

9. week

Klinikák és szakorvosok

10. week

Lassítsunk egy kicsit! Összefoglalás

11. week

Zárthelyi dolgozat

Szoktál kanapészörfölni?, Jó és rossz szokások

12. week

Tessék mondani

13. week

Anamnézis

14. week

Összefoglalás

14. week

Zárthelyi dolgozat; Szóbeli vizsga

Subject: **PHILOSOPHY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

1. week

Lecture: Martin Heidegger: What is Metaphysics?

2. week

Lecture: Martin Heidegger: What is Metaphysics?

3. week

Lecture: Rudolf Carnap: The Elimination of Metaphysics Through Logical Analysis of Language

4. week

Lecture: Rudolf Carnap: The Elimination of Metaphysics Through Logical Analysis of Language

5. week

Lecture: The Philosophical Questions of Health and Disease. Part 1

6. week

Lecture: The Philosophical Questions of Health and Disease. Part 2

7. week

Lecture: The Philosophical Questions of Health and Disease. Part 3

8. week

Lecture: The Philosophical Questions of Health and Disease. Part 4

Requirements

The attendance at lectures is strongly recommended, because the exam covers the lectured topics.

Subject: **PHARMACOLOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

1. week

Lecture: Introduction to general pharmacology (molecular aspects, excitation, contraction and secretion)

2. week

Lecture: Introduction to general pharmacology: pharmacokinetics and pharmacodynamics

3. week

Lecture: Chemical mediators and the autonomic nervous system. Cholinergic transmission. Effects of drugs on cholinergic transmission

4. week

Lecture: Noradrenergic transmission and other peripheral mediators

5. week

Lecture: The heart. Drugs that affect cardiac function

6. week

Lecture: The vascular system. Atherosclerosis and lipoprotein metabolism

7. week

Lecture: Respiratory pharmacology. The kidney

8. week

Lecture: Drugs used in the treatment of infections

9. week

Lecture: Pharmacology of gastrointestinal system. Blood sugar and diabetes mellitus

10. week

Lecture: Endocrine drugs

11. week

Lecture: Pharmacology of CNS drugs (transmitters and modulators, neurodegenerative disorders, general anaesthetic agents, anxiolytic and hypnotic drugs)

12. week

Lecture: Pharmacology of CNS Drugs (antipsychotic drugs, drugs used in affective disorders, antiepileptic drugs, CNS stimulants and psychotomimetic drugs)

13. week

Lecture: Analgesic drugs, local anaesthetics, anti-inflammatory drugs

14. week

Lecture: Muscle relaxants

Requirements

Prerequisites: Pathology

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. During the semester two obligatory test is required to fulfil. You have to take ESE during the examination period.

Subject: **PREVENTIVE MEDICINE AND PUBLIC HEALTH I.**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

Seminar: **28**

1. week

Lecture: The history of public health and preventive medicine. Scope and methods of public health. Organization of public health services. Introduction to human ecology

Practical: Physical and chemical examination of drinking water (laboratory demonstration)

2. week

Lecture: Global environmental pollution. Air pollution

Practical: Bacteriological and mycological examination of drinking water and food (laboratory demonstration)

3. week

Lecture: Toxicology of persistent organic pollutants, pesticides and organic solvents. Heavy metals in the human environment

Practical: Environmental radiation controlling laboratory (visit)

4. week

Lecture: Water pollution. Health hazards of ionizing radiation and radioactive substance. Health effects of climate change

Practical: Water quality control laboratory (visit)

5. week

Lecture: Scope of occupational health. Introduction to occupational toxicology. Chemical safety

6. week

Lecture: Occupational diseases. Public health nutrition, food-borne diseases

Practical: Health effects of workplace-related exposures

7. week

Lecture: Nutritional deficiency diseases. Overweight and obesity. Diet related diseases. The role of diet in the pathogenesis of cardiovascular diseases and malignant neoplasm

8. week

Lecture: Bioterrorism and possible tools of prevention. Health effect of noise. The history, definition and scope of epidemiology

9. week

Lecture: Statistical methods used in the analysis of epidemiological studies. Analyses based on aggregate statistics. Frequency measures in epidemiology

Practical: Biostatistical analyses

10. week

Lecture: Association measures in epidemiology. Types of etiological studies. Epidemiological study design

11. week

Lecture: Validity of etiological studies. Causal inference. Interventional studies

Practical: Types of epidemiological studies

12. week

Lecture: Clinical trials. Conclusion of epidemiological studies. Using epidemiological measures in practice

Practical: Searching, interpreting and using scientific literature

13. week

Lecture: Introduction to quantitative medicine. The concept and methods of health monitoring

14. week

Lecture: Monitoring morbidity of non-communicable diseases. Monitoring morbidity of communicable diseases. Priority setting in public health

Requirements

Prerequisites: Pathology, Basics of Research Methodology

Attendance of lectures is highly recommended. They are the best source of synthesized and structured information. Some new concepts and results are discussed exclusively at the lectures. Attendance of the laboratory practices, visits and seminars is obligatory. The course coordinator may refuse to sign the Lecture Book if a student is absent more than twice from seminars in a semester even if he/she has an acceptable excuse. The absences at seminars should be made up with another group (if there is) only in the same week (maximum 3 times during the semester). At the end of the semester students are required to take a written test which will cover the topics of all lectures and seminars of the first semester.

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS I**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

1. week

Lecture: Case history. The anatomical and physiological basis of neurology. Procedures in neurological diagnostics.

Seminar: Discussion of the lectured topics

2. week

Lecture: The signs of meningeal irritation. Cranial nerves.

Seminar: Discussion of the lectured topics

3. week

Lecture: The structure and pathology of the motor system.

Seminar: Discussion of the lectured topics

4. week

Lecture: The structure and pathology of the sensory system.

Seminar: Discussion of the lectured topics

5. week

Lecture: Normal and abnormal reflexes, the structure and pathology of coordination.

Seminar: Discussion of the lectured topics

6. week

Lecture: Cerebrovascular diseases.

Seminar: Discussion of the lectured topics

7. week

Lecture: Epilepsies. The typical pathological signs of cortical lobe lesions.

Seminar: Discussion of the lectured topics

8. week

Lecture: Dementias.

Seminar: Discussion of the lectured topics

9. week

Lecture: Parkinson's disease and other movement disorders.

Seminar: Discussion of the lectured topics

10. week

Lecture: Multiple sclerosis, infections of the central nervous system.

Seminar: Discussion of the lectured topics

11th week

Lecture: Sleep disturbances.

Seminar: Discussion of the lectured topics

12. week

Lecture: Tumours of the central and peripheral nervous system.

Seminar: Discussion of the lectured topics

13. week

Lecture: The pathology of spinal cord.

Seminar: Discussion of the lectured topics

14. week

Lecture: Injuries of the central nervous system.

Seminar: Discussion of the lectured topics

Requirements

Prerequisites: Pathology, Mobilization-Manual Techniques II

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences from the practical hours.

The ESE grade will be constructed from the results of clinical knowledge and theoretical and practical physiotherapeutic assessments. The scores of the modules may be improved selectively.

Subject: **ORTHOPEDICS FOR PHYSIOTHERAPISTS**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **10**

Seminar: **18**

1. week

Lecture: Frequency, pathology and diagnosis, conservative and operative treatment of congenital/developmental dysplasia, dislocation of the hip (DDH, CDH)

2. week

Lecture: Perthes' disease, transient synovitis of the hip joint. Slipped capital femoral epiphysis. Coxa vara

3. week

Lecture: Osteoarthritis of the hip. Aseptic necrosis of the femoral head. Replacement of the hip joint

4. week

Lecture: Functional anatomy of the foot. Congenital deformities and diseases of the foot

5. week

Lecture: Knee disorders. Knock knee and bow legs. Congenital, habitual and recurrent dislocation of the patella. Chondromalacia patellae. Osteoarthritis of the knee. Replacement of the knee joint

6. week

Lecture: Diseases of the neck and upper extremities

7. week

Lecture: Spondylolysis and spondylolisthesis. Congenital anomalies of the spine. Scheuermann's disease and its treatment. Degenerative changes of the spine. Spinal stenosis. Disc degeneration and prolapse. Sciatica. Ankylosing spondylitis

8. week

Lecture: Bone infection. Acute and chronic osteomyelitis. Suppurative arthritis

9. week

Lecture: Postural kyphosis. Scoliosis and its treatment

10. week

Lecture: Bone tumours and tumour-like lesions

Seminar: Introduction to e-learning module. Requirements.

11. week

Seminar: Most common orthopaedic diseases of the spine and hip joint. Basic concepts, anatomy, biomechanics. Video presentation – hip joint replacement, surgical correction of scoliosis.

Presentation of the most commonly used prosthesis and implants. X-ray presentation. Discussion of the lectured topics.

12. week

Seminar: Most common orthopedic diseases of the upper limb, knee joint and leg. Basic concepts, anatomy, biomechanics. Video presentation – shoulder and knee arthroscopy, anterior cruciate ligament replacement, knee joint replacement, surgical correction of foot deformities. Presentation of the most commonly used prosthesis. X-ray presentation. Discussion of the lectured topics.

13. week

Seminar: Discussion of findings: The significance of limb lengthening after total hip replacement

14. week

Seminar: Discussion of findings: The range of movement after total knee replacement

Requirements

Prerequisites: Biomechanics, Principles of Kinesiology

The attendance at lectures is strongly suggested, the attendance at seminars is compulsory. If you

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have more than 4-hour absence at seminars (consultations) or do not show activity in the e-learning module, the signature will be refused.

E-learning program:

It is compulsory to join the e-learning program. This program provides an opportunity for students to deepen their understanding of Orthopedics. The e-learning module is designated as seminar in the curriculum, it means that the participation in the e-learning activity and in the consultations is compulsory to everybody.

At the end of semester, you take a written ESE. The grade will be defined as the average of your e-learning scores and the exam scores according to the scale below

0-54%: fail (1)

55-64%: pass (2)

65-74%: satisfactory (3)

75-84%: good (4)

85-100%: excellent (5)

If your score in the examination is less than 55% there is no further calculation, the grade is fail (1).

