CHAPTER 1
INTRODUCTION

MISSION STATEMENT OF THE UNIVERSITY OF DEBRECEN MEDICAL AND HEALTH SCIENCE CENTER

The aim of the Medical and Health Science Center 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 opening up and new possibilities are available for the diagnosis, prevention, prediction and treatment of the 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 human personality into consideration. These approaches demand the application of the most modern techniques in all fields of the medical education.

All curricula of the Medical and Health Science Center of the University of Debrecen wish to meet the challenges of modern times and they embody some very basic values. They are comprehensive; they take into consideration the whole human personality (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 of the Medical and Health Science Center 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 absorbed. The Medical and Health Science Center of the University of Debrecen is already internationally recognized in the fields of both basic and clinical research, and the clinicians and scientists of the Center 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 the 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 of the Medical and Health Science Center wish to play a central role in shaping the policies of the health service; 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 education is provided for the society.

With respect to the development of the Medical and Health Science Center, 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 manifest between the individual faculties and colleges, the various postgraduate programs as well as the molecular- and medical biology educations.

HIGHER EDUCATION IN DEBRECEN

A Brief History

1235: First reference to 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 Medical Faculty becomes operational.
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 the traditional economic and cultural center 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 because Debrecen became the mediator between the three parts of 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 of Hungary. 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 in 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 a number of cultural and tourist establishments, 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 establishment of Hungary (1896) when the foundation 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 self-contained, 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 program, the University was given the rights to issue scientific qualifications and new Ph.D. programs were also launched. Several new programs (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 the academic year 2000/2001.

The architectural and instrumental developments of the University Medical School of Debrecen (UMSD) were completed in several stages. In the '70s, the Theoretical Building and the new building of Dentistry were completed. The second phase of development was the establishment of the new Dialysis Center and the Cardiac Surgery Unit in the early '90s. The next stage was the construction of the 3rd Department of Medicine and various radiological units (PET, linear accelerator, etc.) in the second half of the decade. The Life Science Building and a new library (with lecture halls, reading rooms and 200 computer terminals freely available for the students) were completed in 2006. At present, the Debrecen Building of the Health College is being planned.

The Medical and Health Science Center of the University of Debrecen celebrated the 90th anniversary of its foundation in October 2008 with a highly successful international scientific conference.

EDUCATION AT THE MEDICAL AND HEALTH SCIENCE CENTER OF THE UNIVERSITY OF DEBRECEN

Debrecen, the second largest city of Hungary, is situated in Eastern Hungary. Students enrolled in the various programs (e.g. General 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 Center within the Federation of Debrecen Universities (DESZ), based partially on the intellectual resources of the University of Debrecen Medical and Health Science Center. The new programs – with specialized training for paramedics – will help to correct the balance of 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 and residency, and permission was also given to license Physicians’ procedures. This kind of training required a new structure, a new administrative apparatus, and a suitable training center. The new residency programs were commenced in 1999.

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. Admission requirements for Hungarian students are defined at national level, and they are applicable for every student wishing to be enrolled into the General Medicine or Dentistry programs.

International students must pass an entrance interview in biology and (depending on their preference) in physics or chemistry. In some special cases it may be possible for the candidates to apply for transfer to higher years on the basis of their previous studies and achievements. International students study in English language, but those fluent in Hungarian may use this language also during their studies.

The syllabuses and classes of all courses correspond to European standards. The total number of contact hours in medical education is over 5,500, which can be divided into three main parts: basic theoretical training (1st and 2nd year), pre-clinical subjects (3rd year) and clinical subjects (4th and 5th year) followed by the internship (6th year). The proportion of the theoretical and practical classes is 30% to 70%; whereas the students/instructors ratio is about 8/1. The first two years of dentistry education are similar to the general medicine program, but the former contains a basic dental training that is followed by a three-year-long pre-clinical and clinical training. Besides the general medicine and dentistry programs, there are several other courses also available, including molecular biology. The various bachelor courses include more and more new curricula.

The General Medicine program delivered in English and intended for international students was commenced in 1987; whereas the Dentistry and Pharmacy programs for international students started in 2000 and 2004, respectively. The curriculum of the English language General Medicine program meets all the requirements prescribed by the European medical curriculum, which was outlined in 1993 by the Association of Medical Schools in Europe. Compared to the Hungarian program, the most important differences are:

- Hungarian language is taught,
- More emphasis is laid upon the tropical infectious diseases (as parts of the “Internal Medicine” and “Hygiene and Epidemiology” courses).

Otherwise, the English language curriculum is identical with the Hungarian one. The 6th year of the curriculum is the internship that includes Internal Medicine, Pediatrics, Surgery, Obstetrics and Gynecology, Neurology, and Psychiatry. The completion of these subjects takes at least 47 weeks, although students are allowed to finish them within a 24-month-long period. The successfully completed internship is followed by the Hungarian National Board Examination. Just like the rest of the courses, the internship is also identical in the Hungarian and English programs.

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 of the English General Medicine and Dentistry programs may join these PhD courses (“English PhD-program”). Special education for general practitioners has been recently started and a new system is in preparation now for the training of licensed physicians in Debrecen.

The accredited PhD programs of the Medical and Health Science Center 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-programs are lead by more than 100 accredited, highly qualified coordinators and tutors.

MEDICAL ACTIVITY AT THE UNIVERSITY OF DEBRECEN MEDICAL AND HEALTH SCIENCE CENTER (UDMHSC)

The UDMHSC 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 serving 62,000 inpatients and 670,000 outpatients every year. The UDMHSC 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 (including an adult hemodialysis center, open-heart surgery facilities, kidney transplantation unit, etc.).

The Kenézy Gyula County Infirmary (with some 1,400 beds) is strongly affiliated with the UDMHSC and plays an important role in teaching the practical aspects of medicine. The Department of Obstetrics and Gynecology of the UDMHSC has been an official reference center of the World Health Organization (WHO) for several years. There are also close contacts between the University and other health care institutions, mainly (but not exclusively) in its closer region. The UDMHSC has a Teaching Hospital Network consisting of 10 hospitals in nearby counties.

It is also of importance that the UDMHSC 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').

SCIENTIFIC RESEARCH AT THE UNIVERSITY OF DEBRECEN MEDICAL AND HEALTH SCIENCE CENTER

Scientific research is performed both at the departments for basic sciences and at the laboratories of clinical departments. The faculty members of the UDMHSC publish about 600 scientific papers every year in international scientific journals. According to the scientometric data, the UDMHSC is among the 4 best of the more than 80 Hungarian research institutions and universities. Lots of scientists reach international recognition, exploiting the possibilities provided by local, national and international collaborations. Internationally acknowledged research areas are Biophysics, Biochemistry, Cell Biology, Immunology, Experimental and Clinical Oncology, Hematology, Neurobiology, Molecular Biology, Neurology, and Physiology. The scientific exchange program involves numerous foreign universities and a large proportion of the faculty members are actively involved in programs that absorb foreign connections (the most important international collaborators are from Belgium, France, Germany, Italy, Japan, the UK and the USA).

NEW FACILITIES AT THE UNIVERSITY OF DEBRECEN MEDICAL AND HEALTH SCIENCE CENTER

The development of the UDMHSC has been accelerated in recent years, with the following important results:

- New units have been developed to increase the quality of the medical care (Center for Nephrology, a newly constructed building serving the Cardiology and Heart Surgery Departments, a Kidney Transplantation Unit, a new building for the 3rd Department of Medicine).
- Up to date medical imaging equipments (including X-ray, MRI and PET) are now available for research and diagnostic purposes.
- The internationally acknowledged Gamma Radiosurgery Center of Debrecen allows the application of a unique method for the treatment of neurological deseases - even within one day.
- A Hungarian-Japanese Center for Electron Microscopy has been founded recently.
- The fiber optic cable computer network of the University is connected to the Internet World Academic Computer System via the metropolitan FDDI network. Students can use up to 30 terminals at the same time in the Education Center, in the Center for Educational Development, and in a number of other departments. There is a continuous development in this area with new Ethernet and ATM networks.
- A new computer center will be established for students, having 40 workstations connected to the Internet in one of the Students' Hostels. The access will be available free of charge for all students of the UDMHSC.
- A new linear accelerator has been purchased for patients requiring radiology treatment.

- New Life Science Building and Library have been built recently.
- A similar project, aimed at the construction of a new building for the Health College Faculty in Debrecen, has been initiated.
- A new building belonging to the Faculty of Dentistry has been built.
- In the frame of the "Augusta Program" – that was launched in 2005 – a center has been established dealing with cardiovascular and tumorous deseases. The primary goal of the program is to reduce the mortality of these severe disorders.
- A new PET/CT equipment started to operate in the UDMHSC in May 2007. This high-tech equipment not only allows easier, earlier, and more precise diagnosis of various tumorous diseases, but it also helps in the early recognition of several neurological and cardiovascular disorders.

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, by the unification of the School of Public Health, the Department of Preventive Medicine, the Department of Family Medicine and the Department of Behavioral Sciences of the University of Debrecen.

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 launching 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 and its Medical and Health Science Centre. 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 and master training programmes in the field of public health and health sciences. With its 2 bachelor, 4 master training programmes and 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.

ORGANISATION STRUCTURE OF THE FACULTY OF PUBLIC HEALTH

Department of Preventive Medicine
- Division of Biomarker Analysis
- Division of Biostatistics and Epidemiology
- Division of Health Promotion
- Division of Public Health Medicine

Department of Family and Occupational Medicine
Department of Behavioral Sciences
- Division of Clinical and Health Psychology
- Division of Humanities for Health Care

Department of Health Management and Quality Assurance
Department of Hospital Hygiene and Infection Control
Department of Physiotherapy
School of Public Health (as postgraduate training center)

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 high- and internationally recognized quality training programs, complying with the training needs of the 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 IN PHYSIOTHERAPY PROGRAM AT THE FACULTY OF PUBLIC HEALTH

Bachelor course in Physiotherapy launched by the Faculty of Public Health of the University of Debrecen is built on a 13-year experience in education of physiotherapists at the University of Debrecen. The training is identical in content to the accredited Bachelor of Science program in Nursing and Patient Care with Physiotherapist specialization launched six years ago. The course is based on the University's highly trained, internationally competitive staff and excellent infrastructure in order to fulfill an international demand in health care (involving physiotherapy) training.

The majority of teachers have remarkable teaching experience in English taking part in the international training

programmes of University of Debrecen Medical and Health Science Center.

The international MSc programs (MSc in Public Health, MSc in Complex Rehabilitation) launched by the Faculty of Public Health are offered for graduated students in the BSc courses of health sciences. BSc 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. 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 operated by the Council of the Students' Scientific Association.

CHAPTER 2
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CHAPTER 3
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	Miklós Káplár M.D., Ph.D.
	Dénes Páll M.D., Ph.D.
Assistant Professor	Péter Fülöp M.D., Ph.D.
	Ms. Mariann Harangi M.D., Ph.D.
	Zoltán Jenei M.D., Ph.D.
	Ms. Éva Katona M.D., Ph.D.
Assistant Lecturer	Gergely Nagy M.D., Ph.D.
Senior Research Fellow	Ms. Ildikó Seres M.Sc., Ph.D.
Clinical Assistant	Ms. Krisztina Gaál M.D.
	Péter Koncsos M.D.
	Tamás Köbling M.D.
	Ms. Lívia Sira M.D.

		Ferenc Sztanek M.D.
Resident	Ms.	Noémi Zsíros M.D.
PhD Student		Imre Juhász M.D.
	Ms.	Hajnalka Lőrincz M.Sc.
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Full Professor	Károly Fekete M.D., Ph.D. (med.habil)
Professor Emeritus	Zoltán Záborszky M.D., Ph.D.
Head Surgeon	István Frendl M.D.
	Sándor Kiss M.D.
	Ferenc Urbán M.D.
Chief Surgeons of the Kenézy Hospital	Motazedian Ardeshir M.D.
	János Bagyó M.D.
	József Balázs M.D.
	Béla Barta M.D.
	Zoltán Dézsi M.D.
	Péter Horkay M.D.
	Árpád Kiss M.D.
	Bojko Lazarov Szeferinkin M.D.
	László Molnár M.D.
	Levente Molnár M.D.
	András Nagy M.D.
	Árpád Németh M.D.
	Dániel Rezes M.D.
	Zsigmond Varga M.D.
Surgeons of the Kenézy Hospital	Árpád Barkaszi M.D.
	Aurél Bogdán M.D.
Ms.	Danie Czakó M.D.
	Subuh Deeb Mahmoud M.D.
	Sándor Imre Kiss M.D.
	László Kiss M.D.
	Ádám Lőrincz M.D.
	Ardeshir Motazedian M.D.
	Zoltán Németi M.D.

		Zoltán Domokos Pap M.D.
		József Papp M.D.
		Mohammed Reza Arabpour M.D.
Resident		Péter Berényi M.D.
		Márton Árpád Fésüs M.D.
		Szabolcs Gorzsás M.D.
		Gergely Huszanyik M.D.
		Dávid Kovács M.D.
		Csaba Körei M.D.
	Ms.	Katalin Muraközi M.D.
Consultant		István Szarukán M.D.
Academic Advisor		Ferenc Urbán M.D.

CHAPTER 5
UNIVERSITY CALENDAR

UNIVERSITY CALENDAR FOR PHYSIOTHERAPY PROGRAMME 2012/2013 ACADEMIC YEAR

OPENING CEREMONY: 9th September, 2012
Registration period: 3rd September - 7th September

1st SEMESTER

Year	Course	Examination Period
1st year Physiotherapy 2nd year Physiotherapy 3rd year Physiotherapy 4th year Physiotherapy	10th September - 21st December, 2012 (15 weeks)	27th December, 2012 – 8th February, 2013 (6.5 weeks)

2nd SEMESTER

Year	Course	Examination Period
1st year Physiotherapy 2nd year Physiotherapy 3rd year Physiotherapy 4th year Physiotherapy	11th February – 24th May, 2013 (15 weeks)	27th May – 12th July, 2013 (7 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:

1. According to the credit regulations, students should obtain an average of 30 credits in each semester
2. The criterion of obtaining 1 credit is to spend some 30 hours (including both contact and noncontact hours) studying the given subject.
3. Credit(s) can only be obtained if students pass the exam on the given subject.
4. 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.
5. 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.
6. 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.
7. The diploma work is worth 20 credits.
8. Internship (supervised practices) in the final year is compulsory.
9. 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).
10. 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).