Subject: **PATHOLOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

1. week

Lecture: The general definition of pathology; adaptive reactions of tissues and cells

2. week

Lecture: Cell-death: apoptosis, necrosis, and autophagy

3. week

Lecture: Inflammation: general properties of inflammatory reactions

4. week

Lecture: Acute and chronic inflammation: macro- and microscopic features

5. week

Lecture: Tissue regeneration, reparative reactions; fibrosis and scar formation

6. week

Lecture: Fluid and haemodynamic disorders. Haemorrhage, thrombosis

7. week

Lecture: Anaemic (pale) and haemorrhagic (red) infarction; embolia. Cerebrovascular disorders

8. week

Lecture: Immune pathology I

9. week

Lecture: Immune pathology II

10. week

Lecture: Pathology of neoplasia; molecular oncology

11. week

Lecture: Benign and malignant tumors; macro- and microscopic features; metastasis

12. week

Lecture: Genetic and environmental aspects of disease processes

13. week

Lecture: Pathology of infectious diseases

14. week

Lecture: Diseases of bones and joints

Requirements

Prerequisites: Cardiorespiratory and Exercise Physiology, Neurophysiology

Attendance at lectures is highly recommended. Written tests will be parts of the curriculum. In the examination period ESE as a written examination has to be taken containing multiple choice questions.

Subject: **PSYCHIATRY FOR PHYSIOTHERAPISTS**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

Practical: **14**

1. week

Lecture: Meaning and role of the psychiatry; definition of disease in psychiatry; organic psychiatric disorders; psychotic psychiatric diseases

2. week

Lecture: Basics of human communication; distress disorders, depression, suicide.

3. week

Lecture: Personality disorders; addictions: alcoholism and drug dependence; treatment of the psychiatric diseases

4. week

Lecture: Psychosomatic diseases; eating disorders; psychotherapies, cognitive therapy, relaxation methods, movement therapy; other psychotherapeutic methods; socio-therapy, possibilities for rehabilitation

5. week

Lecture: Emergency psychiatry.

6. week

Lecture: Active and passive movement therapy in psychiatric disorders

7. week

Lecture: Summary, consultation

Requirements

Prerequisites: Basics of Internal Medicine, Pathology

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics.

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS I.**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

1. week

lecture: Introduction to rheumatology: classification of diseases; social and economic relations of the rheumatology; history taking and physical examinations

2. week

lecture: Osteoarthritis, spondylosis, low back pain

3. week

lecture: Soft tissue rheumatism, regional pain syndromes, compression syndromes

4. week

lecture: Metabolic bone diseases, osteoporosis

5. week

lecture: Crystal arthropathies

6. week

lecture: Rheumatoid arthritis: clinical symptoms, diagnosis, therapy

7. week

lecture: Juvenile idiopathic arthritis, Felty syndrome, Caplan syndrome

8. week

lecture: Spondyloarthropathies: ankylosing spondylitis, psoriatic arthritis

9. week

lecture: Infectious and reactive arthritides

10. week

lecture: Introduction to immuno-pathology and autoimmunity. Autoimmune diseases

11. week

seminar: Degeneration

12. week

seminar: Bone diseases, gout

13. week

seminar: Arthritis

14. week

seminar: Therapy, anti-inflammatory drugs, immunosuppression

Requirements

Prerequisites: Basics of Internal Medicine, Principles of Kinesiology

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance at seminars is compulsory. If you missed more than 2 seminars, the signature may be refused. You have to take ESE during the examination period.

Subject: **OBSTETRICS AND GYNECOLOGY FOR PHYSIOTHERAPISTS**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

Practical: **14**

1. week

Lecture: (C) Diagnostic methods in gynecology. Physiological and abnormal menstrual cycle. Gynecological infections. Therapeutic principles

2. week

Lecture: (C) Pathological pregnancy, abortion

3. week

Lecture: (C) Process of the birth; life-threatening states in the obstetrics

4. week

Lecture: (C) Disorders of menstruation; family planning, contraception

Practical: (C) Clinical demonstration: pre-and postoperative patient care

5. week

Lecture: (C) Gynaecological inflammations; benignant gynaecological tumours

Practical: (C) Clinical demonstration: pre-and postoperative patient care

6. week

Lecture: (C) Malignant tumours

Practical: (C) Clinical demonstration: pre-and postoperative patient care

7. week

Lecture: (C) Surgical interventions

Practical: (C) Clinical demonstration: visit in the delivery room, puerperal patient care

8. week

Lecture: (C) Mid-semester examination (PT) Anatomy of pelvic floor, incontinence

Practical: (PT) Pre- and postoperative physiotherapy in gynecology

9. week

Lecture: (PT) Stages of preparation for delivery; significance of team work, tasks of the members in the team. Structure of the pregnancy training, alternative birth

Practical: (PT) Special breathing exercises in gynecology

10. week

Lecture: (PT) Synchronization of the stage of pregnancy and the training; relax methods, significance of the stretching exercises, exercises in early postpartum period, structure of the baby-mother training

Practical: (PT) Special exercises in prepartum period

11. week

Lecture: (PT) Significance of the physiotherapy in gynecology; principles and structure of postoperative exercises

Practical: (PT) Complex training during pregnancy

12. week

Lecture: (PT) Principles and structure of postoperative exercises

Practical: (PT) Puerperal training, mother-baby exercises

13. week

Lecture: (PT) Physiotherapeutic possibilities in the treatment of gynecology diseases

Practical: (PT) Physiotherapy in menopause

14. week

Lecture: (PT) Osteoporosis: possibilities of the physiotherapists for intervention

Practical: (PT) Physiotherapy in postmenopausal period

Requirements

Prerequisites: Basics of Internal Medicine, Principles of Kinesiology

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance at practical hours is compulsory. If you have more than 6-hour absence the signature in the Lecture Book will be refused.

Subject: **TRAUMATOLOGY FOR PHYSIOTHERAPISTS**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

1. week

Lecture: (1) The place of traumatology in medicine. Epidemiology of injuries, significance to the national economy. Classification of injuries. Closed and open mechanical injuries. Progression of wound healing. Classification of wounds. Methods of wound care. (2) Closed and open soft tissue injuries. Contusion, compression skin necrosis, subcutaneous hematoma. Closed tendon and muscle

injuries. Joint sprains and dislocations. Basic principles of plastic surgery. Methods of ligament replacement and bone grafting

2. week

Lecture: (3-4) Progression of bone healing (biological, biomechanical factors). Occurrence and recognition of fractures. Classification of closed and open fractures. Basic principles of conservative fracture treatment. Indications of osteosynthesis. The role of the AO (ASIF) in the treatment of operative treatment. Advantages and disadvantages of operative treatment. Biological osteosynthesis

3. week

Lecture: (5-6) Multiple and combined injuries. Treatment tactics of serious injuries. Life-saving, first-aid, transport. Basic principles of clinical treatment of seriously injured patients. Traumatological hemorrhagic shock. Shock treatment. Point systems for determination of seriousness of patient condition

4. week

Lecture: (7) Types of bleeding. Temporary stoppage of bleeding. Treatment of open and closed vessel injuries. Nerve injuries. Morphology and physiology of nerve regeneration. Basic principles of treatment of peripheral nerve injuries. Injuries of the brachial plexus. Treatment of nerve damage (tunnel syndromes). (8) Specific injuries to growing bones and their principles of treatment. Common injury combinations and characteristic injuries in childhood. Early and late complications

5. week

Lecture: (9) Craniocerebral injuries. Fractures of the skull. Recognition and treatment of intracranial bleeding. Maxillo-facial injuries. (10) Classification and diagnosis of spinal injuries. Fractures of the vertebrae with and without neurological damage. Conservative and operative fracture treatment. Physical therapy, follow-up and rehabilitation of spinal injuries

6. week

Lecture: (11) Chest injuries. Rib fractures. Penetrating chest injuries. Pneumothorax, haemothorax. Lung contusion. Open injuries of the lungs. Injuries of the heart and pericardium. Cardiac tamponade. Chest drainage and thoracotomy. (12) Closed and open injuries of the abdominal cavity. Diagnosis and operative treatment of parenchymal organs. Rupture of the diaphragm. Thoracoabdominal injuries. Injuries of retroperitoneal organs. Urogenital injuries

7. week

Lecture: (13) Fractures of the forearm and region of the elbow. Supracondylar fractures. Intraarticular fractures of the distal upper arm. Stable and unstable elbow dislocations. Fractures of the radial head and neck. Fractures of the olecranon. Fractures of the forearm diaphysis. Monteggia and Galeazzi fractures. (14) Soft-tissue injuries of the shoulder. Dislocations of the clavicle. Shoulder dislocations. Fractures of the clavicle, scapula and proximal part of the upper arm. Injuries of the rotator cuff. Adhesive and restrictive capsulitis. Chronic shoulder instability. Fractures of the humerus diaphysis

8. week

Lecture: (15) Fractures of the distal forearm. Fracture in loco typico of the radius (Colles' fracture). Fractures of the distal radius. Fractures of the scaphoid bone. Perilunar dislocation. Fractures of the metacarpal bones and phalanges. Follow-up and physiotherapy of hand injuries. (16) Basic principles of hand surgery. Types of tendon and nerve injuries. Primary suture and secondary replacement. Carpal instability. Septic complications of hand injuries. Revascularization and replantation

9. week

Lecture: (17-18) Pathomechanism and classification of pelvic fractures. Diagnostic tools. Conservative and operative treatment. Fractures of the acetabulum. Dislocation of the hip

10. week

Lecture: (19) Causes of the occurrence of fractures of the femur neck, characteristics of fractures in older patients. Garden classification. Methods of operative treatment. Principles and possibilities of

prosthesis implantation. Per- and subtrochanteric fractures. Diagnosis and operative treatment of these fractures. (20) Fractures of the distal femur. Characteristics of intraarticular fractures. Patellar fracture. Rupture of the quadriceps tendon

11. week

Lecture: (21-22) Closed and open diaphysis fractures of the femur and lower leg. Methods of intramedullary stabilization. Plate osteosynthesis. External fixator. Classification, diagnosis and treatment of fractures of the tibial condyle

12. week

Lecture: (23-24) Biomechanics of the knee. Mechanisms of knee injuries. Meniscus injuries. Diagnosis and treatment of ligament injuries of the knee. Hemarthrosis. Osteochondritis dissecans. The role of arthroscopy in diagnosis and treatment

13. week

Lecture: (25) Pilon fractures of the tibia. Ligament injuries of the ankle. Classification, diagnosis and treatment of ankle fractures. (26) Fractures of the talus and calcaneus. Subtalar dislocation. Fractures of the bones of the foot and metatarsals

14. week

Lecture: (27-28) Recognition and treatment of posttraumatic pathological states. Compartment syndromes (especially of the lower leg). Immobility damage, fracture illness. Sudeck dystrophy. Delayed union and non-union (pseudoarthrosis). Post-traumatic arthritis. Wound infections. Purulent arthritis. Osteitis, osteomyelitis. Gas gangrene. Early recognition and treatment of infections

Requirements

Prerequisite: Principles of Kinesiology

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. You have to take ESE during the examination period.

Subject: **BIOETHICS**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **14**

1. week

Lecture: The emergence of bioethics; the basic features of this discipline

2. week

Lecture: The nature of ethical decision making in clinical context

3. week

Lecture: The principles of modern bioethics

4. week

Lecture: Paternalism and anti-paternalism in modern bioethics

5. week

Lecture: Patients' rights (in Hungary and in other countries)

6. week

Lecture: Informed consent; informing the patients in a new communicative environment. The ethical aspects of living with disabilities

7. week

Lecture: The Hippocratic tradition in health care ethics

8. week

Lecture: End-of-life decisions

9. week

Lecture: Basic questions in contemporary research ethics

10. week

Lecture: Ethics of new biotechnologies

11. week

Lecture: The ethical aspects of physiotherapeutic practice

12. week

Lecture: Ethics and medical anthropology of disability

13. week

Lecture: Ethics of nursing

14. week

Lecture: Basic questions in public health ethics

Requirements

Attendance in the lectures is required. Usable understanding of the core theoretical concepts and conceptions is required as well as the knowledge on the actual patients' rights regulation.

Subject: **INFANT CARE AND PEDIATRICS FOR PHYSIOTHERAPISTS**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

Practical: **28**

1. week

Lecture: (C) Introduction to pediatrics. Genetic disease. Congenital disorders.

Practical: (PT): Physiotherapy in pediatrics, general treatments

2. week

Lecture: (C) The embryo and the newborn. Perinatal events in healthy mature neonates. Care of the newborn. The infant feeding, development and growth, care. Natural and artificial feeding.

Psychomotor development and mental retardation. Premature disorders (harmful consequences of oxygen therapy, BPD, ROP)

Practical:

(C) Demonstration practice (PT) Physical examination in pediatrics. Coordination and sensory training for nursing school and elementary school children

3. week

Lecture: (C) Diseases of the respiratory system. Bronchial asthma. Congenital heart defect.

Condition after heart surgery

Practical: (C) Demonstration practice (PT) Principles of the neurohabilitation; conductive pedagogy

4. week

Lecture: (C) The bones, joints and skeletal system disorders. Haemophilia. Bone tumours. Kidney diseases

Practical:

(C) Demonstration practice (PT) Examination and treatment of the movement system disorders, developmental anomalies and acquired disorders of the upper limb

5. week

Lecture: (C) Mucoviscidosis. Obesitas

Practical: (C) Demonstration practice (PT) Tools for treatment in chronic pulmonary diseases in childhood (cystic fibrosis, bronchial asthma)

6. week

Lecture: (C) Diabetes mellitus. Consultation

Practical: (C) Demonstration practice (PT): Examination and treatment of the movement system disorders, developmental anomalies and acquired disorders of the lower limb

7. week

Lecture: (C) Consultation

Practical:

(PT) Examination and treatment of the movement system disorders, developmental anomalies and acquired disorders of the lower limb

8. week

Lecture: (C) Mid-term exam

Practical:

(PT) Examination, symptoms, general characteristics of the movement therapy. Movement therapy of the neuromuscular diseases

9. week

Practical: (PT) Complex rehabilitation of CP. Special manual techniques

10th week

Practical:

Bobath method. Special manual techniques

11. week

Practical: (PT) Bone dysplasia and developmental anomalies

12. week

Practical: (PT) Orofacial training. Sensory integration therapy

13. week

Practical:

(PT) Adapted physical education; adapted sport rehabilitation

14. week

Practical: (PT) Importance of the cooperation between professionals (physiotherapist, conductor, somatopedagogue, etc.) involved in the therapeutic process

Requirements

Prerequisites: Principles of Kinesiology, Neurology for Physiotherapists I

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 6-hour absences from the practical hours

Subject: **INFANT CARE AND PEDIATRICS CLINICAL PRACTICE**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Practical: **80**

1. week

Practical: Infantile cerebral palsy; congenital diseases (e.g. myelomeningocele); respiratory diseases in childhood; metabolic syndromes; orthopaedic diseases in childhood; neurological injuries in childhood; other paediatric diseases

Requirements

Prerequisite: Infant Care and Pediatrics for Physiotherapists I-II

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To take part in the clinical practice in pediatrics is a criterion for the Certificate of Completion (absolutorium). You accept a signature in the Lecture Book, if you fulfil the requirements detailed in the Certification of Clinical Practices.

Educational objective: Students learn the special profile of the department; special methods of examination and therapy learn to communicate in a professional environment, as well as with patients and their relatives. Skills to be acquired: problem identification, analysis, examination with and without supervision, preparation and implementation of treatment plans, assessment of patients' progress, recognition of acute and life threatening conditions and acting in emergency, communication skills (with patients and health care professionals), keeping the ethical standards of the profession. The students are required to perform the examinations, making plan for physiotherapy and carry out the treatment under supervision.

Subject: **PHYSIOTHERAPY PRINCIPLES OF INTERNAL MEDICINE**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **14**

1. week

Lecture: Pulmonary diseases, differential diagnosis

2. week

Lecture: Respiratory interventions - passive methods, indications and contraindications

3. week

Lecture: Respiratory interventions - active methods, indications and contraindications

4. week

Lecture: Breathing exercises and training programs in pulmonary rehabilitation

5. week

Lecture: Therapeutic intervention in restrictive pulmonary diseases

6. week

Lecture: Therapeutic intervention in obstructive pulmonary diseases

7. week

Lecture: Manual techniques in pulmonary rehabilitation. Physiotherapy according to surgical intervention

8. week

Lecture: Consultation, discussion

9. week

Lecture: Physiotherapeutic methods, functional tests and treatment in angiology: arterial diseases

10. week

Lecture: Physiotherapeutic methods, functional tests and treatment in angiology: venous diseases

11. week

Lecture: Causes and symptoms of the lymphedema, components of the complex treatment

12. week

Lecture: Cardiovascular rehabilitation: movement therapy in the acute stage.

13. week

Lecture: Cardiovascular rehabilitation: movement therapy in the early, late and post convalescent stages.

14. week

Lecture: Significance of the movement therapy in the treatment of cardiovascular complications in hypertension, diabetes mellitus, and obesity

Requirements

Attendance at lectures is highly recommended since the lectured topics are equal to the topics in examination.

Subject: **PREVENTIVE MEDICINE AND PUBLIC HEALTH II.**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **28**

Seminar: **28**

1. week

Introduction to the epidemiology of infectious diseases

The spread of infectious diseases, indicators of measuring the infectivity

2. week

Epidemic curves

The basics of statistical inference

3. week

The basics of sample size calculation

Role of analytical studies in outbreak investigations

4. week

Epidemiology of HIV / AIDS

Surveillance of nosocomial diseases

5. week

The practical aspects of the implementation of outbreak investigation

Prion diseases

Epidemiology of respiratory infectious diseases

6. week

Epidemiology of tuberculosis

Epidemiology of gastrointestinal diseases and hepatitis

7. week

Stratified analysis

Introduction of Epi Info software

Editing data entry form using the Epi-Info software

8. week

Data entry (case study)

Data management (case study)

9. week

Outbreak investigation - descriptive analysis (case study)

Outbreak investigation - analytical analysis (case study)

10. week

Stratified analysis (case study)

Dynamics of infection (Case Study2)

Statistical power estimation using PS software (Case Study)

11. week

Monkey pox (Case Study)

Epidemiology of tuberculosis in developed countries (case study)

12. week

Hepatitis outbreak investigation (Case Study)

14. week

Statistical measures I.

Statistical measures II.

Subject: **PHYSIOTHERAPY OF THE MOVEMENT SYSTEM I.**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **42**

Seminar: **28**

Practical: **56**

1. week

Lecture:

T-lecture: Basic elements of the physiotherapy in traumatology; prevention and treatment of contractures; other physiotherapeutic interventions; position of manual therapy in traumatology; examination of patients. Functional treatment of spinal-fractured patients without neurological symptoms; treatment of a corset-wearing patient

O-lecture: Physiotherapy in orthopedics; physiological posture, analysis of the muscle chain.

Seminar: T-seminar: Group and individual training programme for the spinal-fractured, corset-wearing patients; innervation exercises; strengthening of the dorsal and abdominal muscles; balance improvement. Patient examination; pre- and postoperative physiotherapy methods

O-seminar: Examination, diagnostics, general treatment methods in orthopedics physiotherapy

2. week

Lecture:

T-lecture: Treatment of a patient with spinal cord injury; characteristic symptoms in special cases; special fields of the functional treatment in spinal cord injury

O-Lecture: Postural deformities: background and consequences

Seminar:

T-seminar: Training for spinal cord injured patients; rules of positioning; training in the bed; exercises for changing the position; use of the wheelchair, solution of the life situations; relief of contracture

O-seminar: Examinations; rules of exercises in the typical forms of the postural deformities.

Targeted physiotherapy for the kyphotic and lordotic spine.

3. week

Lecture:

T-lecture: Injuries of the elbow; complications; possibilities of the active movement in the neighbouring joints; complex functional treatment; forearm fractures; fracture of the distal radius; complications, treatment

O-lecture: Developmental disorders of the spine, complex physiotherapy.

Seminar:

T-seminar: Treatment after cancelling the corset; graded mobilization, subaquatic therapy, load-free positions; grades of the loading; mobilization of the spinal column in every direction; treatment with conservative methods.

O-seminar: Examinations; rules of exercises in the typical forms of the postural deformities.

Targeted physiotherapy for the kypholordotic spine and the flat back.

4. week

Lecture: O-lecture: Scoliosis – classification, types, diagnosis, general treatment

Practical:

T-practice: Functional treatment of the shoulder region; possibilities during fixation; methods for recovery of the scapulo-humeral rhythm; practice of the everyday movements; complementary therapy depending on the fracture healing. Individual training for shoulder-injured patients; load-free and loaded positions; use of instruments; paired exercises; conducted passive and active exercises

O-practice: Treatment of scoliosis at different location.

5. week

Lecture:

T-lecture: Individual training for shoulder-injured patients; load-free and loaded positions; use of instruments; paired exercises; conducted passive and active exercises.

O-lecture: Scoliosis: combined exercise and corset therapy, postoperative treatment

Practical:

T-practice: Functional treatment of the shoulder region; possibilities during fixation; methods for recovery of the scapulo-humeral rhythm; practice of the everyday movements; complementary therapy depending on the fracture healing

O-practice: Treatment of scoliosis at different location.