Compulsory courses												
1. year												
		1st semester					2nd semester					
Subjects	Neptun code	L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	Prerequisites of taking the subject
Anatomy I	**NPHYS_MOR_01**	42	15	15	ESE	5						None
Anatomy II	**NPHYS_MOR_02**						53	12	12	ESE	5	None
Basic Microbiology	**NPHYS_MBI_01**	30			ESE	2						None
Basics of Informatics	**NPHYS_INF_02**						12		33	ESE	3	None
Basics of Physiotherapy	**NPHYS_BPH_01**	30			ESE	2						None
Bioethics	**NPHYS_ETH_01**	15	15		ESE	2						None
Biomechanics	**NPHYS_BIM_02**						30			ESE	2	Biophysics
Biophysics	**NPHYS_BIOF_01**	12	20		ESE	3						None
Cell Biology	**NPHYS_CEL_02**						30			ESE	2	None
Communication Skills	**NPHYS_COM_01**	15	15		AW5	3						None
First Aid	**NPHYS_ESNY_01**	6		15	AW5	2						None
General Principles in Health Care and Nursing	**NPHYS_APO_01**	15		15	ESE	2						None
Genetics and Molecular Biology	**NPHYS_GEN_02**						30			ESE	2	None
Hungarian language I	**NPHYS_HUN_01**			30	SIGN	0						None
Hungarian language II	**NPHYS_HUN_02**								30	SIGN	0	None
Immunology	**NPHYS_IMM_02**						30			ESE	2	None
Kinesiology I	**NPHYS_KIN_02**						30		120	ESE	8	Anatomy I
Medical Latin	**NPHYS_LAT_01**			30	AW5	2						None
Philosophy	**NPHYS_FIL_01**	15			ESE	1						None
Physical Education I	**NPHYS_**			30	SIGN	0						None

Compulsory courses														
1. year (continued)														
Subjects	Neptun code	1st semester						2nd semester						Prerequisites of taking the subject
		L	S	P	Exam	Crd.		L	S	P	Exam	Crd.		
Physical education II	NPHYS_										ESE	0		None
Professional Orientation I	NPHYS_ORI_01			30	AW5	2								None
Psychology	NPHYS_PSY_02							30			ESE	2		None

Compulsory courses												
2. year												
		1st semester					2nd semester					
Subjects	Neptun code	L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	Prerequisites of taking the subject
Applied Training Methods	**NPHYS_ATM_04**						15		15	ESE	3	Anatomy I, Physiology
Basic Biochemistry	**NPHYS_BCH_03**	30	15		ESE	3						Cell Biology
Basics of Health Sciences	**NPHYS_BHS_03**				FE	0						Physiology, Cardiorespiratory and Exercise Physiology, Neurophysiology
MethodologyBasics of Research	**NPHYS_BRM_03**	30			ESE	2						None
Biochemistry	**NPHYS_BCH_04**						10	5		ESE	1	Basic Biochemistry
Cardiorespiratory and Exercise Physiology	**NPHYS_CEP_03**	20	4	6	ESE	2						Anatomy II
Electro-, balneo-, hydro-, and climatotherapy	**NPHYS_EBH_04**						30		30	ESE	4	Biophysics
Gerontology	**NPHYS_GER_04**						30			ESE	2	Sociology
Health and Library Informatics	**NPHYS_HLI_03**	14	14	6	ESE	2						Basics of Informatics
Hungarian language II/2.	**NPHYS_HUN_04**								30	AW5	1	Hungarian language II/1.
Hungarian language III	**NPHYS_HUN_03**			30	SIGN	0						Hungarian Language II
Internal Medicine for Physiotherapists I	**NPHYS_IME_04**						45			ESE	3	Physiology, Introduction to Clinical Medicine
Internal Medicine for Physiotherapists II	**NPHYS_RPT_04**						15		30	ESE	3	Physiology, Introduction to Clinical Medicine
Introduction to Clinical Medicine	**NPHYS_ICM_03**	30		15	ESE	3						General Principles in Health Care & Nursing
Kinesiology	**NPHYS_KCE_04**									FE	0	Kinesiology I and II
Kinesiology II	**NPHYS_KIN_03**	30		140	ESE	9						Kinesiology I
Kinesiology Practice	**NPHYS_KPR_04**								80	ESE	0	Kinesiology II

Compulsory courses														
2. year (continued)														
Subjects	Neptun code	1st semester						2nd semester						Prerequisites of taking the subject
		L	S	P	Exam	Crd.		L	S	P	Exam	Crd.		
Mobilization-Manual Techniques I	**NPHYS_MMT_04**							10		90	AW5	5		Anatomy I
Neurophysiology	**NPHYS_NPH_03**	15	12	3	ESE	2								Anatomy II
Pathology	**NPHYS_PAT_04**							30			ESE	2		Biochemistry, Physiology, Immunology
Physiology	**NPHYS_PHY_03**	30	15		ESE	4								Anatomy II
Professional Hungarian Language I	**NPHYS_PHL_04**									30	SIGN	0		Hungarian Language III
Respiratory rehabilitation practice	**NPHYS_RRP_04**									80	SIGN	0		Internal Medicine for Physiotherapists II
Sociology	**NPHYS_SOC_03**	30			ESE	2								None

Compulsory courses												
3. year												
Subjects	Neptun code	1st semester					2nd semester					Prerequisites of taking the subject
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Dietetics	**NPHYS_DIE_05**	15		15	ESE	2						Physiology, Internal Medicine for Physiotherapists I
Health care law	**NPHYS_HCL_05**				ESE	0						None
Infant Care and Paediatrics for Physiotherapists I	**NPHYS_PED_06**						30		30	ESE	3	Kinesiology II, Mobilization-Manual Techniques II
Internal Medicine for Physiotherapists III	**NPHYS_IMC_05**	15	20	10	ESE	3						Internal Medicine for Physiotherapists II
Internal Medicine Practice I	**NPHYS_RRP_04**								80	SIGN	0	Internal Medicine for Physiotherapists III
Mobilization-Manual Techniques II	**NPHYS_MMT_05**			90	AW5	4						Mobilization-Manual Techniques I
Neurology for physiotherapists I	**NPHYS_NEU_06**						45		30	ESE	3	Pathology, Kinesiology II, Mobilization-Manual Techniques II
Obstetrics and Gynaecology for Physiotherapists	**NPHYS_OGP_06**						30		45	ESE	3	Kinesiology II, Internal Medicine for Physiotherapists II
Orthopaedics for Physiotherapists I	**NPHYS_ORT_05**	30			ESE	2						Biomechanics, Kinesiology II, Mobilization-Manual Techniques I
Paediatrics Practice	**NPHYS_PEP_06**								80	SIGN	0	Infant Care and Paediatrics for Physiotherapists I
Pharmacology	**NPHYS_PHA_05**	30			ESE	2						Biochemistry, Physiology

Compulsory courses												
3. year (continued)												
Subjects	Neptun code	1st semester					2nd semester					Prerequisites of taking the subject
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Physiotherapy of the Movement System - PT in Orthopaedics and Traumatology	**NPHYS_PTM_06**						45	40	80	ESE	7	Kinesiology II, Mobilization-Manual Techniques II, EBHCT
Preventive Medicine and Public Health I	**NPHYS_PMH_05**	30	30		ESE	4						Basic Microbiology, Internal Medicine for Physiotherapists I
Preventive Medicine and Public Health II	**NPHYS_PMH_06**						30	30		ESE	4	Preventive Medicine and Public Health I
Professional Hungarian Language II	**NPHYS_HUN_05**			30	SIGN	0						Professional Hungarian language I
Professional Hungarian Language III	**NPHYS_HUN_06**								30	FE	1	Professional Hungarian Language II
Professional Orientation II	**NPHYS_ORI_06**							15		AW5	1	Basics of Research Methodology
Radiology and Diagnostic Imaging	**NPHYS_RAD_06**								15	AW5	1	Biophysics, Anatomy II
Rheumatology for Physiotherapists I	**NPHYS_RHP_05**	45			ESE	3						Introduction to Clinical Medicine, Kinesiology II, Mobilization-Manual Techniques I
Rheumatology for Physiotherapists II	**NPHYS_RHP_06**						30		45	ESE	3	Rheumatology for Physiotherapists I
Thesis I	**NPHYS_THE_06**									AW5	3	Basics of Research Methodology
Traumatology and Intensive Therapy for Physiotherapists I	**NPHYS_TRA_05**	45			ESE	3						Anatomy II; Kinesiology II, Mobilization-Manual Techniques I

Compulsory courses												
4. year												
Subjects	Neptun code	1st semester					2nd semester					Prerequisites of taking the subject
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Economics	**NPHYS_ECO_07**	15			ESE	1						None
Infant Care and Paediatrics for Physiotherapists II	**NPHYS_PED_07**	15		10	ESE	2						Infant Care and Paediatrics for Physiotherapists I
Internal Medicine Practice II	**NPHYS_IMP_08**								80	AW5	3	Internal Medicine for Physiotherapists III
Introduction to Management	**NPHYS_MAN_07**	15			ESE	1						None
Neurology for physiotherapists II	**NPHYS_NEU_07**	15		60	ESE	4						Neurology for Physiotherapists I
Neurology Practice	**NPHYS_NEP_08**								80	AW5	3	Neurology for Physiotherapists II
Orthopaedics Practice	**NPHYS_ORP_08**								120	AW5	4	Physiotherapy of the Movement System (PT in Orthopaedics and Traumatology)
Psychiatry for Physiotherapists	**NPHYS_PSY_07**	30		15	ESE	3						Pathology, Kinesiology II
Rehabilitation	**NPHYS_REH_07**	30		30	ESE	3						Physiotherapy of Movement System (PT in Orthopedics and Traumatology)
Rehabilitation Practice	**NPHYS_REP_08**								80	AW5	3	Rehabilitation
Rheumatology Practice	**NPHYS_RHP_08**								120	AW5	4	Rheumatology for Physiotherapists II
Thesis II	**NPHYS_THE_07**				AW5	8						Thesis I
Thesis III	**NPHYS_THE_08**									AW5	9	Thesis II

Compulsory courses														
4. year (continued)														
Subjects	Neptun code	1st semester						2nd semester						Prerequisites of taking the subject
		L	S	P	Exam	Crd.		L	S	P	Exam	Crd.		
Traumatology and Intensive Therapy for Physiotherapists II	**NPHYS_TRA_07**	15		15	ESE	2								Physiology, Internal Medicine for Physiotherapists III
Traumatology Practice	**NPHYS_TRP_08**									120	AW5	9		Physiotherapy of the Movement System – PT in Orthopaedics and Traumatology

Required elective courses												
1. year												
		1st semester					2nd semester					
Subjects	**Neptun code**	L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	**Prerequisites of taking the subject**
Introduction to Subaquatic Therapy	**NPHYS_SAQ_0**						15		15	AW5	2	None
Sports Physiotherapy and Medicine I - Measurement and Improvement of Physical Abilities	**NPHYS_MEAS_02**						15		15	AW5	2	None

Required elective courses																
2. year																
Subjects	Neptun code	1st semester						2nd semester						Prerequisites of taking the subject		
		L	S	P	Exam	Crd.		L	S	P	Exam	Crd.				
Special Methods in Physiotherapy I - Aesthetic Body Forming Gymnastics	**NPHYS_ABG_04**									30	AW5	2		None		
Tools in Physiotherapy I - Gymnastic Equipments	**NPHYS_GEQ_04**									30	AW5	2		Kinesiology II		
Tools in Physiotherapy II - Balls	**NPHYS_BPT_04**									30	AW5	2		Kinesiology II		

Required elective courses												
3. year												
		1st semester					2nd semester					
Subjects	**Neptun code**	L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	**Prerequisites of taking the subject**
Geriatry	**NPHYS_GER_05**	30			ESE	2						Internal Medicine for Physiotherapists I
Oncology	**NPHYS_ONC_05**	30			ESE	2						Internal Medicine for Physiotherapists I, Pathology
Special Methods in Physiotherapy IV - Lymphdrainage	**NPHYS_PTL_05**	15		15	AW5	2						Internal Medicine for Physiotherapists I
Subaquatic therapy	**NPHYS_SAT_05**			30	AW5	2						Introduction to Subaquatic Therapy
Tools in Physiotherapy III - PNF in Practice	**NPHYS_PNF_06**						10		20	AW5	2	Mobilization-Manual Techniques II
Tools in Physiotherapy IV - Orthetics-Prosthetics	**NPHYS_OPR_06**						20		10	ESE	2	Orthopedics for Physiotherapists I

Required elective courses												
4. year												
		1st semester					2nd semester					
Subjects	**Neptun code**	L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	**Prerequisites of taking the subject**
Basics of Hippotherapy	**NPHYS__BHT_07**			60	AW5	4						None
Psychosomatics	**NPHYS_PSS_07**	15			ESE	1						Internal Medicine for Physiotherapists I
Special Methods in Physiotherapy II - Autostretching	**NPHYS_AST_07**			15	AW5	1						Mobilization-Manual Techniques I
Special Methods in Physotherapy V - Klapp's Methods	**NPHYS_KLM_07**			15	AW5	1						Physiotherapy of Movement the System (PT in Orthopedics and Traumatology)
Sports Physiotherapy and Medicine II - Sports Medicine	**NPHYS_SPM_07**	15			ESE	1						Orthopedics for Physiotherapists I

CHAPTER 7
ACADEMIC PROGRAM FOR THE 1ST YEAR

Department of Anatomy, Histology and Embryology

Subject: **ANATOMY I**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **42**
Seminar: **15**
Practical: **15**

1st week:
Lecture: General introduction. Structure of the bones – general introduction. Structure of the joints – general introduction
Seminar: Anatomical terminology. Terms of positions and directions. The parts of the human body
Practical: Positions and directions, the parts of the human body

2nd week:
Lecture: The muscular system - general introduction. Histology of the cartilage. The bones of the upper limb.
Seminar: The bones of the upper limb - discussion
Practical: The bones of the upper limb - demonstration and practice

3rd week:
Lecture: Histology of the bone. Development and growth of the bone. The joints of the upper limb
Seminar: The joints of the upper limb

4th week:
Lecture: Histology of the skeletal muscle. The muscles of the upper limb. Brachial plexus
Practical: The muscles of the upper limb.

5th week:
Lecture: Innervation and bood vessels of the upper limb. Action of muscles of the shoulder and the arm.
Practical: Nerves and blood vessels of the upper limb

6th week:
Lecture: Action of individual muscles and muscle groups of the forearm and the hand. Cardinal symptoms of injuries to nerve of the upper limb, paralysis of different muscle groups. Bones of the pelvic girdle.
Seminar: Action of individual muscles and muscle groups of the upper limb

7th week:
Lecture: Self control. Joints and ligaments of the pelvis. Bones of the lower limb.
Seminar: Bones of the lower limb - discussion
Practical: Bones of the lower limb - demonstration and practice

Self Control Test (Written midterm examination of the upper limb)

8th week:
Lecture: Joints of the lower limb. Muscles of the lower limb
Seminar: Joints of the lower limb

9th week:
Lecture: Blood vessels of the lower limb. The lumbar and the sacral plexus. Nerves of the lower limb.
Practical: Muscles of the lower limb

10th week:
Lecture: Action of individual muscles and muscle groups of the hip and the thigh, leg and the foot. Cardinal symptoms of injuries to nerves of the lower limb: paralysis of different muscle groups
Practical: Nerves and blood vessels of the lower limb

11th week:
Lecture: Bones and joints of the vertebral column. Bones and joints of the thoracic cage.
Seminar: Action of individual muscles and muscle groups of the lower limb

12th week:
Lecture: Bones and joints of the thoracic cage. Movements of the thoracic cage and the vertebral column. Muscles of the thorax and the back
Seminar: The structure of the thorax and vertebral column
Self Control Test (Written midterm exam of the lower limb)

13th week:
Lecture: Muscles of the neck. Action and innervations of muscles of trunk and neck. The abdominal wall and the inguinal canal.
Practical: Muscles of the trunk and the neck

14th week:
Lecture: The structure of the skull. The parts and bones of the braincase. The structure and bones of the facial skeleton. Internal cranial base
Seminar: The bones of the skull - discussion
Practical: The bones of the skull - demonstration and practice

15th week: **Lecture:** The muscles of facial expression and mastication. Action of the muscles of the face. The temporomandibular joint **Seminar:** The joints and muscles of the skull - discussion **Practical:** The joints and muscles of the skull - demonstration and practice	**Self Control Test (Written midterm exam of the trunk and head)**

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 head of the department may refuse to sign the Lecture Book if a student is absent from more than two practices in one semester even if he/she has an acceptable reason.

Midterm examinations

Three midterm written examinations will be held on the 7th, 12th and 15th weeks. The written exams cover the topics of lectures, seminars and practices of the semester. Participation on the midterm examination is compulsory.

End-semester examinations

The end-semester exam is an oral exam that covers the topics of lectures and practices of the semester and consists of the following topics:

1. Upper limb
2. Lower limb
3. Head, neck and trunk

Registration and postponement: through the NEPTUN system

Department of Behavioural Sciences

Subject: **BIOETHICS**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **15**
Seminar: **15**

1st week:
Lecture: The emergence of bioethics; the basic features of this discipline
Seminar: Interactive processing of the theme

2nd week:
Lecture: The nature of ethical decision making in clinical context
Seminar: Interactive processing of the theme

3rd week:
Lecture: The principles of modern bioethics
Seminar: Interactive processing of the theme

4th week:
Lecture: Paternalism and anti-paternalism in modern bioethics
Seminar: Interactive processing of the theme

5th week:
Lecture: Patients' rights (in Hungary and in other countries)
Seminar: Interactive processing of the theme

6th week:
Lecture: Informed consent; informing the patients in a new communicative environment. The ethical aspects of living with disabilities
Seminar: Interactive processing of the theme

7th week:
Lecture: The Hippocratic tradition in health care ethics
Seminar: Interactive processing of the theme

8th week:
Lecture: End-of-life decisions
Seminar: Interactive processing of the theme

9th week:
Lecture: Basic questions in contemporary research ethics
Seminar: Interactive processing of the theme

10th week:
Lecture: Ethics of new biotechnologies
Seminar: Interactive processing of the theme

11th week:
Lecture: The ethical aspects of physiotherapeutic practice
Seminar: Interactive processing of the theme

12th week:
Lecture: Ethics and medical anthropology of disability
Seminar: Interactive processing of the theme

13th week:
Lecture: Ethics of nursing
Seminar: Interactive processing of the theme

14th week:
Lecture: Basic questions in public health ethics
Seminar: Interactive processing of the theme

15th week:
Lecture: Consultation
Seminar: Written exam

Requirements

Attendance and activity in the classes are required; attendance at seminars is compulsory. Signature of Lecture Book will be refused if more than 4 absences at the seminars are documented. Usable understanding of the core theoretical concepts and conceptions is required as well as the knowledge on the actual patients' rights regulation.

Students get opportunities to make individual presentations on relevant topics at seminars.