6. week

Lecture:

T-lecture: Injuries of the elbow; complications; possibilities of the active movement in the neighbouring joints; complex functional treatment; forearm fractures

O-lecture: Aseptic bone necrosis

Practical:

T-practice: Fracture of the distal radius; complications, treatment

O-practice: Postoperative treatment of scoliosis.

7. week

Lecture:

T-lecture: Group and individual training for shoulder-injured patients; load-free and loaded positions; use of instruments; paired exercises; conducted passive and active exercises

O-lecture: Developmental disorders in the neck and shoulder girdle: congenital torticollis, Klippel-Feil syndrome, scapula elevata; prosthesis in the shoulder –postoperative physiotherapy

Practical:

T-practice: Group and individual training for elbow-injured patients; requirements for the individual treatment; isometric and isotonic exercises

O-practice: Treatment of scoliosis at different location. Chest deformity

8. week

Lecture:

T-lecture: Physiotherapy of the hand-injured patients; special aspects of physical examinations; treatment of tendon injuries; structure of the pre- and postoperative trainings; applied medical aids; traumatic nerve injuries on the upper limb; determination of the state; aspects and methods of the treatment

O-lecture: Disorders of the shoulder; habitual luxation of the shoulder Complex physiotherapy in the brachial plexus lesion

Practical:

T-practice: Treatment of the hand injuries; semi-passive and passive methods; use of Carpenter and Brooks splints; treatment of peripheral nerve injuries; use of selective stimulus and diadynamic currents; role of the passive mobilization

O-practice: Physiotherapy of static changes of the spine: sacralisation, lumbarisation, spondylitis, spondylolysis; points of view of the examination and of the treatment.

Physiotherapy of septic bone necrosis; Scheuermann disease, Perthes syndrome.

9. week

Lecture:

T-lecture: Pelvic fractures; treatment under extension and after osteosynthesis; graded load, subaquatic training; functional treatment of the traumatic hip luxation; early and late complications, arthrosis

O-lecture: Congenital and acquired disorders of the elbow and hand, physiotherapy

Practical:

T-practice: Surgical treatment of the pelvic fractures; extension training, active training in the bed, graded mobilization

O-practice: Physiotherapy of disorders of the neck and shoulder girdle, the elbow and the wrist complex

10. week

Lecture:

T-lecture: Movement therapy of the femur neck fractured patients; mobilization in the case of movement-stable or load-stable osteosynthesis

O-lecture: Postoperative physiotherapy of prosthesis in the shoulder

Practical:

T-practice: Conservative functional treatment of the hip fractures; positioning, expansion; processing the active training in the bed; education of the use of wrap

O-practice: Physiotherapy in disorders of hip joint

11. week

Lecture:

T-lecture: Conservative functional treatment of the hip fractures; positioning, expansion.

O-lecture: Congenital and acquired disorders of the hip complex

Practical:

T-practice: Processing the active training in the bed; education of the use of wrap

O- practice: Postoperative physiotherapy and rehabilitation programme after total hip endoprosthesis

12. week

Lecture:

T-lecture: Ankle injuries; treatment; complementary treatment of complications; physiotherapy in Achilles tendon rupture

O-lecture: ACL reconstruction

Practical:

T-practice: Knee and ankle injuries

O- practice: Postoperative physiotherapy and rehabilitation programme after total knee endoprosthesis

13. week

Lecture:

T-lecture: Crural fractures; complications; treatment of a fixateur externe wearing patient; mobilization; ankle injuries; treatment; complementary treatment of complications

O-lecture: Congenital and acquired disorders of the knee

Practical:

T-practice: Standing and gait without loading, using crutch than bar; formation of the right gait cadence; education of the use of crutch in a three-point gait

O-practice: Disorders of the foot. Pes equinovarus, pes planus exercise therapy

14. week

Lecture:

T-lecture: Post amputation training; stub care, prevention of contractures; phantom training; gait teaching; prostheses on the upper and lower limbs; multiple traumatization; potential physiotherapy; active breathing exercises for chest-injured patients; interventions for rehabilitation

O-lecture: Congenital and acquired disorders of the ankle and the foot complex

Practical:

T-practice: Physiotherapy for the chest- and abdomen-injured patients; breathing exercises; improvement of circulation; general conditioning

O- practice: Postoperative sepsis. Amputation.

Requirements

Prerequisites: Mobilization-Manual Techniques II, Orthopedics for Physiotherapists, Traumatology for Physiotherapists

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 6-hour absences from the practical hours.

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS II.**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **14**

Practical: **28**

1. week

Lecture: Characteristics of the normal movements, general introduction to Bobath's method

Practical: (PT) Characteristics of the normal movements

2. week

Lecture: (PT) Central paresis and paralysis; stroke in the adult- and childhood; features, symptoms, complication

Practical: (PT) Central paresis and paralysis

3. week

Lecture: (PT) Poststroke movement therapy, rehabilitation

Practical: (PT) Principles of post-stroke movement therapy

4. week

Lecture: (PT) Types of ataxia, principles of their movement therapy

Practical: (PT) Principles of the movement therapy in ataxia

5. week

Lecture: (PT) Central and peripheral cranial nerve disorders; physiotherapy of central and peripheral dizziness

Practical: (PT) Improvement of balance, basic and complex exercises

6. week

Lecture: (PT) Muscular diseases, myopathies and myotonies

Practical: (PT) Characteristics of the movement therapy in muscular diseases

7. week

Lecture: (PT) Spinal Muscular Atrophy (SMA), Amyotrophic Lateral Sclerosis (ALS), Guillain-Barré syndrome, types of polyneuropathies

Practical: (PT) Possibilities for the improvement of the voluntary and automatic movements

8. week

Lecture: (PT) Extrapyrmidal dysfunction, hyperkinesias

Practical: (PT) Proprioceptive training

9. week

Lecture: (PT) Examination and complex physiotherapy of the patient suffering from Parkinson's disease

Practical: (PT) Principles of the movement therapy in progressive muscular dystrophy

10. week

Lecture: (PT) Principles of the movement therapy of the multiple sclerosis and myasthenia gravis

Practical: (PT) Demonstration of the movement therapy for polyneuropathies with alcoholic, diabetic and autoimmune origin

11. week

Lecture: (PT) Symptoms and principles of physiotherapy in peripheral pareses

Practical: (PT) Use of gymnastic equipments in order to facilitate or make more difficult the exercises. Individual and group training for patients with Parkinson's disease; demonstration and

practice

12. week

Lecture: (PT) Rehabilitation of the spine-injured patients

Practical: (PT) Complex physiotherapy of the patients with multiple sclerosis; movement therapy of the patients with myasthenia gravis

13. week

Lecture: (PT) Movement disorders with neuropsychiatric origin

Practical: (PT) Demonstration and practice of the facilitation techniques; improvement of the voluntary movements by coordination exercises. Individual demonstration of the facilitation techniques, some coordination and balance improving exercises

14. week

Lecture: (PT) Movement therapy in apraxia, agnosia and dementia

Practical: (PT) Physiotherapy of central and peripheral facial paresis; demonstration and practice of the vestibular training.

Requirements

Prerequisites: Electro-, balneo-, hydro- and climatotherapy, Neurology for Physiotherapists I

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences from the practical hours/topics.

Subject: **REHABILITATION SKILLS**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **28**

Seminar: **14**

Practical: **28**

1. week

Lecture: Definition of rehabilitation; history, main fields of rehabilitation; ICF

Practical: Meet with people with disabilities – free discussion

2. week

Lecture: Rehabilitation medicine: definitions, rehabilitation programs; basic features of the assessments

Practical: Assessment of ADL functions

3. week

Lecture: Medical rehabilitation: therapy approaches; team work

Practical: Practice at the Department of Rehabilitation and Physical Medicine (OT)

4. week

Lecture: Educational rehabilitation in childhood and for adults

Practical: Visit to a special school/ early intervention program

5. week

Lecture: Main features of vocational rehabilitation

Practical: Visit to an integrated workplace

6. week

Lecture: Social systems serving people with disabilities. Guiding international documents. Rights of people with disabilities

Practical: Visit to a daily care center

7. week

Lecture: Psychological approach in rehabilitation; communication and communication disorders

Practical: Preparation for mid-term examination

8. week

Lecture: Medical rehabilitation of persons with cardiac diseases; secondary prevention

Practical: Demonstration practice

Self-control Test (Mid-term examination)

9. week

Lecture: Main fields of neurological rehabilitation: TBI, SCI, post-stroke rehabilitation

Practical: Demonstration practice

10. week

Lecture: Rehabilitation for people with chronic neuro-musculoskeletal conditions

Practical: Demonstration practice

11. week

Lecture: Paediatric rehabilitation

Practical: Demonstration practice

12. week

Lecture: Special rehabilitation needs of elderly people (OP, fractures, etc.) and persons after amputation

Practical: Demonstration practice

13. week

Lecture: Pulmonary rehabilitation

Practical: Demonstration practice

14. week

Lecture: Psychiatric rehabilitation

Practical: Demonstration practice

Requirements

Prerequisites: Physiotherapy of the Movement System I, Rheumatology for Physiotherapists II, Neurology for Physiotherapists II

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences at the seminars or practical hours.

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS III.**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Practical: **28**

1. week

Practical: Demonstration of examination

2. week

Practical: Treatment of the joint pain

3. week

Practical: Symptoms and treatment of the rheumatoid arthritis

4. week

Practical: Exercises with joint protection

5. week

Practical: Arthrosis of the joints, symptoms, pain and complications

6. week

Practical: Complex functional treatment of the ankylosing spondylitis

7. week

ENGLISH PROGRAM BULLETIN FOR BSC IN PHYSIOTHERAPY

Practical: Targeted exercises of the ankylosing spondylitis by the methods of physiotherapy

8. week

Practical: Examination and general physiotherapy in arthrosis

9. week

Practical: Treatments, exercises in arthrosis

10. week

Practical: Soft tissue rheumatism, diagnostics and treatment

11. week

Practical: Treatment of periarthropathies

12. week

Practical: Osteoporosis, functional treatment

13. week

Practical: Fibromyalgia: symptoms, diagnostics and treatment

14. week

Practical: Polymyositis and dermatomyositis

Requirements

Prerequisite: Rheumatology for Physiotherapists II

Attendance at demonstration practices is compulsory. If you miss more than 4 hours in Orthopaedics and/or Traumatology practices, the signature of the Lecture Book will be refused.

Subject: **THESIS II.**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Seminar: **14**

Subject: **INTERNAL MEDICINE CLINICAL PRACTICE**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **80**

Content:

Lecture: Peripheral arterial diseases; venous circulatory disorders; acute myocardial infarct; post-infarct state; other diseases in cardiovascular rehabilitation; intensive therapy in cardiology; out-patient training

Requirements

Prerequisite: Internal Medicine for Physiotherapists III

Educational objective: Students learn the special profile of the department; special methods of examination and therapy learn to communicate in a professional environment, as well as with patients and their relatives. Skills to be acquired: problem identification, analysis, examination with and without supervision, preparation and implementation of treatment plans, assessment of patients' progress, recognition of acute and life-threatening conditions and acting in emergency, communication skills (with patients and health care professionals), keeping the ethical standards of the profession.

Requirements: The students are required to perform the examinations, making plan for physiotherapy and carry out the treatment under supervision.

Subject: **NEUROLOGY CLINICAL PRACTICE**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **80**

Content:

Practical: Central paresis; peripheral paresis; sclerosis multiplex; Parkinson's syndrome; muscular disorders; other neurological diseases

Requirements

Prerequisite: Neurology for Physiotherapists II

Educational objective: Students learn the special profile of the department; special methods of examination and therapy, learn to communicate in a professional environment, as well as with patients and their relatives. Skills to be acquired: problem identification, analysis, examination with and without supervision, preparation and implementation of treatment plans, assessment of patients' progress, recognition of acute and life-threatening conditions and acting in emergency, communication skills (with patients and health care professionals), keeping the ethical standards of the profession.

Requirements: The students are required to perform the examinations, making plan for physiotherapy and carry out the treatment under supervision.

Subject: **RADIOLOGY AND DIAGNOSTIC IMAGING FOR PHYSIOTHERAPISTS**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Practical: **14**

1. week

Practical: Introduction the X-ray laboratory

2. week

Practical: Overview of radiological methods: conventional X-ray methods, ultrasound, CT, MRI, functional examinations

3. week

Practical: Basic pathological disorders of bones and joints; developmental variations and anomalies

4. week

Practical: Inflammatory diseases of bones and joints; aseptic necrosis; diseases of movement system with endocrine origin

5. week

Practical: Benign and malign tumors of bones; disorders of bones in the diseases of hemopoetic system

6. week

Practical: Radiology of traumatology

7. week

Practical: Radiological diagnostics of spinal degenerative disorders; tumors and inflammation of spinal column and spinal canal. Practice exam

Requirements

Prerequisites: Orthopedics for Physiotherapists, Traumatology for Physiotherapists

Attendance at practices is compulsory. If you have more than 1 absence the course coordinator

refuses the signature in the Lecture Book. The term mark will be given based on your scores in the end-semester test.

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS II.**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **28**

Practical: **28**

1. week

L: Role of physiotherapy in rheumatology

P: General physical examination in rheumatology. Physical therapy, methods.

2. week

L: Inflammatory diseases of the joints; typical pain, instability, decreased motion; rheumatoid arthritis

P: Rheumatoid arthritis in the upper extremities. Rules of the joint prevention and exercises – upper extremities in RA

3. week

L: Rheumatoid arthritis in the lower extremities Juvenile Rheumatoid Arthritis.

P: Rules of the joint prevention and exercises. Functional exercises in RA

4. week

L: Seronegative spondyloarthropathies, diagnostic criteria; ankylosing spondylitis (AS), pathology, effects on the joints

P: AS – physical examination and general treatment. AS – exercise therapy: conventional exercises

5. week

L: Seronegative spondyloarthropathies; Reactive and Psoriatic arthritis

P: AS – exercise therapy: breathing exercises and global posture re-education

6. week

L: Osteoarthritis of the joints, symptoms, pain and consequences; arthrosis in the hip and knee

P: Examination and general treatment of osteoarthritis – hip and knee. Conditional program for hip and knee

7. week

L: Osteoarthritis of the joints, symptoms, pain and consequences; arthrosis in cervical spine, neck pain, radiculopathies, sprain

P: Examination and general treatment of osteoarthritis – neck. Conditional program for neck

8. week

L: Osteoarthritis of the joints, symptoms, pain and consequences; arthrosis in lumbar spine, back pain, radiculopathies, sprain

P: Examination and general treatment of osteoarthritis – lower back. Conditional program for lower back

9. week

L: Fibromyalgia: pathomechanism, symptoms, diagnosis and treatment, Complex physiotherapy

P: repetition

10. week

L: Osteoporosis: pathomechanism, changed posture and function; Primary, secondary and tertiary preventions

P: Compressed vertebra fracture, early and late mobilisation

11. week

L: Soft tissue rheumatism in the upper extremities; pathology, diagnosis and treatment

P: Soft tissue rheumatism: general treatment and exercise therapy

12. week

L: Soft tissue rheumatism in the lower extremities; pathology, diagnosis and treatment

P: Soft tissue rheumatism: general treatment and exercise therapy

13. week

L: Tunnel syndromes, differential-diagnosis Situations, differential diagnosis, complex exercise therapy, adapted for rheumatic diseases

P: Tunnel syndromes, differential-diagnosis, physiotherapy

14. week

L: Systemic Lupus Erythematosus, Polymyalgia Rheumatica, Dermatomyositis

P: Practice and consultation

Requirements

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance at seminars and practices is compulsory. If you miss more than 2 seminars or practices per modules, the signature may be refused. At the end of the semester, students take an oral end-semester exam (ESE).

Examination: The ESE consists of A written and B-C oral exams.

Subject: **THESIS I.**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Subject: **ECONOMICS AND MANAGEMENT**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **28**

1. week

Lecture: Subject, method and the short history of Economics. The concept of economic agents

2. week

Lecture: National income. The market mechanisms: the analysis of demand and supply

3. week

Lecture: Comparative static analysis. The concept of the product-, money- and labour market

4. week

Lecture: The instruments of economic policy: fiscal and monetary policy

5. week

Lecture: The role of the Central Bank. Development of banks and the financial system I

6. week

Lecture: Development of banks and the financial system II. The functions of financial intermediary

7. week

Lecture: Current issues of the Hungarian economy

8. week

Lecture: Economics: Consultation.

Management: Introduction to management

9. week

Lecture: Strategic management. Identifying values, setting and attaining goals

10. week

Lecture: Time management issues. How to delegate

11. week

Lecture: How to deal with conflict - conflict management issues. Basics of quality management

12. week

Lecture: How to get your point across - the art of presentation. Management, leadership, and employee empowerment

13. week

Lecture: Performance assessment. Motivating employees and building teams

14. week

Lecture: Human resource management: finding and keeping the best employees; dealing with employee-management issues and relationships

Requirements

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics.

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences from the practices.

Mid-term examinations and calculation of term mark

Mid-term tests in theoretical knowledge and practice exam will be processed during the semester. The results of the midterm tests and practical examination will be averaged for evaluation of the term mark (AW5).

Subject: **INTENSIVE THERAPY FOR PHYSIOTHERAPISTS**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **10**

Seminar: **4**

1. week

Lecture: Observation, monitoring and documentation at the intensive therapy unit. Monitoring of the brain function; renal function; laboratory diagnostics; infection control; documentation

2. week

Lecture: Water and electrolyte balance in normal and pathologic states

3. week

Lecture: Unconscious and disturbed patient; grades of the disorientation

4. week

Lecture: Danger of the airway obstruction, support, nursing, physiotherapy

5. week

Lecture: Postoperative patient care; postoperative respiratory disorders, prevention and treatment

6. week

Lecture: Polytraumatized patient, Multi-trauma, polytrauma.

Seminar: Equipment at the intensive therapy unit; role of the physiotherapist in the team; special aspects of the children care.

7. week

Lecture: Chest injuries, role of the physiotherapist in the treatment

Seminar: Task of a physiotherapist with traumatized patients.

8. week

Lecture: Intensive therapy of the acute coronary syndrome (ACS), patho-physiology, types and symptoms of the cardiac insufficiency.

Seminar: Indications and contra-indications of the movement therapy in the acute cardiac patients.

9. week

Lecture: Mobilization, physiotherapy in ACS and cardiac insufficiency

Seminar: Tasks of the physiotherapist in the early mobilization of the patients after myocardial infarct or cardiac surgery intervention.

10. week

Lecture: Methods of mechanical ventilation, artificial breathing strategy

Seminar: Indications and contraindications of the respiratory physiotherapy in the acute care.

Methods of the respiratory therapy, criteria for application in the acute respiratory insufficiency

Requirements

Prerequisites: Physiotherapy Principles of Internal Medicine, Physiotherapy of the Movement System I.

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance at seminars is compulsory. The signature of the Lecture Book may be refused if one has more than 2-hour absences from the seminars.

Subject: **PHYSIOTHERAPY PRINCIPLES OF THE MOVEMENT SYSTEM**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **14**

Subject: **PHYSIOTHERAPY OF THE MOVEMENT SYSTEM II.**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Practical: **56**

1. week

Practical: (T) Patient examination

2. week

Practical: (O) Patient examination

3. week

Practical: (T) Relief of contracture (demonstration)

4. week

Practical: (O) Examination and treatment of postural abnormalities.

5. week

Practical: (T) Functional treatment of the shoulder region injuries

6. week

Practical: (O) Treatment of scoliosis at different location

7. week

Practical: (T) Group and individual training for shoulder-injured patients; use of instruments

8. week

Practical: (O) Treatment of scoliosis at different location

9. week

Practical: (T) Treatment of the hand injuries

10. week

Practical: (O) Disorders of the wrist complex - case demonstrations

11. week

Practical: (T) Conservative functional treatment of the hip fractures

12. week

Practical: (O) Targeted exercises of the coxarthrosis and gonarthrosis

13. week

Practical: (T) Conservative functional treatment of the hip fractures. Ankle injuries

14. week

Practical: (O) Complex rehabilitation program after total hip and knee endoprosthesis

Requirements

Prerequisite: Physiotherapy of the Movement System I - PT in Orthopaedics and Traumatology
Attendance at demonstration practices is compulsory. If you miss more than 4 hours in Orthopaedics and/or Traumatology practices, the signature of the Lecture Book will be refused.