Department of Behavioural Sciences

Subject: **COMMUNICATION SKILLS**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **15**
Seminar: **15**

1st week:
Lecture: Introduction to communication theory
Seminar: Introduction to communication theory

2nd week:
Lecture: Elements of communication; communicational channels
Seminar: Elements of communication; communicational channels

3rd week:
Lecture: Verbal communication
Seminar: Verbal communication

4th week:
Lecture: Non-verbal communication
Seminar: Non-verbal communication

5th week:
Lecture: Empathy and active listening
Seminar: Empathy and active listening

6th week:
Lecture: Different types of communication behavior (assertive, aggressive, passive)
Seminar: Different types of communication behavior (assertive, aggressive, passive)

7th week:
Lecture: Communication and interpersonal awareness
Seminar: Communication and interpersonal awareness

8th week:
Lecture: Communication with the elderly patients
Seminar: Communication with the elderly patients

9th week:
Lecture: Communication with impaired persons I
Seminar: Communication with impaired persons I

10th week:
Lecture: Communication with impaired persons II
Seminar: Communication with impaired persons II

11th week:
Lecture: Communication with the 'difficult' patient
Seminar: Film (part 1)

12th week:
Lecture: Communication with acute patients
Seminar: Film (part 2)

13th week:
Lecture: Communication with children
Seminar: Communication with different patients

14th week:
Lecture: Effective physiotherapist-patient communication
Seminar: Presentations of the field practices

15th week:
Lecture: Reviewing main topics
Seminar: Presentations of the field practices, closing the semester

Requirements

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

Department of Behavioural Sciences

Subject: **PHILOSOPHY**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Introduction – Plato's Metaphor of the Cave

2nd week:
Lecture: M. Heidegger: What is Metaphysics?

3rd week:
Lecture: What is Metaphysics?

4th week:
Lecture: R. Carnap: Overcoming Metaphysics through the Logical Analysis of Language

5th week:
Lecture: R. Carnap: Overcoming Metaphysics through the Logical Analysis of Language

6th week:
Lecture: Philosophical Problems of Health and Disease I

7th week:
Lecture: Philosophical Problems of Health and Disease II
Self Control Test

Requirements

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

Department of Biophysics and Cell Biology

Subject: **BIOPHYSICS**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **12**
Seminar: **20**

8th week:
Lecture: Mechanics of solids, biomechanics
Seminar: Biophysics: - Biostatistics: Set theory, definition and properties of probability, conditional probability

9th week:
Lecture: Mechanics of fluids and gases, the physics of circulation and respiration
Seminar: Biophysics: Discussion of the topics of lectures on weeks 8 and 9 Biostatistics: Medical applications of conditional probability (specificity, sensitivity, positive and negative predictive value), random variable, properties of distributions, binomial distribution

10th week:
Lecture: Basics of electricity, medical applications
Seminar: Biophysics: - Biostatistics: Poisson and normal distributions

11th week:
Lecture: Atomic physics, X-ray
Seminar: Biophysics: Discussion of the topics of lectures on weeks 10 and 11 Biostatistics: Sampling, representative sample, unbiased estimation, central limit theory, sample statistics (mean, median, mode, standard deviation, standard error of the mean)

12th week:
Lecture: Nuclear physics, radioactive isotopes, application of nuclear radiation
Seminar: Biophysics: - Biostatistics: Theory of statistical tests, the z-test

13th week:
Lecture: Medical imaging methods
Seminar: Biophysics: Discussion of the topics of lectures on weeks 12 and 13 Biostatistics: Statistical tests: t-tests (one-sample, two-sample, paired), F-test

14th week:
Seminar: Biostatistics test
Self Control Test

Requirements

End of semester exam:
The exam covers all the material of the semester. It includes the lecture materials and the corresponding chapters of the book. The exam is a written test, in which about 20% of the points is selected from biostatistics problems. Students achieving at least 70% on the biostatistics test on week 14th will receive exemption from the biostatistics part of the end of semester exam and get maximum points for this part. The same rules are applied to repeated exams.

Further information:
Announcements for students are posted on the post-board of the department and on the website http://biophys.med.unideb.hu

Department of Foreign Languages

Subject: **HUNGARIAN LANGUAGE I**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Organization of the course

2nd week:
Practical: Introduction, the Hungarian alphabet, pronunciation rules

3rd week:
Practical: Ki vagy? (Who are you?) Personal pronouns

4th week:
Practical: Jó napot kívánok! (Greetings, formal and informal, basic situations)

5th week:
Practical: Számok (Numbers, phone numbers)

6th week:
Practical: Time expressions

7th week:
Practical: Pénz (Money, banknotes, ordinal numbers, how much? how many?)

8th week:
Practical: Revision. Mid-term test.

9th week:
Practical: Hogy vagy? (How are you?)

10th week:
Practical: Milyen nyelven beszélsz? (What language do you speak?, nationalities)

11th week:
Practical: Mit csinálsz? (What are you doing? verb conjugation)

12th week:
Practical: Hová mész ma este? (Where are you going tonight? Past, present, future, where …to?)

13th week:
Practical: "Lenni" in past and future. Adverbs of place.

14th week:
Practical: Revision. End-term test.

15th week:
Practical: Oral minimal requirement exam.

Requirements

Attendance
The attendance is compulsory for the language classes. The maximum ratio of allowable absences is 10 % which is a maximum of 2 out of the weekly classes. The missed classes may be made up only in the same week. Maximum three language classes are allowed to be made up with an other group. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the signature is refused and the student has to repeat the course.

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

Testing, evaluation
In each Hungarian language course, students have to sit for 2 written language tests and a short minimal requirement oral exam.

Further minimal requirement is the knowledge of 200 words in each semester announced on the first week. Every week there is a (written or oral) word quiz from 20 words in the first 5-10 minutes of the class. In each word quiz students can be given 1 point if they know at least 80 % of the words asked and they have to collect 6 points at least to pass vocabulary minimal requirements. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam from all the 200 words along with the oral minimal exam. The bonus points awarded for the successful word quizzes (maximum 10) are added to the average score of the written tests.

The oral minimal exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral minimal results in failing the whole course. The score of the oral minimal exam is added to the average score of the mid-term and end-term tests (maximum 10 bonus points).
The minimal requirement for the mid-term and the end-term tests is 40 % each. If a student does not reach this score

he/she has to repeat the test. If both test scores reach 40 % the bonus points awarded for word quizzes (maximum 10) and the scores of the oral minimal exam (maximum 10) are added to the average score of the mid-term and end-term tests, resulting the final score. Based on the final score the tests are graded according to the following table:

Final score	Grade
0 – 59	fail (1)
60-69	pass (2)
70-79	satisfactory (3)
80-89	good (4)
90-100	excellent (5)

If the final score is below 60 the student once can take an oral remedial exam covering the material of the whole semester.

Consultation classes
In each language course once a week students may attend a consultation class with one of the teachers of that subject in which they can ask their questions and ask for further explanations of the material covered in that week. These classes are optional for the students.

Website: Oral exam topics and vocabulary minimal lists are available from the website of the Department of Foreign Languages: ilekt.med.unideb.hu.

Department of Foreign Languages

Subject: **MEDICAL LATIN**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: The Latin and Greek alphabet and pronunciation; Basic terminology of health sciences; Latin and Greek prefixes and suffixes.

2nd week:
Practical: The parts and regions of human body. Planes and directional terms in anatomical terminology; Genders, cases, declensions of Latin nouns.

3rd week:
Practical: Grammar. The use of Nominative and Genitive Singular and Plural suffixes in anatomical terminology.

4th week:
Practical: The skeleton of human body; basic terms of osteology; names of bones; an etymological approach. Word formation: adjectival suffixes.

5th week:
Practical: Terminology of joints; names and types of movement; Word formation: word roots, combining forms and compounds.

6th week:
Practical: Terminology of muscles 1; names describing the features of muscles

7th week:
Practical: Terminology of muscles 2; Analysis of names of muscles

8th week:
Practical: Mid-term test

9th week:
Practical: Clinical terms related to bones and joints; Greek equivalents of Latin word roots; names of orthopaedic diseases and disorders.

10th week:
Practical: Clinical terms related to the muscular system; names of diseases and disorders.

11th week:
Practical: Terminology of cardiovascular system

12th week:
Practical: Terminology of nervous system

13th week:
Practical: Latin numerals and abbreviations applied in prescriptions.

14th week:
Practical: Revision End-term test

15th week:
Practical: Assessment and evaluation.

Requirements

Attendance
The attendance is compulsory for the language classes. The maximum ratio of allowable absences is 10 % which is a maximum of 2 out of the weekly classes. The missed classes may be made up only in the same week. Maximum three language classes are allowed to be made up with an other group. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the signature is refused and the student has to repeat the course.

Testing, evaluation
In each language course, students have to sit for 2 written language tests.

Further minimal requirement is the knowledge of 300 words in each semester announced on the first week. Every week there is a (written or oral) word quiz from 30 words in the first 5-10 minutes of the class. In each word quiz students can be given 1 points if they know at least 80 % of the words asked and they have to collect 1 points at least to pass vocabulary minimal requirements. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam from all the 300 words along with the oral minimal exam. The bonus points awarded for the successful word quizzes (maximum 10) are added to the average score of the written tests.

The minimal requirement for the mid-term and the end-term tests is 40 % each. If a student does not reach this score he/she has to repeat the test. If both test scores reach 40 % the bonus points awarded for word quizzes (maximum 10) and maximum 10 extra bonus points awarded by the instructor for individual contribution to the class are added to the average score of the mid-term and end-term tests, resulting the final score. Based on the final score the tests are graded according to the following table:

Final score	Grade
0 – 59	fail (1)
60-69	pass (2)
70-79	satisfactory (3)
80-89	good (4)
90-100	excellent (5)

If the final score is below 60 the student once can take an oral remedial exam covering the material of the whole semester.

Consultation classes
In each language course once a week students may attend a consultation class with one of the teachers of that subject in which they can ask their questions and ask for further explanations of the material covered in that week. These classes are optional for the students.

Website: Vocabulary minimal lists and further details are available on the website of the Department of Foreign Languages: ilekt.med.unideb.hu.

Department of Medical Microbiology

Subject: **BASIC MICROBIOLOGY**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: The microbial word, cell-mediated and antibody-mediated (humoral) immunity, active and passive immunization; organization of the immune system; cells and molecules involved in immune response; antibacterial and antiviral immunity; vaccines

2nd week:
Lecture: Laboratory diagnosis of bacterial and viral infections, sterilization and disinfection; rules for collecting clinical specimens; microscopic examination; aerobic and anaerobic cultivation; precipitation, agglutination and complement activation; enzyme-linked immuno-sorbent assay (ELISA,), fluorescent-antibody assay

3rd week:
Lecture: Structure of bacterial cells, essential and nonessential components, exotoxins and endotoxins, non-toxic virulence factors; cell walls of Gram-positive and Gram-negative bacteria; virulence factors (capsule, enzymes, exotoxins and endotoxins)

4th week:
Lecture: Overview of the major Gram positive bacteria; Staphylococci, Streptococci, Bacillus, Clostridia; zoonosis; epidemiology and clinical findings; laboratory diagnosis

5th week:
Lecture: Overview of the major Gram negative bacteria; Enterobacteriaceae and non-fermentative Gram-negative bacilli; zoonotic infections; epidemiology and clinical findings; laboratory diagnosis

6th week:
Lecture: Bacterial respiratory tract diseases, skin and soft tissue infections caused by bacteria; Mycobacterium tuberculosis, Corynebacterium diphtheriae, Bordetella pertussis, Streptococcus pneumonia, Haemophylus influenzae, Legionella pneumophila, Mycoplasma pneumonia, Staphylococcus aureus, Steptococcus pyogenes, Clostridium perfringens

7th week:
Lecture: Sexually transmitted bacterial diseases. Central nervous system diseases caused by bacteria; Neisseria gonorrhoeae, Treponema pallidum, Chlamydia trachomatis, Neisseria meningitidis, Escherichia coli, Streptococcus pneumoniae, Streptococcus agalactiae, Listeria monocytogenes, Leptospira

8th week:
Lecture: General mycology; medically important fungi; general properties of fungi; dermatomycoses, subcutaneous mycoses, systemic and opportunistic mycoses; clinical diagnosis

9th week:
Lecture: The structure and classification of viruses; the pathogenesis of viral diseases; DNA and RNA viruses; viral growth cycle; transmission; portal of entry; viral vaccines

10th week:
Lecture: Respiratory tract infections caused by viruses; Adenovirus, Influenza virus, Parainfluenza virus, Respiratory syncytial virus, Rubella virus, Measles virus, Mumps virus, Rhinovirus, Coronavirus, Coxsackie virus

11th week:
Lecture: Agents of viral gastroenteritis; hepatitis viruses; viral enteritides (Rota-, Astro-, Calici-, Coronaviruses); Hepatitis A and E viruses, Hepatitis B, C, and D viruses

12th week:
Lecture: Agents of viral skin rash; congenital virus infections; Rubella virus. Measles virus, Human parvovirus B19, Herpes simplex virus 6, Varicella zoster virus, Cytomegalovirus, Coxsackie virus, Hepatitis B and C viruses, HIV virus, Human papillomavirus

13th week:
Lecture: The protozoal diseases; Intestinal protozoa (Entamoeba and Giardia), Blood and tissue protozoa (Trypanosoma, Plasmodium and Toxoplasma)

14th week:
Lecture: Helminths, Ectoparasites; Tenia, Schistosoma, Ascaris, Ancylostoma, Toxocara, Trichinella, Wuchereria, Onchocerca, Dracunculus. Pediculus humanus, Sarcoptes scabiei, Phthirus pubis

15th week:
Lecture: Consultation

Requirements

The attendance at lectures is highly recommended, since the topics of the oral end of semester examination cover the lectured topics.

Department of Physical Education

Subject: **PHYSICAL EDUCATION I**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Practical: **30**

Topics

Sports events: Aerobic, Basketball, Handball, Horse-riding, Iceskating, Skiing, Soccer, Spinning, Swimming, Tennis, Volleyball. Spare time sports: body building, badminton, floorball, Pilates, Speedminton, 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

Department of Physiotherapy

Subject: **BASICS OF PHYSIOTHERAPY**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Introduction to physiotherapy

2nd week:
Lecture: History of physiotherapy from the ancient times to the end of 20th century

3rd week:
Lecture: The spread and development of European trends in Hungary; the spread of physiotherapy in different clinical fields and its social trends

4th week:
Lecture: Main elements of the physiotherapy education. National and international professional organizations in physiotherapy

5th week:
Lecture: Team work for the restoration of function. Connection between physio-therapy and other fields of movement therapy (adapted physical educators, conductors, somato-educators), similarities and differences

6th week:
Lecture: Physical basis of the movement. Kinematics, equilibrium, performance

7th week:
Lecture: Biological basis of the movement. Active and passive elements of the movement system

8th week:
Lecture: Stimulus, reaction, regulation of the movement

9th week:
Lecture: Possibilities for the training of muscles. Performance, fatigue

10th week:
Lecture: Movements in the space. Planes, axes

11th week:
Lecture: Orientation, kinesthesia

12th week:
Lecture: Applicable postures in the training programs

13th week:
Lecture: Principles of a general training in physiotherapy

14th week:
Lecture: Schematic representation of the movement

15th week:
Lecture: Summary, consultation

Requirements

This is a key course in your development as a student in Physiotherapy program. Attendance at lectures is highly indispensable for acquiring the knowledge required to pass.

End of Semester Exam: written examination graded as follows:

0-59%: fail (1), 60-69%: pass (2), 70-79%: satisfactory, 80-89%: good (4), 90-100%: excellent (5)

Department of Physiotherapy

Subject: **GENERAL PRINCIPLES IN HEALTH CARE AND NURSING**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: System of definitions and philosophy of nursing; nursing theories; nursing models

2nd week:
Lecture: Basic human needs; assessment of the basic human needs; data collection; patient observation

3rd week:
Lecture: The planning of the nursing; the goals and the implementation of the nursing plan; nursing protocols and standards

4th week:
Lecture: Rules of the nursing documentation; ethical and legal aspects of nursing

5th 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

6th week:
Lecture: Defecation and micturition; hygienic needs; needs of communication and information

7th week:
Lecture: Higher needs; needs of the safety; the unconscious patient; postoperative nursing tasks; aseptic and hygienic environment

8th week:
Lecture: How to take care of a dying patient

9th week:
Practical: Scene of the nursing; structure of a hospital unit; observation of the patient; measurement of vital parameters

10th week:
Practical: 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

11th week:
Practical: Patient medication; personal and objective conditions of feeding; artificial feedings; feeding with tube

12th week:
Practical: Tools for collecting urine and faeces; the planning and evaluation of the safety for patient

13th week:
Practical: Summary and repetition

Requirements

The attendance at lectures is highly recommended, since the topics of the end of semester examination cover the lectured topics. The attendance at practical hours is obligatory. The signature in the Lecture Book may be refused if a student is absent from the practice more than twice even due to an acceptable reason.

Department of Physiotherapy

Subject: **PROFESSIONAL ORIENTATION I**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Making somebody aware stretching and relaxation. Warm-up exercises

2nd week:
Practical: Trunk exercises in a laying position

3rd week:
Practical: Limb exercises in a laying position

4th week:
Practical: Practice of exercises

5th week:
Practical: Teaching the correct sitting position. Different types of sitting positions

6th week:
Practical: Exercises in sitting position

7th week:
Practical: Climbing positions, exercises in this position

8th week:
Practical: Exercises in kneeling and semi-kneeling positions

9th week:
Practical: Practice of exercises

10th week:
Practical: Teaching the correct standing. Straight and round flexion of the trunk

11th week:
Practical: Exercises in a standing position

12th week:
Practical: Exercises to prepare of walk, walking exercises

13th week:
Practical: Coordination exercises in different positions

14th week:
Practical: Practice exam

15th week:
Practical: Practice exam

Requirements

Attendance at practices is compulsory. If you miss more than 4 practical hours the signature of the Lecture Book may be refused.

Division of Emergency Medicine

Subject: **FIRST AID**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **6**
Practical: **15**

1st week:
Lecture: Definition of "first aid"; first aid levels; time factor; behavior of first responder in the field; the emergency call

2nd week:
Lecture: Unconsciousness; airway obstruction; airway opening maneuvers; Gábor maneuver

3rd 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

4th week:
Lecture: Reanimation on the spot – organization problems; the theory of CPR; complications during the CPR; effect, results and success during CPR

5th week:
Practical: Examination of breathing and circulation; the chest-thrust; airway opening maneuvers; the recovery position (Gábor maneuver); one hour

6th week:
Practical: Practicing the ventilation (one hour)

7th week:
Practical: Practicing the chest compression (one hour)

8th week:
Lecture: CPR training without equipment (two hours)
Practical: CPR training without equipment (two hours)

9th week:
Practical: CPR training, two-rescuer method (two hours)

10th week:
Practical: Bleeding control with direct pressure and pressure point techniques; bandages and fixation; equipments, tools and maneuvers; general rules of provisory injury therapy; pressure bandage for controlling of arterial and venous bleeding on the spot (two hours)

11th week:
Practical: Bandages for head, nose; ears, eyes; chin, body and extremities; practicing the bandages (two hours)

12th week:
Practical: First aid in fractures, luxations, distortions and extended soft-tissue injuries; bandage for fixation with special triangle; Schantz collar; stifneck; Dessault bandage; fixation of finger and hand fractures; usage of Kramer splint and pneumatic splint (two hours)

13th week:
Practical: CPR training (two hours)
Self Control Test

14th week:
Lecture: Burning; first aid in burning diseases; shock

15th week:
Lecture: Intoxication; guideline of poisoning in toxicology; typical intoxications, special signs, first aid

Requirements

Attendance at lectures is inevitable condition for understanding the principles of the subject, attendance at practices is obligatory. The tutor may refuse the sign of Lecture Book if the student is absent from the practices more than twice in a semester. Missed practices should be made up for after consultation with the practice tutor. Facilities for a maximum of 2-make up practices are available at the Ambulance Station in Debrecen. The current knowledge of students will be tested two times in each semester in written test.

Department of Anatomy, Histology and Embryology

Subject: **ANATOMY II**
Year, Semester: 1st year/2nd semester**,** 1st year/2nd semester
Number of teaching hours:
Lecture: **53**
Seminar: **12**
Practical: **12**

1st week:
Lecture: (1) Progenesis, Fertilization. Cleavage. Implantation. (2) Bilaminar germ disc. (3) Differentiation of the ectoderm mesoderm and entoderm. Stages of development: embryonic and fetal periods. (4) Fetal membranes. Placenta. Twins

2nd week:
Lecture: (1) Epithelial tissue. (2) Connective tissue, adipose tissue. (3) Cardiac and smooth muscles. (4) Histology of blood vessels.

3rd week:
Lecture: (1) Blood. (2) Bone marrow and blood formation. (3) Histology of the lymphatic organs. (4) Cellular and molecular bases of the immunity
Seminar: General embryology.

4th week:
Lecture: (1-2) Heart. (3) Circulatory system, the vascular system of the embryo
Seminar: General histology

5th week:
Lecture: (1) Self control. (2) The nasal cavity, the pharynx and the larynx, the mediastinum. (3) The trachea, lungs and pleura. (4) The histology of the respiratory system
Practical: The anatomy of the heart
Self Control Test (Witten midterm exam of general embryology and histology.)

6th week:
Lecture: (1) The oral cavity, salivary glands, teeth. (2) The oesophagus, the stomach, small and large intestines. (3) The pancreas, the liver. (4) The kidney
Practical: The anatomy of the respiratory system.

7th week:
Lecture: (1) The urinary system. (2) Male genital organs. (3) Female genital organs, the menstrual cycle. (4) The perineum; the mammary gland
Practical: The anatomy of alimentary system

8th week:
Lecture: (1) The development of the nervous system – neurohistogenesis. (2) The histology of the nervous system. (3) Axonal transport; degeneration and regeneration in the nervous system. (4) The chemical synapses
Practical: The anatomy the urogenital apparatus.

9th week:
Lecture: (1) Parts of the nervous system, the ventricles. (2) The meninges, blood supply of the brain, the cerebrospinal fluid. (3) The structure and nerves of the spinal cord.
Seminar: Self control
Self Control Test (Oral midterm exam (Cardiovascular, respiratory, alimentary and urogenital systems).)

10th week:
Lecture: (1) The structure of the brainstem, the nuclei of cranial nerves. (2) The diencephalon. (3) The forebrain. (4) The cerebellum
Seminar: Structure of the spinal cord and spinal nerves
Practical: Gross anatomy of the spinal cord

11th week:
Lecture: (1) General principles of the somatosensory system, the skin. (2) Somatovisceral sensory functions. (3) The somatomotor system. (4) Roles of the spinal cord in the coordination of movements, the motor unit
Seminar: Structure of the brainstem and cranial nerves
Practical: Gross anatomy of the brainstem and cerebellum

12th week:
Lecture: (1) The parts of the motor system. (2) The pyramidal pathways, roles of cerebellum in the coordination of movements. (3) The autonomic nervous system. (4) The limbic system
Seminar: Structure of the diencephalon and cerebrum
Practical: Gross anatomy of the diencephalon and cerebrum

13th week:
Lecture: (1) The monoaminergic system, neuroendocrine regulation. (2) The hypothalamo-hypophyseal system. (3) The endocrine glands. (4) The taste and olfactory systems
Seminar: Motor functions of the nervous system

14th week:
Lecture: (1) The eye. (2) The visual system. (3) The auditory system. (4) The vestibular system
Practical: The sensory organs

15th week:
Seminar: Self control
Self Control Test (Midterm oral exam of the neuroendocrine system and sensory organs.)

Requirements

Prerequirement: Anatomy I
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 head of the department may refuse to sign the Lecture Book if a student is absent from more than two practices in one semester even if he/she has an acceptable reason.

Midterm examinations
Three midterm examinations will be held during the semester on the 5th, 9th and 15th weeks. The first exam will be written, the second and the third will be oral. The exams cover the topics of lectures, seminars and practices of the semester. The midterm exams will be evaluated with scores from 1 to 10.

Five grade evaluation of the overall academic performance of the student at the end of the semester:

At the end of the semester the overall academic performance (OAP) of the students will be evaluated with a five grade mark (OAP mark) on the basis of the following rules:

The performance of the students on the midterm examinations will be evaluated separately on each self control. To obtain a pass or better OAP mark the student has to collect at least 60% of the total score on all self controls. If the student does not reach the 60% limit from all parts the OAP mark is fail (1). If the midterm performance of the student is at least 60% from all parts, the scores of the three parts will be added and the OAP mark will be calculated on the basis of the following

Scores collected	Mark
18-20	2 (pass)
21-23	3 (satisfactory)
24-26	4 (good)
27-30	5 (excellent)

End-semester exam

Those students who have got a fail (1) mark have to sit for the end-semester exam, but the student will be examined only from those parts from which he/she did not reach the 6 point limit on the midterm examinations. The first exam is an “A” chance exam.

The end-semester exam is an oral exam that covers the topics of lectures, seminars and practices of the semester and consists of the following topics:

1. General embryology and histology
2. The visceral organs
3. Nervous system, sensory organs, endocrine system

If the student, on the basis of his/her performance on the midterm examinations, earn an exemption (collecting at leas 6 points) from one or two parts of the end-semester exam, the results of the midterm examinations will be converted into partial end-semester marks in the following way:

Scores collected	Mark
6	2 (pass)
7	3 (satisfactory)
8	4 (good)
9-10	5 (excellent)

Registration and postponement: through the NEPTUN system.

Department of Behavioural Sciences

Subject: **PSYCHOLOGY**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Introduction to psychology

2nd week:
Lecture: Theories of personality I

3rd week:
Lecture: Theories of personality II

4th week:
Lecture: Human development

5th week:
Lecture: The first year of life

6th week:
Lecture: The young child: from 1 to 4 years

7th week:
Lecture: The preschool child: from 4 to 6 years

8th week:
Lecture: The schoolchild: from 6 to 12 years

9th week:
Lecture: The adolescent: from 12 to 22 years

10th week:
Lecture: The young adult: from 22 to 40 years

11th week:
Lecture: The older adult: from 40 to 65 years

12th week:
Lecture: The ageing years: from 65 till death

13th week:
Lecture: Interpersonal behaviour. The psychology of social interaction I

14th week:
Lecture: Interpersonal behaviour. The psychology of social interaction II

15th week:
Lecture: The qualities of a 'good' physiotherapist from the patients' perspective

Requirements

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

Department of Biophysics and Cell Biology

Subject: **CELL BIOLOGY**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Introduction: The basic structure of procaryotic and eucaryotic cells (3 hrs)

2nd week:
Lecture: Chemical components of cells (3 hrs)

3rd week:
Lecture: Cell membrane and membrane transport (3 hrs)

4th week:
Lecture: Vesicular structures and vesicular transport (3 hrs)

5th week:
Lecture: Cytoskeleton (3 hrs)

6th week:
Lecture: Mitochondria. Cell-cell junctions (3 hrs)

7th week:
Lecture: Nucleus, chromatin, DNA (3 hrs)

8th week:
Lecture: Cell cycle, mitosis, meiosis (3 hrs)

9th week:
Lecture: Ion channels, calcium homeostasis (3 hrs)

10th week:
Lecture: Cell signaling (3 hrs)

Requirements

Attendance at lectures is highly recommended. Students participating at all the lectures receive 10 bonus points.

Examination:

Written exam at the end of the semester consisting of two parts: Part A: tests questions + short definitions (key words); total 20 points, passing level 14 points
Part B: test questions and short assay questions; total: 80 points
Total score = Part A + Part B + Bonus points
Grades:

<60 points – fail (1)
60-69 points – pass (2)
70-79 points – satisfactory (3)
80-89 points – good (4)
90≤ points – excellent (5)

At the end of the semester, students have to take a pre-final test and we offer the grade of this test as the final grade. All conditions are the same as in the end of semester exams.

Students not reaching the passing level or not accepting the offered grade can take the exam in the exam period (exam dates to be published in NEPTUN before the exam period).

Department of Foreign Languages

Subject: **HUNGARIAN LANGUAGE II**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Repetition and revision of 1st semester topics

2nd week:
Practical: Mit kérsz? (What would you like? In a buffet)

3rd week:
Practical: Formal and informal style, Accusative suffixes

4th week:
Practical: Kérsz egy kávét? (Would you like a coffee?, Adjective forming suffixes)

5th week:
Practical: Tud, akar, szeret, szeretne (Can, want, like, would like)

6th week:
Practical: Word formation, infinitives

7th week:
Practical: Milyen idő van ma? (Weather)

8th week:
Practical: Revision. Mid-term test.

9th week:
Practical: Irregular verbs

10th week:
Practical: Postán, vasútállomáson (At the post office, train station)

11th week:
Practical: Mit eszünk ma este? (Food and cooking; negation)

12th week:
Practical: Tetszik a ruhád (Colors, possessive suffixes)

13th week:
Practical: Az emberi test. Milyen szeme van?

14th week:
Practical: Revision. End-term test.

15th week:
Practical: Oral minimal requirement exam.

Requirements

Attendance
The attendance is compulsory for the language classes. The maximum ratio of allowable absences is 10 % which is a maximum of 2 out of the weekly classes. The missed classes may be made up only in the same week. Maximum three language classes are allowed to be made up with an other group. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the signature is refused and the student has to repeat the course.

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

Testing, evaluation
In each Hungarian language course, students have to sit for 2 written language tests and a short minimal requirement oral exam.

Further minimal requirement is the knowledge of 200 words in each semester announced on the first week. Every week there is a (written or oral) word quiz from 20 words in the first 5-10 minutes of the class. In each word quiz students can be given 1 point if they know at least 80 % of the words asked and they have to collect 6 points at least to pass vocabulary minimal requirements. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam from all the 200 words along with the oral minimal exam. The bonus points awarded for the successful word quizzes (maximum 10) are added to the average score of the written tests.

The oral minimal exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral minimal results in failing the whole course. The score of the oral minimal exam is added to the average score of the mid-term and end-term tests (maximum 10 bonus points).

The minimal requirement for the mid-term and the end-term tests is 40 % each. If a student does not reach this score he/she has to repeat the test. If both test scores reach 40 % the bonus points awarded for word quizzes (maximum 10) and the scores of the oral minimal exam (maximum 10) are added to the average score of the mid-term and end-term tests, resulting the final score. Based on the final score the tests are graded according to the following table:

Final score	Grade
0 – 59	fail (1)
60-69	pass (2)
70-79	satisfactory (3)
80-89	good (4)
90-100	excellent (5)

If the final score is below 60 the student once can take an oral remedial exam covering the material of the whole semester.

Consultation classes
In each language course once a week students may attend a consultation class with one of the teachers of that subject in which they can ask their questions and ask for further explanations of the material covered in that week. These classes are optional for the students.

Website: Oral exam topics and vocabulary minimal lists are available from the website of the Department of Foreign Languages: ilekt.med.unideb.hu.

Department of Immunology

Subject: **IMMUNOLOGY**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: The structure and function of the immune system. Organs, cells and the molecules of the immune system

2nd week:
Lecture: Native and adaptive immunity; antigens and the theory of clonal selection

3rd week:
Lecture: The development of B- and T-lymphocytes; antigen-specific receptors. Structure and function

4th week:
Lecture: The structure of antibodies; the function of antibodies

5th week:
Lecture: Activation of B-lymphocytes; the humoral immune response

6th week:
Lecture: Antigen recognition by T-lymphocytes; antigen processing and presentation

7th week:
Lecture: Cytokines, lymphokines; effector T-cells

8th week:
Lecture: Cooperation between the cellular and humoral immune response. Immunity to infectious diseases

9th week:
Lecture: Allergy, hypersensitivity reactions. Immune tolerance versus autoimmunity

10th week:
Lecture: Transplantation, immuno-deficiency. Immune response against tumours

11th week:
Lecture: Antibody-mediated effector functions; precipitation

12th week:
Lecture: Agglutination; activation of the complement system

13th week:
Lecture: Phagocytosis. T-cell effector functions

14th week:
Lecture: Determination of the concentration of cytokine; determination of cytotoxic activity of immune cells

15th week:
Lecture: Consultation

Requirements

Evaluation: Based on an end-term written exam a grade will be offered. Pass level is at 50% of the total score. Offered grades may be improved by taking an oral exam that is considered an “A” chance even if the student fails to reach the pass level.

Department of Orthopedic Surgery

Subject: **BIOMECHANICS**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **30**

8th week:
Lecture: Definition and history of biomechanics

9th week:
Lecture: Skeleton as an organ

10th week:
Lecture: Modelling and remodelling

11th week:
Lecture: Tissue mechanics, static examinations

12th week:
Lecture: The function and morphology of skeletal muscle

13th week:
Lecture: Fracture and healing of bones

14th week:
Lecture: The histological structure of bones

15th week:
Lecture: Practical demonstration

Requirements

The required prerequisite to take the course is Biophysics.

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The ESE is carried out as a written examination (A chance) and either written or oral exam (B chance) and oral exam (C chance).