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS III.**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **6**

Practical: **24**

1. week

Lecture: (B) Characteristics of the normal movements, general introduction to Bobath's method

(E) The basic principles of the electricity

Practical:

(B) Inspection, taking history, examination of muscular tone

(E) Taking intensity-duration curve, evaluation of the results I

2. week

Lecture: (B) Patient examination according to Bobath's method

(E) Aim and principles of the electrodiagnostic procedures, rules of processing

Practical: (B) Special examinations and tests

(E) Taking intensity-duration curve, evaluation of the results I

3. week

Lecture: (B) Hypotonia and spasticity

(E) Assessment of the degree of denervation

Practical: (B) Exercises in horizontal position, facilitation of lateral rolling, strengthening the pelvic muscles

(E) Taking intensity-duration curve, evaluation of the results II

4. week

Lecture: (B) Duties at the early phase of the stroke, treatment of the face

(E) Galvan and Farad tests, Pflüger's rule, measurement of the rheobase and chronaxie

Practical: (B) Facilitation of the truncal movements

(E) Examination of the muscle by electromyography (EMG) I

5. week

Lecture: (B) Cerebral plasticity and its role in the treatment

(E) Electrodiagnostics of the skeletal muscle

Practical: (B) Exercises in sitting position, facilitation of getting up

(E) Examination of the muscle by electromyography (EMG) II

6. week

Practical: (B) Exercises in upright position, tactile stimulation

Self-control Test ((E) Mid-semester test)

7. week

Practical: (B) Facilitation of the gait

8. week

Practical: Clinical demonstration

Self-control Test ((B) Mid-semester test)

9. week

Practical: Clinical demonstration

10. week

Practical: Clinical demonstration

11. week

Practical: Clinical demonstration

12. week

Practical: Clinical demonstration

13. week

Practical: Clinical demonstration

14. week

Practical: Clinical demonstration

Requirements

Prerequisite: Neurology for Physiotherapists II

Attendance at lectures is strongly recommended, at practices is compulsory. If you have more than a 4-hour absence at practical hours, the signature of the Lecture Book will be refused.

The course contains also a 30-hour demonstration practice.

Subject: **REHABILITATION CLINICAL PRACTICE**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: 120

Content:

Practical: Rehabilitation in cranio-cerebral injuries; injuries of spinal cord; post-amputation state; other diseases requiring rehabilitation therapy

Requirements

Prerequisite: Rehabilitation

Educational objective: Students learn the special profile of the department; special methods of examination and therapy learn to communicate in a professional environment, as well as with patients and their relatives. Skills to be acquired: problem identification, analysis, examination with and without supervision, preparation and implementation of treatment plans, assessment of patients' progress, recognition of acute and life-threatening conditions and acting in emergency, communication skills (with patients and health care professionals), keeping the ethical standards of the profession.

Requirements: The students are required to perform the examinations, making plan for physiotherapy and carry out the treatment under supervision.

Subject: **ORTHOPAEDICS CLINICAL PRACTICE**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **80**

Content:

Practical: Orthopedic diseases of spine; orthopaedic diseases of upper extremities; orthopaedic diseases of lower extremities; pre- and postoperative physiotherapy

Requirements

Prerequisite: Physiotherapy of the Movement System II - PT in Orthopaedics and Traumatology

Educational objective: Students learn the special profile of the department; special methods of examination and therapy learn to communicate in a professional environment, as well as with patients and their relatives. Skills to be acquired: problem identification, analysis, examination with and without supervision, preparation and implementation of treatment plans, assessment of patients' progress, recognition of acute and life-threatening conditions and acting in emergency, communication skills (with patients and health care professionals), keeping the ethical standards of the profession.

Requirements: The students are required to perform the examinations, making plan for physiotherapy and carry out the treatment under supervision.

Subject: **RHEUMATOLOGY CLINICAL PRACTICE**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **120**

Content:

Lecture: Rheumatoid arthritis; ankylosing spondylitis; osteoporosis; soft tissue rheumatism, fibromyalgia; other rheumatoid diseases

Requirements

Prerequisite: Rheumatology for Physiotherapists II

Educational objective: Students learn the special profile of the department; special methods of examination and therapy learn to communicate in a professional environment, as well as with patients and their relatives. Skills to be acquired: problem identification, analysis, examination with and without supervision, preparation and implementation of treatment plans, assessment of patients' progress, recognition of acute and life-threatening conditions and acting in emergency, communication skills (with patients and health care professionals), keeping the ethical standards of the profession.

Requirements: The students are required to perform the examinations, making plan for physiotherapy and carry out the treatment under supervision.

Subject: **TRAUMATOLOGY CLINICAL PRACTICE**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **120**

Content:

Practical: Injuries of spine; injuries of upper extremities; injuries of lower extremities; poly-traumatisation; intensive therapy in traumatology

Requirements

Prerequisite: Physiotherapy of the Movement System II – PT in Orthopaedics and Traumatology

Educational objective: Students learn the special profile of the department; special methods of examination and therapy learn to communicate in a professional environment, as well as with patients and their relatives. Skills to be acquired: problem identification, analysis, examination with and without supervision, preparation and implementation of treatment plans, assessment of patients' progress, recognition of acute and life-threatening conditions and acting in emergency, communication skills (with patients and health care professionals), keeping the ethical standards of the profession.

Requirements: The students are required to perform the examinations, making plan for physiotherapy and carry out the treatment under supervision.

Subject: **CARDIOPOLMUNARY RESUSCITATION (CPR)**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **14**

Subject: **THESIS III**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: 14

1. session

Analysis and discussion of the results on the basis of scientific literature, writing the Thesis

2. session

3. Sample for defence presentation

Requirements

Prerequisite: Thesis II

Evaluation and discussion of the results, writing the Thesis.

ENGLISH PROGRAM BULLETIN FOR BSC IN PHYSIOTHERAPY

Subject: **AESTHETIC BODY FORMING GYMNASTICS**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Practical: 28

1st week:

Practical: Position, aim, principles and importance of the aesthetic gymnastics in physiotherapy

2nd week:

Practical: Exercises improving kinesthesia in different positions

3rd week:

Practical: Concept and importance of elongation; synergism and making independent in practice

4th week:

Practical: Movements of the trunk: leaning, throwing, bending, arch, waving and turning

5th week:

Practical: Trunk flexion and extension exercises in different positions I

6th week:

Practical: Trunk flexion and extension exercises in different positions II

7th week:

Practical: Trunk flexion and extension exercises in different positions III

8th week:

Practical: Trunk lateral flexion exercises in different positions I

9th week:

Practical: Trunk lateral flexion exercises in different positions II

10th week:

Practical: Trunk rotation exercises in different positions

11th week:

Practical: Shoulder complex lifting, shoulder wave and shoulder plain exercises in different position

12th week:

Practical: Pelvic complex lifting and “leg bit” in different position I

13th week:

Practical: Pelvic complex lifting and “leg bit” in different position II

14th week:

Practical: End-term exam

Requirements

Prerequisite: Kinesiology II

Attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences at the practical hours.

Subject: **BALLS IN PHYSIOTHERAPY**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Practical: 28

1st week:

Practical: Types of the balls, history

2nd week:

Practical: Types of the drills, classification by the age and load

3rd week:

Practical: Basic steps on the ball, effects of music, rhythm and tempo

4th week:

Practical: Structure of the basic exercise; strengthening and rendering the muscles of the shoulder and the arm

5th week:

Practical: Strengthening and rendering the abdominal muscles

6th week:

Practical: Strengthening and rendering the superficial and deep muscles of the back

7th week:

Practical: Strengthening and rendering the muscles of the thigh and leg

8th week:

Practical: Stretching and relaxing exercises, dynamic and static stretch

9th week:

Practical: Balance-improving and mixed exercises; individual, paired and group exercises on the ball

10th week:

Practical: Structure of the shape-forming and enhancing exercises

11th week:

Practical: Structure and effects of the fat burning drills; nutrition and water supplement; types of choreographies

12th week:

Practical: Use of the ball in different diseases and pathological states

13th week:

Practical: Preparation for the exam

14th week:

Practical: End-term exam

Requirements

Prerequisite: Basics of Physiotherapy

Attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences at the practical hours.

Subject: **COMPLEMENTARY AND ALTERNATIVE MEDICINE**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: 14

1st week:

Lecture: Definition and history of the complementary and alternative medicine (CAM). Relevance and role of CAM in the modern medicine

2nd week:

Lecture: Legal regulations of CAM in Hungary and Europe. Classification of CAM; „Mind-body” Medicine

3rd week:

Lecture: Natural, bio-based products. Alternative medical system, energy medicine

4th week:

Lecture: Manipulative and body-centered methods. Traditional Chinese medicine

5th week:

Lecture: Definition and relevance of evidence based CAM. Acupuncture

6th week:

Lecture: Manual therapy (osteopathy, chiropractic). Massage, relaxation

7th week:

Lecture: Integrative medicine. Role and efficiency of integrative medicine in different countries of European Union

Requirements

Prerequisite: Cardiorespiratory and Exercise Physiology, Neurophysiology, Physiology
Attendance at lecture is highly recommended. The offered grade of the ESE will be calculated based on the mid-semester written examinations according to the scale as follows:

0-59%: fail (1)

60-69%: pass (2)

70-79%: satisfactory (3)

80-89%: good (4)

90-100%: excellent (5)

Subject: **DIGITAL TOOLS IN PHYSIOTHERAPY**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Practical: 14

1st week:

Practical: History of Wii, how to set it up and usage of basic programmes. Wii Fit Plus and Wii Sport

2nd week:

Practical: Place of Wii in the rehabilitation. Patients with sensory and mental handicap. Usage in psychiatry

3rd week:

Practical: Neurological rehabilitation with Wii (hemiparesis, multiple sclerosis, other neurological diseases. Demonstration of the games

4th week:

Practical: Traumatological rehabilitation with Wii, paraplegia, spine cord injuries and other traumas. Demonstration of the games

5th week:

Practical: Using Wii in elderly hood. Demonstration of the games

6th week:

Practical: Using Wii in childhood. Demonstration of the games

7th week:

Practical: Consultation. Practice exam.

Requirements

Prerequisites: Neurology for Physiotherapists I, Physiotherapy of the Movement System I

ENGLISH PROGRAM BULLETIN FOR BSC IN PHYSIOTHERAPY

Attendance at practices Neurology for Physiotherapists I, Physiotherapy of the Movement System is compulsory. The signature of the Lecture Book may be refused if one has more than 2-hour absence from practical classes. At the end of the semester, students take a practice exam.