Department of Physical Education

Subject: **PHYSICAL EDUCATION II**
Year, Semester: 1st year/2nd semester**,** 1st year/2nd semester
Number of teaching hours:

Topics

Sports events: Aerobic, Basketball, Handball, Horse-riding, Iceskating, Skiing, Soccer, Spinning, Swimming, Tennis, Volleyball. Spare time sports: body building, badminton, floorball, Pilates, Speedminton, 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

Department of Physiotherapy

Subject: **KINESIOLOGY I**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **30**
Practical: **120**

1st week:
Lecture: Kinematics, introduction to kinetics; description of motion, planes and axes; definition of forces, vectors, gravitational force
Practical: Physiotherapeutic methods, principles and rules in the physiotherapy General rules of physical exercises, body positions used in the physiotherapy

2nd week:
Lecture: Introduction to statics and dynamics; muscle forces: total force vector, lever system, force components
Practical: Instrumentation in physical examination; joint range of motion. Movement terminology Rudiments: elongation, isometric and isotonic muscle contractions, synergisms (practical examples)

3rd week:
Lecture: Materials in human joints; general properties of connective tissue; complexity of joint design and function; elements of muscle structure and function
Practical: Assessment of active and passive range of motion. Physiological and pathological end feels Active exercises of the truncal flexors in different positions by taking the principle of gradation into consideration: with and without instruments, in pairs

4th 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
Practical: Examinations in pathological states, based on James Cyriax's theory Strengthening exercises of the truncal flexors launched from supine position, and on oblique desk

5th week:
Lecture: Structure and function of the sacral region: sacroiliac and symphysis pubis articulation
Practical: Physical examination of the pelvis Repetition

6th week:
Lecture: Structure and function of the lumbar region: typical lumbar vertebra, articulations, kinematics and kinetics
Practical: Physical examination of the lumbar spine. Active exercises of the truncal extensors in different positions by taking the principle of gradation into consideration: with and without instruments, in pairs

7th week:
Lecture: Effect of muscles on lumbar and sacral regions
Practical: Examinations of pathological signs in the lumbar and pelvic region; differential diagnostics Strengthening exercises of the truncal extensors launched from prone position, on all fours, creeping-, kneeling-, standing positions, and on oblique desk

8th week:
Lecture: Structure and function of the thoracic region: typical thoracic vertebra, articulations, kinematics and kinetics
Practical: Physical examination of the thoracic spine. Repetition

9th week:
Lecture: Diaphragm, muscles associated with rib cage. Respiratory function
Practical: Examination of the thoracic spine in pathological conditions Active exercises of the lateral truncal flexors in different positions by taking the principle of gradation into consideration: with and without instruments, in pair

10th week:
Lecture: Structure and function of the cervical region: typical cervical vertebra, articulations, kinematics and kinetics. Atlanto-occipital and atlanto-axial joints
Practical: Physical examination of the neck Active exercises of the truncal rotators in different positions by taking the principle of gradation into consideration: with and without instruments, in pairs

11th week:
Lecture: Effect of muscles on the cervical regions
Practical: Examination of the neck in pathological states Strengthening exercises of the lateral truncal flexors and rotators with and without instruments, exercises in pairs

12th week:
Lecture: The temporo-mandibular joint: articular surfaces, disk, capsules and ligaments; mandibular motion and muscular control
Practical: Examinations of the temporo-mandibular joint in physiological and pathological states; relationships between the functions of the temporo-mandibular joint and neck Repetition

13th week:
Lecture: Components of the shoulder complex: sterno-clavicular, acromio-clavicular, scapulo-thoracic and gleno-humeral joints
Practical: Examinations of the sterno-clavicular-, acromio-clavicular, and scapulo-thoracic joints in physiological and pathological states Practical examination

14th week:
Lecture: Structure and function of the gleno-humeral joints. Static and dynamic stabilization
Practical: Examinations of the gleno-humeral joint in physiological and pathological states Practical examination

15th week:
Lecture: Integrated function of the shoulder complex
Practical: Consultation Practical examination

Requirements

Prerequisite: Anatomy I

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance at practices is compulsory. If you missed more than 2 practices per modules, the signature may be refused.

*Examination:*The ESE consists of three components: (1) the theoretical component can be achieved by taking 3 mid-semester examinations. The average of the three results gives the grade from the theoretical part. If any of the partial grades is fail, the theoretical grade is fail. (2) the result of the module entitled Examination of movement system can be achieved by taking 2 mid-semester examinations consisting of written and oral parts (anatomy and basic kinesiology). To pass the written part is an indispensable condition for the oral exam. The limit is 60%. At the end of the semester the third written examination contains the general rules of patient examination, also with the limit of 60%. The three scores will be averaged as the partial grade of the Examination of movement system module. The grade "fail" can be improved once during the examination period. (3) The third partial grade derives from the theoretical and practical examinations involving topics in the Functional analysis of movements. The grade "fail" can be improved once during the examination period.

If the partial grades are at least „pass", an ESE grade will be offered by averaging the three partial grades.
If you missed the offered grade you can take an ESE consisting of only the part(s) that you failed. From the topics of movement examination and analysis of movements the exam is an oral one, the theoretical knowledge will be asked in a written examination (in the case of the A and B chances). The C chance examination contains both written and oral parts. If any of the partial grades is fail, the final grade is fail.

Department of Preventive Medicine

Subject: **BASICS OF INFORMATICS**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **12**
Practical: **33**

1st week:
Lecture: History of computers. Principles of computers' operation (data handling, measures, hardware, software)

2nd week:
Lecture: Component of PCs, functions and operation of peripheral units. Electronic data storage (concepts of data, file, directory) Concepts and function of operation systems, basics of Windows

3rd week:
Practical: Data files, types of and connection between data storing files, operation with data files, directory structure. Software installation

4th week:
Lecture: Networks: concept, setting, function, operation, application
Practical: Networks: concept, setting, function, operation, application

5th week:
Lecture: Text editing software (WORD x.x)
Practical: Editing, formatting, saving, printing documents; creation of header, footer and footnotes

6th week:
Practical: Preparation of table of content and index. Cross-reference, hyperlink. Creation of table. Styles', templates' application; insertion of pictures, objects, into document; operations in big documents

7th week:
Practical: Preparation of table of content and index; cross-reference, hyperlink; creation of table; styles, template application; insertion of pictures, objects, into document; operations in big documents

8th week:
Lecture: Application of spreadsheet software (EXCEL x.x)
Practical: Application of spreadsheet software (EXCEL x.x). Design of sheets, data preparation

9th week:
Practical: Entering data, calculations, functions

10th week:
Practical: Entering data, calculations, functions

11th week:
Practical: Preparation of diagrams. Formatting tables, diagrams, inserting them into Word documents

12th week:
Lecture: Computer graphics
Practical: Application of image editing software. (MS Power Point x.x) Presentation preparation

13th week:
Practical: Designing and formatting slides and adding notes to; editing equations, diagrams, tables, compilation of presentation

14th week:
Lecture: Internet, electronic mailing
Practical: Internet, electronic mailing

15th week:
Practical: Compressing files; computer viruses

Requirements

Mid-term assessments: The students have to prepare an assay and to prepare homework for every topic. The average of the grades for assays and home assignments is the final grade.

Requirements to acknowledge the semester: The participation at practical hours is compulsory: the maximum of acceptable absence is 2 of all. Further requirement is the submission of the assays and home assignments.

*Exemption opportunity:*if the student submits acceptable certification of the completion of a course on basic informatics, and demonstrate the course description defined level of knowledge on computer usage, the student is not obliged to take part in the course.

Department of Preventive Medicine

Subject: **GENETICS AND MOLECULAR BIOLOGY**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Introduction to molecular genetics; structure of the DNA molecule; the genetic code

2nd week:
Lecture: DNA replication and recombination

3rd week:
Lecture: Genes and alleles; Mendel's laws; genotype and phenotype

4th week:
Lecture: he chromosomal basis of heredity. Human cytogenetics; chromosomes; chromosome alterations

5th week:
Lecture: Transformation and transduction; molecular mechanisms of crossing over Summary lectures, consultation
Self Control Test

6th week:
Lecture: Molecular genetics of gene expression; molecular mechanism of gene regulation

7th week:
Lecture: Mutations and DNA repair; the role of mutations in the development and progression of diseases

8th week:
Lecture: Genetic polymorphisms; the role of genetic polymorphisms in the predisposition of different diseases

9th week:
Lecture: Molecular evolution and population genetics; the genetic basis of complex inheritance
Self Control Test

10th week:
Lecture: The genetic origin of cancer
Self Control Test

11th week:
Lecture: Introduction to genetic engineering; application of recombinant DNA technology in biotechnology and medicine

12th week:
Lecture: Nucleic acid manipulations I. Polymerase chain reaction

13th week:
Lecture: New molecular biological techniques in the diagnosis of diseases; molecular targeted therapies

14th week:
Lecture: The Human Genome Programme (overview, advantages and results)
Self Control Test

15th week:
Lecture: Summary of lectures; Consultation

Requirements

Signing the lecture book:
Attendance on 30% of lectures is compulsory. Attendance on lectures is highly recommended, for acquiring the knowledge required to write a successful test and to pass the course. Lectures are the best sources to obtain and structure the necessary information. During the consultations students can ask their questions related to the topic of the lectures discussed before.

*Self Control Test:*Only students who attended on 90% of lectures are allowed to write the self control tests. The dates and the topics for self control test will be announced on the first week of the semester. Based on the scores of the self control tests you will receive a „recommended final mark." If you accept this mark it will be your „final mark".

End of Semester Exam: the exam is a written test from all the material covered during the semester. Who accepts the recommended mark is exempted from the ESE in the examination period.

CHAPTER 8
ACADEMIC PROGRAM FOR THE 2ND YEAR

Department of Biochemistry and Molecular Biology

Subject: **BASIC BIOCHEMISTRY**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **30**
Seminar: **15**

1st week:
Lecture: Energy in biology. Oxidative phosphorylation. PDH complex. The citric acid cycle and its regulation. The mithocondrial genome.
Seminar: Requirements and topics

2nd week:
Lecture: Carbohydrate metabolism I. Introduction. Digestion and absorption of carbohydrates. Main pathways of the carbohydrate metabolism, central role of glucose. Absorption and transport of monosaccharides. Carbohydrate metabolism in various tissues. Glycolytic pathway and its regulation. Rapoport-Luebering shunt. Energy production of the glycolytic pathway. Shuttle pathways. Cori cycle. Glucose-alanine cycle. Gluconeogenesis.
Seminar: Energy in biology

3rd week:
Lecture: Carbohydrate metabolism II. Glycogen in liver and muscle. Degradation and synthesis of glycogen. Regulation of glycogen synthesis and degradation.
Seminar: Carbohydrate metabolism

4th week:
Lecture: Carbohydrate metabolism III. Pentose phosphate pathway. Synthesis of disaccharides. Metabolism of galactose and fructose. Metabolism of glucuronic acid. Inherited diseases in the carbohydrate metabolism.
Seminar: Carbohydrate metabolism

5th week:
Lecture: Lipid metabolism I. Introduction. Lipid metabolism during well feed stage. Synthesis of fatty acids. Synthesis of triacyl-glycerols and its regulation.
Seminar: Carbohydrate metabolism

6th week:
Lecture: Lipid metabolism II. Lipid metabolism during starvation, oxidation of fatty acids (beta oxidation). Ketone bodies. Lipid and carbohydrate metabolism during starvation and well feed state. Biochemistry of diabetes mellitus.
Seminar: Lipid metabolism

7th week:
Lecture: Lipid metabolism III. Synthesis of sphyngolipids and phospholipids The mevalonate metabolic pathway. Synthesis of cholesterol. Excretion of cholesterol. Steroid hormones. Bile acids.Vitamin D.
Seminar: Lipid metabolism

8th week:
Seminar: Lipid metabolism
Self Control Test (topics of 1st-7th weeks)

9th week:
Lecture: Lipid metabolism IV. Organization of lipid structures. Mixed micelles in the digestive tract. Lipoproteins in blood plasma. Cholesterol transport in the body. The LDL receptor and its gene. Biochemical explanation of elevated blood cholesterol level. Eicozanoids. Obesitity.
Seminar: Discussion of the self-control test experiences

10th week:
Lecture: Amino acid metabolism I. Comparison of the amino acid metabolism with the carbohydrate and lipid metabolisms. Formation and utilization of the intracellular amino acid pool. Nitrogen balance. Exogenous amino acid sources, digestion of proteins. Amino acid transports. Structure and function of glutathione. Endogenous amino acid sources: intracellular protein breakdown. Common reactions in the amino acid metabolism: fate of the nitrogen. Transaminations and deaminations. Enzymes containing pyridoxal phosphate cofactors, and their mechanism of action: stereo electronic control. Formation and elimination of ammonia in the body. Nitrogen transport between the tissues.
Seminar: Lipid metabolism

11th week:
Lecture: Amino acid metabolism II. The urea cycle and its regulation. Decarboxylation and carboxylation reactions in the amino acid metabolism. C1 transfer and transmethylation, related enzyme and vitamin deficiencies. Monooxygenation and dioxygenation reactions. Fate of the carbon skeleton of amino acids: glucogenic and ketogenic amino acids. Examples: degradation of isoleucine and valine, phenylalanine and related enzyme deficiencies (PKU). Precursor functions: NO, creatine, polyamines, PAPS, carnitine, cathecolamines.synthesis.
Seminar: Amino acid metabolism

12th week:
Lecture: Nucleotides metabolism I. Nucleotide pool. Digestion and absorption of nucleic acids. Sources of atoms in purine ring. De novo synthesis of purine nucleotides. Regulation of purine nucleotide synthesis. Salvage pathways for the purine bases. Degradation of purine nucleotides. Diseases associated with purine nucleotide metabolism. Gout.
Seminar: Amino acid metabolism

13th week:
Lecture: Nucleotides metabolism II. De novo synthesis of pyrimidine nucleotides. Regulation of pyrimidine nucleotide synthesis. Salvage pathways for the pyrimidines. Degradation of pyrimidine nucleotides. Nucleoside and nucleotide kinases. Synthesis of deoxythymidilate. Nucleotide coenzyme synthesis (NAD, FAD, CoA). Anti tumour and anti viral action of base and nucleoside analogues.
Seminar: Nucleotides metabolism

14th week:
Lecture: Biochemistry of nutrition. Energy requirement. Basic metabolic rate. Energy content of the food. Energy storage and thermogenesis. Biochemical mechanism of obesity. Protein as nitrogen and energy source. Nitrogen balance. Essential amino acids. Protein malnutrition. Vegetarianism. Clinical aspects of protein nutrition. Carbohydrates and lipids. Pathological mechanisms in obesity. Vitamins: structure and biochemical functions. Relationship between the biochemical functions and the symptoms of deficiency. Essential inorganic elements of the food (metabolism, function, deficiency).
Seminar: Nucleotides metabolism

15th week:
Seminar: Biochemistry of nutrition
Self Control Test (topics of 7-14th weeks)

Requirements

Attendance at the lectures is highly recommended. Attendance at seminars is obligatory. The signature of the Lecture Book may be refused if a student is absent from more than 1 seminars.

Achievement during the semester will be evaluated in term of points.

During the semester points can be collected for the self-control tests from the material of the lectures. Self control tests consist of simple and multiple choice test questions and assay questions. Grade will be offered on the base of the collected points for all those students, who collected at least 50% of points: pass (2) for 50%-64%; satisfactory (3) for 65%-74%; good (4) for 75%-85%; excellent (5) for 86%-100%. Those students who want to get a better grade can take an exam. Those, who did not collect 50% have to take a written exam in the exam period.

The end of semester exam is a written one and consists of similar test and assay questions to those of self-control tests. 50 percent is needed to get a passing mark, and the grade increases as shown above.

Department of Foreign Languages

Subject: **HUNGARIAN LANGUAGE III**
Year, Semester: 2nd year/1st semester**,** 2nd year/1st semester
Number of teaching hours:
Practical: **30**

1st week:
Lecture: Introduction. Revision

2nd week:
Lecture: Számok

3rd week:
Lecture: Bemutatkozás

4th week:
Lecture: Verb conjugation in present tense

5th week:
Lecture: Where? When?

6th week:
Lecture: "-ik" group verbs

7th week:
Lecture: Revision, practice

9th week:
Lecture: Numbers 1-1000

10th week:
Lecture: Occupational titles (medical)

11th week:
Lecture: Question word "Hány?"

12th week:
Lecture: Time expressions. "-ban/-ben" endings

13th week:
Lecture: Revision, practice

15th week:
Lecture: Assessment and evaluation

Requirements

Attendance
The attendance is compulsory for the language classes. The maximum ratio of allowable absences is 10 % which is a maximum of 2 out of the weekly classes. The missed classes may be made up only in the same week. Maximum three language classes are allowed to be made up with an other group. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the signature is refused and the student has to repeat the course.

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

Testing, evaluation
In each Hungarian language course, students have to sit for 2 written language tests and a short minimal requirement oral exam.

Further minimal requirement is the knowledge of 200 words in each semester announced on the first week. Every week there is a (written or oral) word quiz from 20 words in the first 5-10 minutes of the class. In each word quiz students can be given 1 point if they know at least 80 % of the words asked and they have to collect 6 points at least to pass vocabulary minimal requirements. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam from all the 200 words along with the oral minimal exam. The bonus points awarded for the successful word quizzes (maximum 10) are added to the average score of the written tests.

The oral minimal exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral minimal results in failing the whole course. The score of the oral minimal exam is added to the average score of the mid-term and end-term tests (maximum 10 bonus points).

The minimal requirement for the mid-term and the end-term tests is 40 % each. If a student does not reach this score he/she has to repeat the test. If both test scores reach 40 % the bonus points awarded for word quizzes (maximum 10) and the scores of the oral minimal exam (maximum 10) are added to the average score of the mid-term and end-term tests, resulting the final score. Based on the final score the tests are graded according to the following table:

Final score	Grade
0 – 59	fail (1)
60-69	pass (2)
70-79	satisfactory (3)
80-89	good (4)
90-100	excellent (5)

If the final score is below 60 the student once can take an oral remedial exam covering the material of the whole semester.

Consultation classes
In each language course once a week students may attend a consultation class with one of the teachers of that subject in which they can ask their questions and ask for further explanations of the material covered in that week. These classes are optional for the students.

Website: Oral exam topics and vocabulary minimal lists are available from the website of the Department of Foreign Languages: ilekt.med.unideb.hu.

Department of Internal Medicine

Subject: **INTRODUCTION TO CLINICAL MEDICINE**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **30**
Practical: **15**

1st week:
Lecture: The history of nursing and medicine

2nd week:
Lecture: The physician's behavior; the patient and health care staff relationship; the professional secrecy

3rd week:
Lecture: Symptoms of diseases. History taking: family history, previous diseases, present complaints

4th week:
Lecture: General medical physical examination (inspection, palpation, percussion, auscultation); body temperature, fever; body mass index (BMI)

5th week:
Lecture: Clinical laboratory: pathology, clinical microbiology, clinical bio-chemistry, haematology

6th week:
Lecture: The role of non invasive and invasive diagnostic tests in the diagnosis (electrocardiography, nuclear medicine techniques, etc.)

7th week:
Lecture: Medical imaging techniques (x-ray, ultrasound, MRI, PET, CT etc), and different forms of endoscopy

8th week:
Lecture: Physical examination of the respiratory and cardiovascular system
Practical: History taking, case record; calculation of BMI

9th week:
Lecture: Physical examination of the abdomen and the urogenital system
Practical: Physical examination of the chest, arterial blood pressure measure-ments, examination of peripheral arteries and veins. Pulse quality

10th week:
Lecture: Physical examination of the locomotors system
Practical: Physical examination of the abdomen (gastro-intestinal system, liver and spleen) and the urogenital system

11th week:
Lecture: Physical examination of the nervous system
Practical: Physical examination of the locomotor system

12th week:
Lecture: Importance of medical consultation
Practical: Physical examination of the nervous system

13th week:
Lecture: Medical diagnosis, types of diagnosis, hospital course, hospital discharge summary
Practical: Physical examination of the skin, the lymph nodes, the oral cavity, the eyes, the breasts and axillae

14th week:
Lecture: Medical treatment and patients care, follow-up
Practical: Physical examination of the head, the neck, and the thyroid gland

15th week:
Lecture: Final tutorial – consultation
Practical: Practical examination

Requirements

The required prerequisite to take the Introduction to Clinical Medicine course is the successful completion of General Principles in Health Care and Nursing.

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

Department of Physiology

Subject: **NEUROPHYSIOLOGY**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **15**
Seminar: **12**
Practical: **3**

1st 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: Discussion of clinical relations (injury, direct and indirect stimulation of muscles)

2nd week:
Lecture: Somatosensory function of CNS: psychological and psychophysical basic definitions; deep sensation; proprioception
Seminar: Role of proprioception in the spatial orientation, methods for examination

3rd week:
Lecture: Exteroceptors, the skin as a sensory organ
Seminar: Discussion of topics, methods for examination

4th week:
Lecture: Significance and mechanisms of pain sensation; specific and aspecific ascending sensory systems
Seminar: Clinical significance of pain sensation, analgesia

5th week:
Lecture: Function of sensory cortex; disorders of sensory function
Seminar: Discussion of lectured topic focused on clinical correlations

6th week:
Lecture: Specific sensory organs: physiology of vision: the eye as an optical instrument, retinal functions; cortical mechanisms; pathophysiologic relations
Practical: Examination of vision

7th week:
Lecture: Physiology of hearing: physical principles, receptors, audiometry; disorders of hearing function; smell and taste: receptors, modalities, disturbed sensory functions
Seminar: Physiology of special sense organs (summary)

8th week:
Lecture: Somatomotor function of CNS: reflex activity at different levels; proprioceptive and exteroceptive spinal cord reflexes; injury of spinal cord, acute and remaining consequences
Seminar: Normal and pathologic reflexes
Practical: Examination of reflex actions

9th week:
Lecture: Reflex control of posture, the vestibular apparatus as receptor structure; distribution of muscle tone
Seminar: Vestibular function, methods for investigation, eye movements with vestibular origin

10th week:
Lecture: Role of the brainstem in the movement regulation; cortical mechanisms
Seminar: Plegia, paresis, altered muscle tone

11th week:
Lecture: Role of the cerebellum in the coordination of movement; dysfunction of motoric system at various level of regulation
Practical: Examination of coordination

12th week:
Lecture: Skeletal muscles as effectors: motor unit; electric properties of skeletal muscle; characteristics of mechanical response; regulation of muscle tone; neuromuscular synaptic transmission
Seminar: Types of skeletal muscle; adaptation of muscle to use

13th week:
Lecture: Myasthenia gravis; dysfunctions of skeletal muscles with myogenic and neurogenic origin; denervation and inactivity atrophy
Seminar: Discussion of pathophysiologic relations

14th week:
Lecture: Autonomic nervous system: characterization of autonomic reflexes; role of hypothalamus and limbic system in the regulation of visceral functions; synergism in the humoral and neuronal regulation

15th week:
Lecture: Electric activity of the brain cortex: ECG. Higher functions of the cerebral cortex: wakefulness and sleeping; consciousness; emotional processes; learning, memory, cogitation, fantasy
Seminar: Higher functions of the nervous system

Requirements

The required prerequisite to take the Neurophysiology course is the successful completion of Anatomy II.

It is recommended to attend the lectures, and it is compulsory to be present on seminars. The signature of the Lecture Book may be refused for the semester if one has more than two absences from the seminars.

The knowledge of the students will be tested 2 times during the semester using a written test system. The participation is compulsory and shall be preceded by ID confirmation (i.e. student's card, passport, driving license if it contains a photo of the owner). At the end of the semester, students take a written end-semester exam (ESE). However, if one's average score of the two mid-semester tests is above 55%, it is not compulsory to take the ESE, and a mark based on the average score will be offered.

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. The selected topics in Neurophysiology are constitutive parts of the comprehensive examination "Basics of Health Sciences".

E-learning module completes the course.

Department of Physiology

Subject: **PHYSIOLOGY**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **30**
Seminar: **15**

1st week:
Lecture: Membrane transport mechanisms; humoral regulation of cell function; significance of the membrane potential in the regulation of cell function
Seminar: Introduction to physiology, requirements; general overview of the structure and function of the cell membrane; role of membrane defects in the pathomechanism of diseases

2nd week:
Lecture: Compartmentalization of body fluids; blood as a circulating body fluid; plasma and formed elements
Seminar: Types of anaemia; redistribution of body fluid compartments in pathological conditions

3rd week:
Lecture: Blood typing; hemostasis; mechanisms against bleeding; definition and significance of homeostasis; homeostatic parameters
Seminar: Clinical significance of blood typing, Rh+ incompatibility; disturbed haemostasis; anticoagulant agents

4th week:
Lecture: Cardiovascular physiology: electrical and contractile properties of the heart; impulse generation and conduction; basics and diagnostic significance of electrocardiography; the heart as a pump; the cardiac cycle; neural and humoral regulation of cardiac function
Seminar: Starling mechanism as a compensatory mechanism in normal and pathological conditions, analysis of normal electrocardiogram

5th week:
Lecture: Cardiovascular physiology: characteristics of peripheral circulation; principles of hemodynamics; functional characteristics of blood vessels; vascular tone; main determinant of arterial blood pressure; reflex and humoral control of blood pressure and redistribution of cardiac output
Seminar: Discussion of lectured topics focused on the blood pressure and its regulation

6th week:
Lecture: Respiratory physiology: mechanics of mechanics of breathing; alveolar ventilation; gas transport in the blood; neural and chemical control of breathing
Seminar: Discussion of lectured topics focused on the static and dynamic respiratory parameters

7th week:
Lecture: Motor and secretory function of the gastrointestinal tract; digestion, absorption; nutrition (food requirements, regulation of food intake); energy balance, thermoregulation
Seminar: Discussion of lectured topics completed with pathophysiologic relations

8th week:
Lecture: General aspects of renal function; glomerular filtration; types of tubular transport processes; characteristic parameters of the renal function: glomerular filtration rate (GFR), filtration fraction (FF), clearance (C) and extraction coefficient (E); principles of the volume and osmoregulation; characteristics of the salt and water reabsorption; pH regulation; role of the respiration and excretion in the acid-base balance; micturition
Seminar: The role of the kidney in the homeostatic regulation

9th week:
Lecture: Hormonal regulation; paracrine and endocrine mechanisms; hypothalamo-hypophyseal system; neurohormones and tropic hormones
Seminar: General overview of the hormonal regulation; relationships of neural an humoral regulation

10th week:
Lecture: Thyroid hormones (T3 and T4); endocrine regulation of intermediate metabolism and basal metabolic rate; physiological effects of corticosteroids
Seminar: Hormonal regulation of cellular metabolism, especially the metabolism of skeletal muscle cells

11th week:
Lecture: Significance of the ionized calcium concentration in the blood; regulation of calcium handling; endocrine function of the pancreas; significance and regulation of blood glucose level
Seminar: Tetania; hypo- and hyperglycemia

12th week:
Lecture: Sexual hormones; somatic and autonomic nervous system; introduction to neural control; voluntary and reflex regulation
Seminar: Genital and extragenital effects of sexual steroids

13th week:
Lecture: Sensory function of the nervous system; stimulus, receptor, conduction of excitation; cortical

processing; physiological basis of vision and hearing; motor function of nervous system: function and regulation of skeletal muscles (cortical, subcortical and spinal levels of regulation, coordinative function of cerebellum)
Seminar: Summary of somatic neural regulation

14th week:
Lecture: Regulation of visceral functions; common and different features of sympathetic and parasympathetic regulation; integrated function of the sympathetic nervous system and the adrenal medulla
Seminar: Summary of the neural control of visceral functions

15th week:
Lecture: Summary, consultation
Seminar: Consultation

Requirements

The required prerequisite to take the Physiology course is the successful completion of Anatomy II.

It is recommended to attend the lectures, and it is compulsory to be present on seminars. The signature of the Lecture Book may be refused for the semester if one has more than two absences from the seminars.

The knowledge of the students will be tested 3 times during the semester using a written test system. The participation is compulsory and shall be preceded by ID confirmation (i.e. student's card, passport, driving license if it contains a photo of the owner). At the end of the semester, students take a written end-semester exam (ESE). However, if one's average score of the three mid-semester tests is above 55%, it is not compulsory to take the ESE, and a mark based on the average score will be offered.

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. The selected topics in Physiology are constitutive part of the final examination "Basics of Health Sciences".

E-learning module completes the course.

Department of Physiotherapy

Subject: **BASICS OF HEALTH SCIENCES**
Year, Semester: 2nd year/1st semester
Number of teaching hours:

Topics

Morphological and functional characterisation of the cells, types of tissues

1. Definition of the cell, the tissue, the organ and the system of organs; the cell as a morphological and functional unit; structure of the cell membrane, characterisation of the transport processes
2. Epithelial tissue: morphological and functional characterisation
3. Connective tissue: fibers, matrix, cells; types of connective tissues; morphological and functional characterisation of muscle tissues

Body fluid compartments; structure and permeability of the capillary wall; characteristics of the transcapillary transport processes

4. Body fluid compartments, internal environment, homeostasis
5. Internal environment of the cells; definition and significance of homeostasis; controlled (homeostatic) parameters; thermoregulation; hyperthermia, fever
6. The blood as circulating body fluid: formed elements and plasma; histology of the blood; bone marrow; haematopoiesis; erythropoietin mechanism; functions of plasma proteins
7. Function of th ered blood cells, structure of haemoglobin, mechanism of the oxygen and carbondioxide transport
8. Anaemia: iron-deficient and pernicious anaemia
9. Degradation of haemoglobin, jaundice; portal circulation of the liver; entero-hepatic circulation of the biliary pigments
10. Aspecific and specific defense mechanisms; basic definitions in immunology: antigen, antibody, cellular and humoral immune response, immunity and immunisation; vaccination
11. AB0 and Rh blood groups: antigens, antibodies; incompatible transfusion, Rh incompatibility

Structure and function of the circulatory system

12. Structure of the circulatory system; the heart, the systemic circulation and the pulmonary circulation; characterisation of the internal transport of materials; fetal circulation
13. Structure of the human heart; morphological description and functional characterisation of the impulse generating and conducting elements; basis of the electrocardiography, diagnostic significance of the ECG
14. Characterisation of the cardiac muscle function; the heart as a pump; stroke volume and cardiac output
15. The fibrosous frame of the heart, orificia, valves: morphology and function; heart sounds and murmurs, vitium and its haemodynamic consequence
16. Regulation of the cardiac output; Starling mechanism; autonomic neural regulation (morphological and functional aspects)
17. The own vessels of the heart; features of the coronary circulation; disorders of the cardiac blood supply
18. Cardiac insufficiency, cardiac decompensation, symptoms of the left and right insufficiency
19. Types of the blood vessels; definition, origin, significance, and components of the vascular tone; elasticity of the wall (morphologic background and funtional aspects), changes in aging; resistance and capacity vessels; development and characteristics of the pulse waves
20. Changes in the arterial blood pressure parallel to the cardiac cycle; pulse pressure, mean arterial pressure – definitions and significance; factors determining the mean arterial pressure; blood pressure measurement
21. Neural and humoral regulation of the arterial blood pressure; innervation of vessels; cerebral regions involved in the regulation of blood pressure and distribution; morphological basis of the reflex regulation
22. Hypertension, hypotonia, arteriosclerosis and its risk factors
23. Morphological characteristics of the veins; structure of the lymphatic system; characteristics of the venous and lymphatic circulation, abnormalities
24. Cerebral circulation; production and circulation of the cerebrospinal fluid; blood-liquor and blood-brain barriers; regulation of cerebral circulation; disturbances

Structure and function of the respiratory system

25. Structure of the respiratory system; mechanics of breathing (respiratory muscles, innervation, changes in the intrapulmonary and intrapleural pressures); lung volumes (tidal volume, vital capacity, residual volume); anatomical and functional dead spaces
26. Alveolar gas exchange (morphological background and mechanism); relationship of pulmonary circulation and breathing
27. Transport of respiratory gases; mechanism of the gas transport between the blood and the tissues (internal breathing)
28. Dynamic respiratory parameters; pathologic changes in the restrictive and the obstructive pulmonary diseases; determining factors of the airway resistance, abnormalities
29. Cerebral regions taking part in the regulation of respiration, automatic and voluntary regulation of the respiration; pneumothorax, artificial respiration

Structure and function of the gastrointestinal tract

30. Morphological characterisation; blood supply, especially the portal circulation, enteric nervous system and gastrointestinal hormones
31. Parts of the GI tract, structure of the wall; the intestinal smooth muscle; basic movements of the GI tract; masticatory muscles, innervation; anatomy and innervation of the pharynx and the oesophagus; mechanism of the mastication and the swallow; vomite as a defensive reflex
32. Morphological characterisation of the rectum; sphincters, innervation; haemorrhoidal veins, their functional significance; mechanism of defecation, active and passive incontinence
33. Anatomy of the stomach, the pancreas and the small intestines; secretory function of the GI, regulation of the juice production
34. Gross and fine structure of the liver and bile ducts; role of the bile in the digestion; summary of the hepatic function; damage of the liver with alcoholic origin, hepatic cirhhosis, hepatic insufficiency
35. Structure of the intestinal wall, circulation and absorption; obstipation and diarrhoea

Structure and function of the excretory system, role of the kidney in the homeostasis

36. Macroscopic anatomy of the kidney, structure of the nephron; blood supply of the kidney; features of the renal circulation; regulation of the circulation; urinary pathways
37. Renal Plasma Flow (RPF), Glomerular Filtration Rate (GFR), Filtration Fraction (FF) and Extraction Coefficient (E); the clearance principle
38. Structure of the Malpighian corpuscle; mechanism of the glomerular ultrafiltration; composition of the ultrafiltrate; regulation of GFR
39. Morphological characteristics of the renal tubules; characterisation of tubular transport processes (glucose transport, PAH transport), Na^+ and water reabsorption
40. Role of the kidney in the regulation of water and electrolyte balance; structure of JGA, hormone-dependent processes in the collecting duct; morphological basis of the aldosteron and ADH production
41. Mechanism of the micturition; vegetative reflex arch and voluntary control; active and passive incontinence; renal insufficiency, azotaemia and uraemia

Hormonal regulation

42. System of the endocrine glands; hypothalamo-hypophyseal system; definition of hormones, general characterisation of the hormonal effects at cellular level
43. Structure and function of the thyroid gland; effects ofthyroid hormones; hypo- and hyperfunction; hormonal regulation of growth (effects of the GH, thyroid hormones and sexual steroids); gigantism and nanism
44. Endocrine pancreas; adrenal cortex and medulla; hormonal regulation of the blood glucose concentration; diabetes mellitus
45. Hormone-producing cells in the ovary and testis; spermiogenesis, oogenesis; horonal regulation of the sexul functions
46. Relatonships of the nervous system and the hormonal regulation; stress reactions and adaptation

Structure and function of the movement system, neural control of the skeletal muscle function

47. Bones: structure, types, accessory elements; connections of the bones; structure, types and movements of the joints
48. Types of the cartilage; structure and function

49. Bone tissue, ossification, growth, remodelling
50. Bone as calcium store; hormonal regulation of the calcium balance; hormonal control of the growth in length (GH, thyroid hormones, sexual steroids)
51. Structure and function of the skeletal muscles; neuromuscular junction; motor unit
52. Types and connections of the vertebras; curvatures and movements of the spinal column
53. Bones, joints, muscles, vessels and nerves of the shoulder girdle
54. Structure of the pelvis; structure and movements of the hip joint, hip muscles
55. Bones, joints, muscles, blood supply and innervation of the lower extremities
56. Bones and joints of the chest; respiratory muscles, respiratory movements
57. Bones, joints and muscles of the trunk; mimic and masticatory muscles, their innervation
58. Main parts of the nervous system; spinal cord and brain nerves
59. Histology of the nervous system; degeneration and regeneration in the nervous system; chemical synapse
60. Sensory function of the CNS; somato-visceral sensory system
61. Hierarchy of the motor system; motor tracts, centres; pyramidal and extrapyramidal tracts – morphology and function
62. Reflex and voluntary control of the movements; paralysis; extrapyramidal disorders
63. Gross anatomy and fine structure of the cerebellum; role of the cerebellum in the regulation of movements
64. Vestibular apparatus, role in the regulation of posture
65. Spinal cord reflexes (somatic and vegetative), definition and regulation of the muscle tone
66. Structure and the function of the autonomic nervous system

Requirements

Pre-requisite for taking comprehensive exam is to absolve the Physiology, Cardiorespiratory and Exercise Physiology and Neurophysiology subjects.