Subject: **GRAVITY TRAINER IN PHYSIOTHERAPY**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Practical: 28

1st week:

Practical: Theoretical and practical guide to the gravity trainer method

2nd week:

Practical: Starting positions and processing the exercises

3rd week:

Practical: Exercises for preparation, correct postures and required joint positions, warm up exercises

4th week:

Practical: Upper extremity exercises

5th week:

Practical: Core specific exercises in different positions

6th week:

Practical: Lower extremity exercises

7th week:

Practical: Training programmes aimed to prevent sport injuries

8th week:

Practical: Targeted exercises for the improvement of cardiovascular endurance

9th week:

Practical: Therapeutic programmes for obese patients

10th week:

Practical: Implementation of the programme in the rehabilitation of patients with rheumatological and traumatological disorders

11th week:

Practical: Aspects of short-term rehabilitation and trainings of athletes

12th week:

Practical: Case studies and practice

13th week:

Practical: Case studies and practice

14th week:

Practical: Repetition and consultation

Requirements

Prerequisite: Kinesiology II

Attendance at practical hours is compulsory. If you miss more than 4 practical hours, the signature of the Lecture Book will be refused,

Subject: **GYMNASTIC EQUIPMENTS**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Practical: 28

1st week:

Practical: Introduction to the topic; demonstration of the equipments, technical instructions

2nd week:

Practical: Repetition of definitions (planes, movements, kinesiology principles)

3rd week:

Practical: Strengthening the upper limb muscles by bands in different positions I

4th week:

Practical: Strengthening the upper limb muscles by bands in different positions II; group and paired exercises

5th week:

Practical: Strengthening the upper limb muscles by bands in different positions III; group and paired exercises

6th week:

Practical: Strengthening the upper limb muscles by bands in staying position; group and paired exercises

7th week:

Practical: Improving the fine movements of the hand by different tools; repetition

Self-control Test

8th week:

Practical: Strengthening the lower limb muscles by bands in different positions I

9th week:

Practical: Strengthening the upper limb muscles by bands in different positions II; group and paired exercises

10th week:

Practical: Strengthening the upper limb muscles by bands in different positions III; group and paired exercises

11th week:

Practical: Strengthening the upper limb muscles by bands in different positions IV; group and paired exercises

12th week:

Practical: Strengthening and endurance training with ball, use of stability trainer

13th week:

Practical: Repetition, consultation

14th week:

Practical: End-term exam

Requirements

Prerequisite: Basics of Physiotherapy

Attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences at the practical hours.

Subject: **KINESIO TAPING**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: 4

Practical: 10

1st week:

Lecture: Theoretical background, effects, precautions and requirements of kinematic taping

2nd week:

Lecture: The shoulder complex and upper extremities: examination and differential-diagnostics

3rd week:

Lecture: Applied techniques for shoulder complex and upper extremities: introduction

Practical:

Applied techniques for shoulder complex and upper extremities: practicing

4th week:

Lecture: The pelvico-hip complex and lower extremities: examination and differential-diagnostics

Practical: Applied techniques for pelvico-hip complex and lower extremities: practicing

5th week:

Lecture: The spine: examination and differential-diagnostics. Applied techniques for spine: introduction

6th week:

Lecture:

Practical: Applied techniques for spine: practicing

7th week:

Practical: Applied techniques for spine: practicing. Practice exam

Requirements

Prerequisites: Physiotherapy of the Movement System I, Rheumatology for Physiotherapists II

Attendance at practice is compulsory. The signature of the Lecture Book may be refused if one has more than 2-hour absences from the practical hours

Subject: **MOLECULAR BACKGROUND OF SKELETO-MUSCULAR DISEASES**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: 14

1st week:

Lecture: Physiology of skeletal muscle, recovery of “young” and “old” skeletal muscle, fibrosis

2nd week:

Lecture: Research techniques and diagnostic tests of skeletal muscle

3rd week:

Lecture: Muscular dystrophies

4th week:

Lecture: Channelopathies

5th week:

Lecture: Metabolic and endocrine myopathies

6th week:

Lecture: Dysfunction of NMJ, inflammatory myopathies

7th week:

Lecture: Skeletal muscle in the neuropathies

8th week:

Lecture: End-term test

Self-control Test (End-term test)

Requirements

Prerequisite: Physiology

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. At the end of the semester, students take an end-semester exam (ESE).

Subject: **ORTHOTICS-PROSTHETICS**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: 8

Practical: 5

1st week:

Lecture: Definition of the medical aids; history; classification

2nd week:

Lecture: Role of the medical aids in the rehabilitation; general characterization

3rd week:

Lecture: Role of physiotherapists in the patient education; development of tools

4th week:

Lecture: Upper limb orthoses, problems and possibilities

5th week:

Lecture: Lower limb orthoses. Lower limb prosthetics

6th week:

Lecture: Cervical spine orthoses, trunk corsets. Pelvic belts

7th week:

Lecture: Movement improving tools. Medical shoes

8th week:

Lecture: Hygienic tools, medical aids for better quality of life

Practical: Overview of manufacturing and producing aids.

9th week:

Lecture: Anti-decubitus tools; Compression stockings

Practical: Patient education

10th week:

Lecture: Incontinence management products

Practical: Visit to the manufacturing lab.

Requirements

Prerequisites: Orthopaedics for Physiotherapists, Rheumatology for Physiotherapists I, Traumatology for Physiotherapists I

Attendance at lectures is strongly recommended.

Subject: **PNF IN PRACTICE**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: 10

Practical: 18

1st week:

Lecture: Significance of the proprioception in the motor control; relationship of the proprioception and the coordination

Practical: PNF as a part of the pre- and postoperative physiotherapy

2nd week:

Lecture: PNF in traumatology: types of damages of the upper extremity

Practical: Posttraumatic restoration of the upper limb functions by using PNF techniques

3rd week:

Lecture: PNF in traumatology: types of damages of the lower extremity

Practical: Posttraumatic restoration of the lower limb functions by using PNF techniques

4th week:

Lecture: PNF in traumatology: damage of the spinal column

Practical: Posttraumatic restoration of the spinal column functions by using PNF techniques

5th week:

Lecture: PNF in rheumatology; diseases of the upper limb

Practical: Restoration of the upper limb functions in rheumatologic diseases by using PNF techniques

6th week:

Lecture: PNF in rheumatology; diseases of the lower limb

Practical: Demonstration, practical relations

7th week:

Lecture: PNF in rheumatology

Practical: Improvement of mobility of the spine in rheumatologic diseases by using PNF techniques

8th week:

Lecture: PNF in neurology, peripheral nerve injuries

Practical: Functional treatment of the peripheral nerve injuries

9th week:

Lecture: PNF in neurology, injuries of the CNS

Practical: Treatment of the CNS disorders

10th week:

Lecture: PNF in neurology, facial paresis

Practical: PNF in the facial region

11th week:

Lecture: PNF in orthopedics; gait disorders

Practical: Correction of gait disorders using PNF techniques

12th week:

Lecture: PNF in orthopedics, postural disorders

Practical: Correction of postural disorders using PNF techniques

13th week:

Lecture: PNF in orthopedics – other use

Practical: PNF in the perioperative period

14th week:

Lecture: Consultation

Practical: End-term exam

Requirements

Prerequisite: Mobilization-Manual Techniques II, Physiotherapy of the Movement System I
Attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences from the practical hours.

Subject: **PROBLEM-BASED APPROACH OF CARDIOVASCULAR PHYSIOLOGY**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Practical: 28

1st week:

Practical: Synergism of the circulatory and respiratory systems. Metabolic demand for circulation and respiration. Criteria for sufficient perfusion and ventilation. Changes leading to hypercapnia. Circulatory and respiratory responses to hypercapnia. Reasons of hypoxia. Circulatory and respiratory responses to hypoxia. Adaptation of the cardiovascular and respiratory systems to the physical exercise. Changes in the cardiac output, redistribution of the circulating blood volume. Blood supply to the skeletal muscle, the heart and the brain. Changes in the respiratory minute volume

2nd week:

Practical: Adaptation of the cardiorespiratory system to different conditions. Adaptation to altitude. Consequence of decreased atmospheric pressure. Circulatory responses to the hypoxia. Respiratory responses. Physical performance at high altitude. Other reactions. Evolutionary adaptation to decreased atmospheric pressure. Effects of acceleration on the circulatory system. Effects of the gravitation and weightlessness on the circulatory system

3rd week:

Practical: Effects of environmental expositions on the cardiovascular system. Effects of the global warming and extreme temperature on the cardiovascular system. Chemical expositions (arsenic poisoning, cholinesterase inhibitors). Effects of the air pollution on the cardiorespiratory system

4th week:

Practical: Individual activity in the e-learning modul (recommended literature, glossary, tests, essay).

Requirements

Prerequisite: Cardiorespiratory and Exercise Physiology

The course is an e-learning supported one. 6 contact hours, 9 hours for consultation and at least 15 hours individual activity in the e-learning course.

Presence at the contact hours is compulsory. More than 2-hour absence results in the refusal of signature. Presence at 1/3 of the consultation hours is compulsory, the other lessons are strongly recommended. The compulsory on-line activity has to be fulfilled till deadline. Some activity is awarded by bonus points. The missing of the on-line compulsory activity results in the lack of the signature.

Grade: will be evaluated based on the scores in the compulsory activities and the bonus points according to the scale as follows:

<55 %: (1) fail

56-64 %: (2) pass

65-74 %: (3) satisfactory

75-84 %: (4) good

85 % felett: (5) excellent

Subject: **SLING SUSPENSION FRAME (SSF)**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Practical: 14

1st week:

Practical: The history of the therapy. Presentation of Sling suspension therapy. The different types of suspension device. Description of basic principles

2nd week:

Practical: The limbs suspension, mobilization in unencumbered position. Three- dimensional fixation. The role of resistance

3rd week:

Practical: Mobilization techniques in suspended position. The possibility of complex lower extremity rehabilitation. Arthrosis programme. Presentation of lower extremity exercises

4th week:

Practical: Mobilization of the cervical spine in suspended position. The triangle principle. Presentation of cervical spine exercises. Mobilization of the lumbal spine in suspended position. Presentation of lumbal spine exercises - stabilization and mobilization

5th week:

Practical: Chest mobilization in suspended position, breathing exercises. Treatment of shoulder problems in suspended position. Full body suspension

6th week:

Practical: Movement therapy for osteoporotic patients. Posture correction with sling suspension therapy. Treatment of scoliosis and ankylosing spondylitis in suspended position. Development of coordination and balance skills

7th week:

Practical: Prevention and wellness with sling suspension therapy.

8th week:

Practical: Practice Exam

Requirements

Prerequisites: Physiotherapy of the Movement System I, Rheumatology for Physiotherapists II
Attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 2-hour absences from the practical hours.

Subject: **SPORTS PHYSIOTHERAPY AND SPORTS MEDICINE**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: 8

Practical: 5

1st week:

Lecture: Structural changes in the skeletal muscles in training

2nd week:

Lecture: Adaptation of cardiovascular system to the sports training

Practical: Correlation of heart rate, blood pressure and exercise intensity. Instrumental measurements

3rd week:

Lecture: Adaptation of the nervous system to the sports training

Practical: Spirometry in sports medicine

4th week:

Lecture: Heat, fluid and electrolyte balance in sports activity. Sport physiological aspects of gastrointestinal system.