It is recommended to take the examination at the end of the 3rd semester, but the date should not be later than the end of the 6th semester. The components of the comprehensive exam are the written and oral examinations. The written examination covers a complex assessment containing short essays, multiple choice questions and identification of charts. If the score is higher than 50%, the student will be exempted from the oral part of the examination, but there is a possibility to take it.

The offered mark will be constructed as follows:< 50 % fail (1), 50 – 62% pass (2), 63 – 74% satisfactory (3), 75 – 87% good (4), 88 – 100% excellent (5).

Department of Physiotherapy

Subject: **CARDIORESPIRATORY AND EXERCISE PHYSIOLOGY**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **20**
Seminar: **4**
Practical: **6**

1st week:
Lecture: Impulse generation and conduction in the heart in normal and pathological conditions; myogenic and neural regulation of cardiac output
Practical: Discussion of clinical relations (disorders of impulse generation and conduction); analysis of abnormal ECG records

2nd week:
Lecture: Factors affecting cardiac performance. Role of Starling mechanism in pathologic conditions (2 hours)

3rd week:
Lecture: Main features of coronary circulation; oxygen consumption and physical work (2 hours)

4th week:
Lecture: Aspects of cardiac performance; metabolic demand for physical activity (2 hours)

5th week:
Lecture: Regional circulation in resting condition (pulmonary circulation, cerebral flow, blood supply of skeletal muscles; renal and splanchnic circulation)
Practical: Pulse qualities, blood pressure measurement, heart sounds

6th week:
Lecture: Regional circulation during physical activity, redistribution of cardiac output
Practical: Changes in cardiovascular parameters during physical activity, restoration

7th week:
Lecture: Characteristics of circulation and changes in the flow during physical exercise in the skeletal muscle vessels
Practical: Changes in cardiovascular parameters during physical activity, restoration

8th week:
Lecture: Microcirculatory system, effects of physical exercise on its function; venous circulation, improvement the venous return by physical exercise (2 hours)
Seminar: Summary: humoral factors acting on the precapillary vessels

9th week:
Lecture: Mechanical aspects of respiration; resistance of airways; static and dynamic respiratory parameters
Practical: Obstructive and restrictive respiratory disorders, pathophysiology, analysis of respiratory parameters

10th week:
Lecture: Factors affecting respiratory minute volume; effects of physical exercise on respiration (2 hours)
Practical: Analysis of respiratory parameters during physical activity

11th week:
Lecture: Alveolar gas exchange in normal and pathological conditions

12th week:
Lecture: Chemical and neural regulation of respiration
Seminar: Normal and pathological breathing patterns

13th week:
Lecture: Long term adaptation of cardiorespiratory system to physical activity
Seminar: Discussion of adaptation

14th week:
Lecture: Energetic aspects of physical work; metabolic changes during physical activity
Seminar: Nutrients requirement, oxygen dept, recovery of the energy stores

15th week:
Lecture: Physical activity and thermoregulation
Seminar: Closing seminar, consultation

Requirements

The required prerequisite to take the Cardiorespiratory and Exercise Physiology course is the successful completion of Anatomy II.

It is recommended to attend the lectures, and it is compulsory to be present on seminars. The signature of the Lecture Book may be refused for the semester if one has more than two absences from the seminars.
The knowledge of the students will be tested 2 times during the semester using a written test system. The participation

is compulsory and shall be preceded by ID confirmation (i.e. student's card, passport, driving licence if it contains a photo of the owner). At the end of the semester, students take a written end-semester exam (ESE). However, if one's average score of the two mid-semester tests is above 55%, it is not compulsory to take the ESE, and a mark based on the average score will be offered.

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. The selected topics in Neurophysiology are constitutive part of the final examination "Basic health care issues".

E-learning module completes the course.

Department of Physiotherapy

Subject: **KINESIOLOGY II**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **30**
Practical: **140**

1st week:
Lecture: The elbow complex. Structure of the humero-ulnar and humero-radial articulations; surfaces, axis of motion, joint capsules, ligaments and muscle action
Practical: Physical examination of the elbow General rules of physical exercises on extremities

2nd week:
Lecture: Structure of the superior and inferior radio-ulnar articulations. Surfaces, axis of motion, joint capsules, ligaments, stability and muscle action. Relationship to the hand and wrist
Practical: Examination of the elbow in pathological cases Active exercises of the shoulder in different positions

3rd week:
Lecture: The wrist complex: Structure of the radio-carpal and mid-carpal joints. Surfaces, axis of motion, joint capsules, ligaments and muscle action. Stability and instability
Practical: Physical examination of the wrist and hand Active exercises of the shoulder in different positions

4th week:
Lecture: The hand complex: Structure of the carpo-metacarpal, metacarpo-phalangeal and interphalangeal joints. Surfaces, axis of motion, joint capsules, ligaments and muscle action; stability and instability; flexor and extensor mechanisms
Practical: Examination of the wrist and hand in pathological states Active exercises of the elbow

5th week:
Lecture: Structure of the thumb
Practical: Physiological and pathological examination of the thumb Active exercises of the wrist and hand

6th week:
Lecture: Axes of the lower extremities
Practical: Physiological axes and their deviations: examination and differential diagnosis Repetition

7th week:
Lecture: The hip complex: structure, function and muscles
Practical: Physical examination of the hip Active exercises of the hip in different positions

8th week:
Lecture: Coordinated motions of the femur, pelvis and lumbar spine; pelvi-femoral motion; closed-chain hip joint function
Practical: Hip joint pathology Active exercises of the hip in different positions

9th week:
Lecture: Lecture: The knee complex: structure, function and muscles. Stabilizers of the knee
Practical: Physical examination of the knee Active exercises of the knee

10th week:
Lecture: Patello-femoral joint: surface, joint congruence, motion, stability
Practical: Examination of the knee in pathological states Active exercises of the ankle and foot

11th week:
Lecture: The ankle and foot complex: plantar arches – structure and function
Practical: Physiological examination of the ankle and plantar arches Active gait exercises

12th week:
Lecture: The ankle and foot complex: ankle, subtalar and transverse tarsal joints. Action of muscles
Practical: Examination of the ankle and plantar arches in pathological states Repetition

13th week:
Lecture: Static and dynamic posture. Analysis of standing posture
Practical: Examination of the posture Practical exam

14th week:
Lecture: Locomotion: kinematics, kinetics
Practical: Examination of the gait Practical exam

15th week:
Lecture: Abnormal gaits
Practical: Summary of physical examination Practical exam

Requirements

Prerequisite: Kinesiology I

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance at practices is compulsory. If you missed more than 2 practices per modules, the signature may be refused.

Examination: The ESE consists of 2 components: (1) the theoretical component can be achieved by taking an ESE as a written examination (2) the practical knowledge will be assessed by oral examination, which can be absolved even in the semester. The oral exam is allowed only after passing the minimum requirement of a written exam. The limit is 60%.

Department of Physiotherapy

Subject: **SOCIOLOGY**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Introduction to sociology and to the module

2nd week:
Lecture: Definition of health; gender and health

3rd week:
Lecture: Social class and health; ethnicity and health

4th week:
Lecture: Families and changing family relationships

5th week:
Lecture: Social forces, health and illness

6th week:
Lecture: The social distribution of illness

7th week:
Lecture: The experience of illness, social contexts

8th week:
Lecture: Disability and chronic illness

9th week:
Lecture: Mental health and mental illness

10th week:
Lecture: The profession of medicine

11th week:
Lecture: Other health care providers

12th week:
Lecture: Patients and practitioners

13th week:
Lecture: Main scopes of social policy in general and in Hungary I

14th week:
Lecture: Main scopes of social policy in general and in Hungary II

15th week:
Lecture: Repetition, discussion

Requirements

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

Department of Preventive Medicine

Subject: **BASICS OF RESEARCH METHODOLOGY**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: The principles of scientific inquiry. Validity, reliability, precision of research

2nd week:
Lecture: Ethics of science

3rd week:
Lecture: Types of scientific research

4th week:
Lecture: Methods of quantitative research I

5th week:
Lecture: Methods of quantitative research II

6th week:
Lecture: Methods of qualitative research

7th week:
Lecture: Orientation in the scientific literature I

8th week:
Lecture: Orientation in the scientific literature II

9th week:
Lecture: Designing a scientific inquiry (study design)

10th week:
Lecture: Collecting data, measurements, observations

11th week:
Lecture: Data storage, processing, and analysis

12th week:
Lecture: Interpreting and publishing results

13th week:
Lecture: Rules of scientific publication

14th week:
Lecture: Presenting results

15th week:
Lecture: Requirements for diploma thesis

Requirements

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

Examination: written

Kenézy Life Sciences Library

Subject: **HEALTH AND LIBRARY INFORMATICS**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **14**
Seminar: **14**
Practical: **6**

1st week:
Lecture: Information collection: defining types of information sources in terms of their currency, format (for example a review vs. an original article), authority, relevance, and availability, new directions in information search

2nd week:
Lecture: Role and structure of an academic library

3rd week:
Lecture: Electronic library, digital library tools

4th week:
Lecture: Process and structure of scholarly communication, primary stakeholders, new directions

5th week:
Lecture: Evaluation of data sources in scholarly publishing, role and nature of bibliometric indicators

6th week:
Seminar: Perform database searches using logical operators (Boolean), in a manner that reflects understanding of medical language, terminology and the relationships among medical terms and concepts

7th week:
Seminar: Library catalogs: search methods and related online services

8th week:
Seminar: Medline (PubMed) and other relevant bibliographic databases I

9th week:
Seminar: Medline (PubMed) and other relevant bibliographic databases II

10th week:
Lecture: Structure of health care: primary care, specialty care, hospital, public health; functions of health care; economic and medical administration: similarities, differences, relations, standards; data in health care; classification: taxonomy, nosology; code systems; ICD, WHO, SNOMED… data sources: measurements, diagnostic sources, digital signal processing, digital image and sound processing
Seminar: Identify and acquire full-text electronic documents (EBSCO, ScienceDirect, Springer Link)

11th week:
Lecture: Data management: information systems, databases, network management, data flow; physical and logical techniques and solutions of the protection of IT systems; the issues of privacy, legal and ethical rules; basics of cryptography; comparison of the health care systems in different countries: administration, coding, finance, data management; standards
Seminar: Reference softwares (RefWorks): preparing bibliographies, managing bibiliographic data

12th week:
Practical: Information and data processing; the concepts of information; steps of information processing; data – information – knowledge; foundations of database management, data model, database definition; building databases; importance of databases

13th week:
Practical: The elements of data model; database operations; database management; operations: MS Excel; formulas, functions, graphs; how to increase the efficacy of dissections? Statistical aspects of data management in health care; tools in Excel application for special purposes; evaluation and presentation of results

14th week:
Practical: Database management systems: MS Access (defining keys; table design, layout, interconnection, converting data); differences between spreadsheet and Database management applications; decision making; geographic information system (GIS) visualization methods; application of GIS in health care; communication between systems, applications

15th week:
Practical: Repetition, discussion

Requirements

Prerequisite: Basics of Informatics

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

Department of Biochemistry and Molecular Biology

Subject: **BIOCHEMISTRY**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **10**
Seminar: **5**

1st week:
Lecture: Biochemistry of cell proliferation. Mitotic cascade. M-phase kinase. Products and biochemical function of protooncogenes. Mechanism of oncogene formation. Tumor suppressor genes and their biochemical function. Biochemical features of terminal differentiation. Biochemistry of programmed cell death.
Seminar: Introduction, requirements, topics

2nd week:
Lecture: Metabolism of red blood cells. Hemoglobin; structure, function and regulation. Pathological forms of hemoglobin. Serum proteins. Synthesis of hem, regulation of the synthesis in eukariotic cells. Degradation of hem: formation, conjugation and excretion of bile pigments. Disorders in hem metabolism. Iron transport, storage and distribution in the human body. Molecular regulation of the iron level in cells: stability of transferrin receptor and ferritin mRNA, IRE binding protein.
Seminar: Biochemistry of cell proliferation

3rd week:
Lecture: Cellular, humoral and vascular aspects of blood clotting. Structure, activation, adhesion and aggregation of thrombocytes. Classification of blood clotting factors and their role. Blood clotting in the test tube and in the body. Role of thrombocytes and the vascular endothel. Limiting factors, inhibitors and activators of blood coagulation. Fibrinolysis.
Seminar: Metabolism of red blood cells

4th week:
Lecture: Biochemistry of the extracellular matrix: function, main components: glucosaminoglycans and proteoglycans, collagens, elastin, adhesion proteins. Synthesis and degradation of collagens.
Seminar: Blood clotting, extracellular matrix

5th week:
Lecture: Biochemistry of the sport. Proteins of myofibrils. Molecular mechanism for the generation of force. Metabolic fuel of muscle. Metabolism of muscle in various work load. Effect of exercise.
Seminar: Metabolism of muscle
Self Control Test

Requirements

Attendance at the lectures is highly recommended. Attendance at seminars is obligatory. The signature of the Lecture Book may be refused if a student is absent from more than 1 seminars.

Achievement during the semester will be evaluated in term of points.

During the semester points can be collected for the self-control tests from the material of the lectures. Self control tests consist of simple and multiple choice test questions and assay questions. Grade will be offered on the base of the collected points for all those students, who collected at least 50% of points: pass (2) for 50%-64%; satisfactory (3) for 65%-74%; good (4) for 75%-85%; excellent (5) for 86%-100%. Those students who want to get a better grade can take an exam. Those, who did not collect 50% have to take a written exam in the exam period.

The end of semester exam is a written one and consists of similar test and assay questions to those of self-control tests. 50 percent is needed to get a passing mark, and the grade increases as shown above.

Department of Foreign Languages

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE I**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Revision

2nd week:
Practical: "s, z, sz" verbs

3rd week:
Practical: Accusative ending "-t"

4th week:
Practical: "Kivel, mivel" question words

5th week:
Practical: Plural ending "-k"

6th week:
Practical: Yes/No questions

7th week:
Practical: Revision

9th week:
Practical: "Daily routine" vocabulary

10th week:
Practical: "Mikor?" question word

11th week:
Practical: Food

12th week:
Practical: Adverbs of time and place. Past tense

13th week:
Practical: Revision

15th week:
Practical: Assessment and evaluation

Requirements

Prerequisite: Hungarian Language III

Attendance
The attendance is compulsory for the language classes. The maximum ratio of allowable absences is 10 % which is a maximum of 2 out of the weekly classes. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the signature is refused and the student has to repeat the course.
Assessment: *Signature.*

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

Students are not allowed to take Professional Hungarian II. course before entering 3rd year.