Practical: Sports-related aspects of the diet.

5th week:

Lecture: Basic knowledge of sports related internal medicine. Sport medicine: screening examination, competency assessment

6th week:

Lecture: Basics of sports cardiology

7th week:

Lecture: Risk factors and mechanism of the sports injuries

8th week:

Lecture: Basic of sports surgery. Surgical treatment of lower limbs

9th week:

Lecture: Sports injuries of upper limbs and their surgical treatment

10th week:

Lecture: Regeneration after a sports injury

Practical: Visit the Sports Center of the Universi

Requirements

Prerequisites: Internal Medicine for Physiotherapists II, Physiotherapy of the Movement System I, Rheumatology for Physiotherapists II

Attendance at lectures is recommended, practices is compulsory. The signature of the Lecture Book may be refused if one has more than 2-hour absence from practical classes.

Subject: **STEP TRAINING IN PHYSIOTHERAPY**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Practical: 14

1st week:

Practical: The aim of the step aerobics type training. Role and significance in physiotherapy. Theoretical introduction and technical basis of step aerobics. Advantages and disadvantages, possibilities for application of linear type structural class and choreography. Low-impact, high-impact steps, mixed-impact classes, basis and possibilities of OwnZone training on step stairs.

2nd week:

Practical: Theoretical introduction, technical basis and practical application of STEP BASIC type low-impact linear and choreographed structural class.

3rd week:

Practical: Interval training on step stairs. Theoretical introduction, technical basis and practical application of POWER STEP type, mixed-impact, choreographed structural class.

4th week:

Practical: Improvement of conditional skills by strengthening exercises on step stairs. Harmony between choreography, strengthening and stretching.

5th week:

Practical: Cross training. Harmonic balance of fitness aerobics, step aerobics and strengthening.

6th week:

Practical: Theoretical introduction, technical basis and practical application of STEP-DANCE type low-impact linear and choreographed structural class. Step – double: exercises in pairs – choreography onto two step stairs.

7th week:

Practical: Improvement of conditional and coordination skills by playful form on „step stairs in cycle”.

8th week:

Practical: Practice exam.

Requirements

The attendance at practices is compulsory. If you have more than 4-hour absence the signature may be refused.

CHAPTER 13
LIST OF TEXTBOOKS

Philosophy:

Gaardner, J.: *Sophie's World: A Novel About the History of Philosophy*.

Reprint edition. Farrar, Straus and Giroux, 2007. ISBN: 0-5223-5934-8.

Additional Reading: Dawson, A. (ed): *Public Health Ethics: Key Concepts and Issues in Policy and Practice*. New York, NY. Cambridge University Press, 2011. ISBN: 978-0521689366.

Medical Latin:

Répás László: *Basics of Medical Terminology, Latin and Greek Origins I* Répás László, 2016.

Martin, E.: *Oxford Concise Medical Dictionary*. 9th. Oxford University Press, 2015. ISBN: 978-0199-6878-17.

Microbiology:

Levinson, W.: *Review of Medical Microbiology and Immunology*. 14th edition. McGraw Hill, 2016. ISBN: 0-0718-4574-7.

First Aid:

Kindersley D.: *First Aid Manual*. 10th edition. Dorling Kindersley Publishers Ltd, 2011. ISBN: 9781-4053-6214-6.

Van de Velde S, et al: *European first aid guidelines*. Resuscitation, 72:240-51.2007.

St. John Ambulance, St. Andrew's Ambulance Association, British Red Cross Society: *First Aid Manual: The Step by Step Guide for Everyone*. 9th edition. Penguin, 2009. ISBN: 1-405-33537-8.

Betlehem, J.: *First Things to Be Done in Emergencies – Providing First Aid for Health Professionals*. URL: http://www.tankonyvtar.hu/hu/tartalom/tamop425/0061_first-things-angol/adatok.html

Basics of Sociology:

Weitz, R.: *The Sociology of Health, Illness, and Health Care: A Critical Approach*. 6th. Wadsworth Publishing, 2012. ISBN: 1-1118-2879-2.

Denny, E., Earle, S.: *Sociology for Nurses*. 2nd edition. Polity Press, 2009. ISBN: 0-7456-4625-5.

Health Informatics I:

Handbooks of MS Office applications, Internet sources.

Basics of Pedagogy:

Glanz, K., Rimer, B., Viswanath, K.: *Health Behavior and Health Education: Theory, Research, and Practice*. 4th edition. Jossey-Bass, 2008. ISBN: 0-7879-9614-9.

Modeste, N., Tamayose, T., Marshak. H.H.: *Dictionary of Public Health Promotion and Education: Terms and Concepts*. 2nd edition. Jossey-Bass, 2004. ISBN: 0-7879-6919-2.

Communication:

Groenman, N. H., Slevin, O. D., Buckenham, M.: *Social and behavioral sciences for nurses*. Champion Press Limited, 1992.

Segestrale, U., Molnár, P.: *Nonverbal Communication: Where Nature Meets Culture*. 1st edition.

Psychology Press, 1997. ISBN: 0-8058-2179-1.

Kinesiology I:

Levangie, P. K., Norkin, C. C.: Joint Structure and Function. A Comprehensive Analysis. 5th edition. FA Davis Co, 2011. ISBN: 9780-8036-2362-0.

Neumann, D. A.: Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. 2nd edition. Mosby Co, 2009. ISBN: 0-3230-3989-8.

Clarkson, H. M.: Musculoskeletal Assessment: Joint Range of Motion and Manual Muscle Strength. 3rd edition. Lippincott Williams & Wilkins, 2012. ISBN: 1-6091-3816-3.

Magee, D.J.: Orthopedic Physical Assessment. 7th edition. Elsevier Health Sciences, 2014. ISBN: 978-1-4557-0977-9.

Health Informatics II:

Handbooks of MS Office applications, Internet sources.

Electro-, balneo-, hydro-, and climatotherapy:

Cameron M. H.: Physical Agents in Rehabilitation: From Research to Practice. 4th edition. Saunders, 2012. ISBN: 1-4557-2848-9.

Watson T.: Electrotherapy. Evidence Based Practice. 12th edition. Churchill Livingstone, 2008. ISBN: 0-443-10179-5.

Robertson V., Ward, A., Low, J., Read, A.: Electrotherapy Explained: Principles and Practice. 4th edition. Butterworth-Heinemann, 2006. ISBN: 0-7506-8843-2.

Hayes K. W., Hall, K.: Manual for Physical Agents. 6th edition. Pearson, 2011. ISBN: 0-1360-7215-1.

Economics and Management:

Samuelson, P. A., Nordhaus, W. D.: Economics. 19th edition. McGraw-Hill, 2009. ISBN: 0-0735-1129-3.

Morden, T: Principles of Management. Ashgate Pub Ltd, 2004. ISBN: 0-7546-1984-2.

Allen, D.: Getting Things Done: The Art of Stress-Free Productivity. Revised edition. Piatkus, 2015. ISBN: 0-3494-0894-7.

MGMT5: What's Inside: A Student Tested, Faculty-Approved Approach to Learning Principles of Management. Cengage Learning, 2012. ISBN: 1-1331-9090-1.

Hungarian Language I:

Gerő Ildikó-Kovács Judit: Színesen magyarul. 2017.

Kinesiology II:

Levangie, P. K., Norkin, C. C. : Joint Structure and Function. A Comprehensive Analysis. 5th edition. FA Davis Co, 2011. ISBN: 9780-8036-2362-0.

Neumann, D. A. : Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. 2nd edition. Mosby Co, 2009. ISBN: 0-3230-3989-8.

Clarkson, H. M.: Musculoskeletal Assessment: Joint Range of Motion and Manual Muscle Strength. 3rd edition. Lippincott Williams & Wilkins, 2012. ISBN: 1-6091-3816-3.

Magee, D.J.: Orthopedic Physical Assessment. 7th edition. Elsevier Health Sciences, 2014. ISBN: 978-1-4557-0977-9.

Physiology:

Koeppen, B. M., Stanton, B. A.: Berne & Levy Physiology. 7th edition. Elsevier, 2017. ISBN: 9-

78032339394-2.

Hall, J. E.: Guyton and Hall Textbook of Medical Physiology. 13rd edition. Saunders, 2015. ISBN: 1-4557-7005-1.

Philosophy:

Gardner, J.: Sophie's World: A Novel About the History of Philosophy. Reprint edition. Farrar, Straus and Giroux, 2007. ISBN: 0-5223-5934-8.

Dawson, A.: Public Health Ethics: Key Concepts and Issues in Policy and Practice. 1st edition. Cambridge University Press, 2011. ISBN: 0-5216-8936-8.

Hungarian Language II:

Györfy Erzsébet, Ph.D.: Hogy s mint? I. 2013.

Mobilization-Manual Techniques I:

Kaltenborn F. M.: Manual Mobilization of the Joints: Vol I The Extremities . 8th edition. Orthopedic Physical Therapy Products, 2014. ISBN: 8-2705-4201-6.

Kaltenborn F. M., Evjenth, O., Kaltenborg, T. B., Morgan, D., Wollowitz, E.: Manual Mobilization of the Joints: The Spine Vol 2. 6th edition. Norli, 2012. ISBN: 8-2705-4200-8.

Evjenth O., Hamberg, J.: Muscle stretching in Manual Therapy. 6th edition. Alfa Rehab, 2003. ISBN: 9-1859-3402-X.

Adler S. S., Beckers, D., Buck, M.: PNF in practice. 4th edition. Springer Science & Business Media, 2013. ISBN: 3-6423-4988-9.

Clay J. H., D. M. Pounds: Basic Clinical Massage Therapy: Integrating Anatomy and Treatment 3rd edition. Lippincott Williams & Wilkins, 2008.

Clay J. H., Allen, L., Pounds, D. M.: Clay & Pounds' Basic Clinical Massage Integrating Anatomy and Treatment. 3rd, illustrated edition. Lippincott Williams & Wilkins, 2015. ISBN: 1-4511-8546-4.

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CHAPTER 14
TITLES OF THESIS

Klára Bíró PhD.

Thesis:

Increasing expectations among healthcare consumers
Challenges for healthcare managers

László Kardos PhD.

Thesis:

Cutoff optimization of classification systems on the principle of
misclassification burden minimization

Ágnes Tóth PhD.

Thesis:

Magnetic Resonance Imaging of Bones and Joints

Balázs Lukács PhD.

Thesis:

Study of the incidence, causes and consequences of falls in the elderly
Interventions to prevent falls in elderly

Éva Csepregi MSc

Thesis:

Assessment of posture among physiotherapy student