Testing, evaluation
In Professional Hungarian Language course, students have to sit for a mid-term and an end-term written language tests and 2 short minimal requirement oral exams.

Further minimal requirement is the knowledge of 200 words in each semester announced on the first week. Every week there is a (written or oral) word quiz from 20 words in the first 5-10 minutes of the class. In each word quiz students can be given 1 point if they know at least 80 % of the words asked and they have to collect 6 points at least to pass vocabulary minimal requirements. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam from all the 200 words along with the oral minimal exam. The bonus points awarded for the successful word quizzes (maximum 10) are added to the average score of the written tests.

The oral minimal exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral minimal results in failing the whole course. The score of the oral minimal exam is added to the average score of the mid-term and end-term tests (maximum 10 bonus points).

The minimal requirement for the mid-term and the end-term tests is 40 % each. If a student does not reach this score

he/she has to repeat the test. If both test scores reach 40 % the bonus points awarded for word quizzes (maximum 10) and the scores of the oral minimal exam (maximum 10) are added to the average score of the mid-term and end-term tests, resulting the final score.

Based on the final score the tests are graded according to the following table:

Final score	Grade
0 – 59	fail (1)
60-69	pass (2)
70-79	satisfactory (3)
80-89	good (4)
90-100	excellent (5)

If the final score is below 60 the student once can take an oral remedial exam covering the material of the whole semester.

Consultation classes
In each language course once a week students may attend a consultation class with one of the teachers of that subject in which they can ask their questions and ask for further explanations of the material covered in that week. These classes are optional for the students.

Website: Oral exam topics and vocabulary minimal lists are available from the website of the Department of Foreign Languages: ilekt.med.unideb.hu.

Department of Pathology

Subject: **PATHOLOGY**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: The general definition of pathology; adaptive reactions of tissues and cells

2nd week:
Lecture: Cell-death: apoptosis, necrosis, and autophagy

3rd week:
Lecture: Inflammation: general properties of inflammatory reactions

4th week:
Lecture: Acute and chronic inflammation: macro- and microscopic features

5th week:
Lecture: Tissue regeneration, reparative reactions; fibrosis and scar formation

6th week:
Lecture: Fluid and haemodynamic disorders. Haemorrhage, thrombosis

7th week:
Lecture: Anaemic (pale) and haemorrhagic (red) infarction; embolia

8th week:
Lecture: Immune pathology I

9th week:
Lecture: Immune pathology II

10th week:
Lecture: Pathology of neoplasia; molecular oncology

11th week:
Lecture: Benign and malignant tumors; macro- and microscopic features; metastasis

12th week:
Lecture: Genetic and environmental aspects of disease processes

13th week:
Lecture: Pathology of infectious diseases

14th week:
Lecture: Diseases of bones and joints

15th week:
Lecture: Specific forms of arthritides; pathology of skeletal muscle

Requirements

Prerequisites: Biochemistry, Physiology, Immunology

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.

Department of Physiotherapy

Subject: **APPLIED TRAINING METHODS**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: General purposes of movement therapy; definition of fitness, endurance and toughness
Practical: Definition of training, principles of training and elements of endurance and toughness

2nd week:
Lecture: Basics of exercise physiology (repetition)
Practical: Types of training, planning of training programme

3rd week:
Lecture: Age-dependent characteristics of the endurance
Practical: Physical abilities; possibilities for improvement

4th week:
Lecture: Effect of physical load on circulation
Practical: Endurance training, methods and criteria of strength endurance

5th week:
Lecture: Effect of physical load on respiration
Practical: Static and dynamic strength endurance

6th week:
Lecture: Energetic aspects of the muscle function
Practical: Speed endurance training, basic definitions and methods

7th week:
Lecture: Characteristics of the muscle function
Practical: Rules and methods for the improvement of flexibility

8th week:
Lecture: Types of the muscle contraction
Practical: Improvement of the skills and coordination

9th week:
Lecture: Effect of physical load on the movement system
Practical: Types and characteristics of the endurance training

10th week:
Lecture: Muscle fatigue
Practical: Endurance improving methods

11th week:
Lecture: Methods for improvement of strength and endurance
Practical: Training theories and their adaptation to rehabilitation

12th week:
Lecture: Features of the endurance training programmes
Practical: Repetition, practice

13th week:
Lecture: Planning criteria of trainings
Practical: Repetition, practice

14th week:
Lecture: Changes in physiological parameters on the effect of physical exercise in the trained and untrained persons
Practical: Practical examination

15th week:
Lecture: Summary, consultation
Practical: Practical examination

Requirements

Prerequisites: Anatomy I, Physiology

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 absences from the practices. If you have an acceptable reason for the absence you may be allowed to take part at the practical hours of another group.

Assessment: the results of the practical and theoretical examinations will be averaged as a five-graded term mark according to the scale: pass (2) for 60%-69%; satisfactory (3) for 70%-79%; good (4) for 80%-89%; excellent (5) for 90%-100%. The term mark may be improved once in the first 3 weeks of the examination period.

Department of Physiotherapy

Subject: **ELECTRO-, BALNEO-, HYDRO-, AND CLIMATOTHERAPY**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **30**
Practical: **30**

1st week:
Lecture: Definition, classification and history of physiotherapy. Physical and biological bases of electrotherapy
Practical: Technical conditions of physical therapy; security considerations

2nd week:
Lecture: Basic physical definitions (electric current, current source; conductors, isolators; types of current etc). Effects of electric current; electrotherapy with low frequency: instruments, electrode, dosage
Practical: Technical processing of physicotherapeutic interventions; low frequency devices

3rd week:
Lecture: Physicochemical and biological effects of Galvan currents, clinical application; indications and contra-indications
Practical: Components of the low frequency devices; types of electrodes; contact material; methods of application

4th week:
Lecture: Special Galvan treatments (Kowarschik, Bourgignon, Bergonier, Riesz methods)
Practical: Special Galvan treatments

5th week:
Lecture: Iontophoresis, mode of action, types and dosage of the iontophoresis, indications and contra-indications, Riesz methods
Practical: Iontophoretic treatments
Self Control Test

6th week:
Lecture: Lidocain iontophoresis, indications and contraindications; malpractice and side effects. Transcutaneous Electrical Nerve Stimulation (TENS)
Practical: Lidocain iontophoresis, indications and contraindications, TENS treatments

7th week:
Lecture: Bernard's diadynamic currents; middle frequency electrotherapy; symptomatic treatment with interference current
Practical: Demonstration and practice of diadynamic electrotherapy; demonstration of interference current method

8th week:
Lecture: High frequency electrotherapy (shortwave, decimeter wave and microwave therapies) and magneto therapy (devices, therapeutic principles, practical application)
Practical: Demonstration of the high frequency treatment; treatment of the patients with ultrasound and magnetic field

9th week:
Lecture: Phototherapy (laser, UV light and infrared therapy, polarized light therapy); ultrasonic therapy
Practical: infrared, laser and polarized light therapy; ultrasonic therapy, hydrotherapy unit of the Spa

10th week:
Lecture: Hydro-, and thermotherapy
Practical: Visit in the hydrotherapy unit of the SPA
Self Control Test

11th week:
Lecture: Balneotherapy, mudpacks, effects of medicinal waters
Practical: Visit in Spa

12th week:
Lecture: Weight bathing; carbondioxide bath therapy, hydro-massage
Practical: Visit in the hydrotherapy unit of the Spa

13th week:
Lecture: Selective stimulus current treatment
Practical: Selective stimulus current treatment: demonstration and practice

14th week:
Lecture: Climate therapy, cave therapy, inhalation
Practical: Inhalation: demonstration and practice

Requirements

Prerequisite: Biophysics

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. To have signature in the Lecture Book and to pass the practical exam are the conditions for the acquirement of the ESE mark.

Assessment: the results of the midterm tests and practical examination will be averaged as an offered five-graded ESE mark according to the scale: pass (2) for 50%-62%; satisfactory (3) for 63%-74%; good (4) for 75%-87%; excellent (5) for 88%-100%.

If you failed in the midterm examinations you are allowed to sit for the End of Semester Exam in the examination period. The topics cover all of the theoretical knowledge lectured during the semester.

Department of Physiotherapy

Subject: **GERONTOLOGY**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Basic terms of gerontology

2nd week:
Lecture: Gerontology in mirror of statistics I: Process of aging of individuals

3rd week:
Lecture: Gerontology in mirror of statistics II: Tendencies of mortality

4th week:
Lecture: Systemic approach of gerontology

5th week:
Lecture: Biogerontology: the basics

6th week:
Lecture: Biogerontology: aging theories

7th week:
Lecture: Biogerontology: experimental gerontology

8th week:
Lecture: Biogerontology: aging and diseases

9th week:
Lecture: Geriatrics: Physiological as well as pathological alterations due to aging I

10th week:
Lecture: Geriatrics: Physiological as well as pathological alterations due to aging II

11th week:
Lecture: Social gerontology: Gerontopsychology

12th week:
Lecture: Social gerontology: Aspects of the society regarding aging

13th week:
Lecture: Prevention and aging

14th week:
Lecture: Possibilities for the slowing down of the aging process

15th week:
Lecture: Repetition, discussion

Requirements

Prerequisite: Sociology

Attendance at lectures is highly recommende, since the topics in examination cover the lectured topics. Students are encouraged to prepare and present own presentations from the topics.

ESE will be carried out as a written exam. The final score will be evaluated on the basis of the written exam and the personal activity during the semester.

Department of Physiotherapy

Subject: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS I**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **45**

1st week:
Lecture: Short history of the internal medicine; case history; physical examinations; laboratory and other diagnostic methods; diagnosis; medical documentation

2nd week:
Lecture: Complaints and symptoms in the cardiovascular diseases; physical and instrumental examinations in the cardiovascular diseases; disorders of the cardiac valves; diseases of the endocardium and pericardium; cardiac asthma; cor pulmonale

3rd week:
Lecture: Systolic and diastolic dysfunctions; cardiac decompensation; cardiogenic shock; angina pectoris, myocardial infarct; emergency treatment of myocardial infarct; arterial and venous thrombosis; pulmonary embolism; disorders of the impulse generation and conduction in the heart; atrial fibrillation; ventricular fibrillation

4th week:
Lecture: Reasons, diagnosis and treatment of hypertension; emergency supply in hypertension crisis; congenital and acquired coagulopathies; thrombo-embolisms (arterial and venous)

5th week:
Lecture: Anaemias, polyglobulia polycythaemia; agranulocytosis; leukaemias; lymphomas; precancerous states; diagnostics and treatment in malignant diseases; pathologic leanness and obesity; deficiency diseases (hypo- and avitaminoses)

6th week:
Lecture: Gout; hyperlipidaemias; pathogenesis and complications of arteriosclerosis; immune deficient states; allergic diseases; physical and instrumental examinations in the autoimmune diseases; autoimmune diseases

7th week:
Lecture: Physical and laboratory examinations in the infectious diseases; viral and bacterial infections

8th week:
Lecture: Diseases of the oral cavity, the oesophagus and the stomach; intestinal diseases; parenchymal disorders in the liver; jaundices; hepatic inflammations; hepatic cirrhosis; abscess and tumours in the liver

9th week:
Lecture: Diseases of the gall bladder and hepatic ducts; gall stone; peritonitis; acute and chronic pancreatitis; pancreatic tumours; bacterial infections of the urogenital system; renal diseases with immunopathogenic origin; glomerulo-nephritises

10th week:
Lecture: Acute and chronic renal insufficiency; dialysis; diseases of the thyroid gland; hyper- and hypothyroidism; tumours in the thyroid gland

11th week:
Lecture: Diseases of the parathyroid gland; hyperparathyroidism; diseases of the adrenal medulla and cortex; pheochromocytoma; Addison disease. Physical and instrumental examinations in the respiratory diseases; infections of the upper airways; pneumonias; bronchitises, bronchial asthma; emphysema; respiratory insufficiency

12th week:
Lecture: Pulmonary tuberculosis; pulmonary tumours; pleural diseases; diabetes mellitus type 1 and type 2

13th week:
Lecture: Complications of diabetes mellitus; hyper- and hypoglycaemic coma; sudden black-out; acute chest pain; sudden cardiac death

14th week:
Lecture: Reasons, symptoms and treatment of the stroke; reasons, diagnostics and emergency supply of coma; acute gastrointestinal bleeding; emergency interventions in acute gastrointestinal haemorrhage

15th week:
Lecture: Consultation

Requirements

Prerequisites: Physiology, Introduction to Clinical Medicine

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. In the examination period ESE as an oral examination has to be taken.

Department of Physiotherapy

Subject: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS II**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **15**
Practical: **30**

1st week:
Lecture: Structure and function of the respiratory system (respiratory organs, respiratory muscles) – repetition
Practical: Examination of patients, process of examination

2nd week:
Lecture: Gas exchange in the lungs; regulation of breathing – repetition
Practical: Examination of patients, process of examination

3rd week:
Lecture: Classification of pulmonary diseases
Practical: Expectoration techniques; percussion and vibration of the chest; aerosol therapy, postural drainage; indications and contraindications

4th week:
Lecture: Restrictive pulmonary diseases I (pneumonia)
Practical: Active expectorant techniques (active periodic breathing, forced expiratory techniques, autogenic drainage)

5th week:
Lecture: Restrictive pulmonary diseases II (pleuritis)
Practical: Positive expiratory pressure techniques (flutter, PEP mask)

6th week:
Lecture: Restrictive pulmonary diseases III (pulmonary abscess, empyema)
Practical: Rules, effects and contra-indications of the manual treatment of the chest
Self Control Test

7th week:
Lecture: Obstructive diseases of the airways I (chronic bronchitis, emphysema)
Practical: Manual mobilization of the chest (demonstration)

8th week:
Lecture: Obstructive diseases of the airways II (bronchial asthma)
Practical: Manual mobilization of the chest (practice)

9th week:
Lecture: Mucoviscidosis (cystic fibrosis)
Practical: Methods for strengthening the respiratory muscles (breathing exercises, exercises against resistance, inspiratory muscle training)

10th week:
Lecture: Surgical interventions on the chest
Practical: Pre- and postoperative treatments of the patients

11th week:
Lecture: Respiratory insufficiency
Practical: Prevention and treatment of postoperative respiratory insufficiency with physiotherapeutic methods

12th week:
Lecture: Pulmonary manifestation of cardiovascular diseases
Practical: Training programme for patients with pulmonary diseases (principles)

13th week:
Lecture: Complex rehabilitation in COPD
Practical: Summary of the movement program in COPD

14th week:
Lecture: Repetition
Practical: Practice

15th week:
Lecture: Consultation
Practical: Practical examination

Requirements

A 15-hour clinical demonstration practice completes the 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 practical hours. Signature in the Lecture Book and passing the practical exam are the conditions for the end of semester examination.

The grade of ESE will be offered on the basis of the scores in the midterm theoretical examinations and the practical exam. You have chance to improve the mark during the examination period taking ESE.

Department of Physiotherapy

Subject: **KINESIOLOGY**
Year, Semester: 2nd year/2nd semester
Number of teaching hours: 0

Topics

1. Analysis (structure, stability and mobility) and examination of the pelvic motions in physiological and pathological states. Explain the types of displacement: translatory and rotatory motions
2. Analysis (structure, stability and mobility) and examination of the lumbar spine in physiological and pathological states. Explain the characteristics of the first class lever system
3. Analysis (structure, stability and mobility) and examination of the thoracic spine and chest in physiological and pathological states. Explain the characteristics of the second class lever system
4. Analysis (structure, stability and mobility) and examination of the cervical spine in physiological and pathological states. Explain the characteristics of the third class lever system
5. Analysis (structure, stability and mobility) and examination of the shoulder complex in physiological and pathological states. Describe the movements during the change in the length of the force arm of the lever
6. Analysis (structure, stability and mobility) and examination of the shoulder complex (scapulo-thoracic functional connection, sterno-clavicular and acromio-clavicular joints) in physiological and pathological states. Describe the movements during the change in the length of the resistance arm of the lever
7. Analysis (structure, stability and mobility) and examination of the shoulder complex (gleno-humeral joint) in physiological and pathological states – instability. Describe the movements during the change in the length of the effort arm of the lever
8. Analysis (structure, stability and mobility) and examination of the shoulder complex (gleno-humeral joint) in physiological and pathological states – muscle dysfunction. Describe the translatory and rotatory effects of the force components
9. Analysis (structure, stability and mobility) and examination of the elbow complex (humero-ulnar and humero-radial joints) in physiological and pathological states. Describe the synovial joints
10. Analysis (structure, stability and mobility) and examination of the elbow complex (superior radio-ulnar joint and radio-ulnar synostosis) in physiological and pathological states. Describe the open kinematic chain
11. Analysis (structure, stability and mobility) and examination of the wrist complex in physiological and pathological states. Describe the closed kinematic chain
12. Analysis (structure, stability and mobility) and examination of the ankle complex and arches of the foot in physiological and pathological states. Explain the arthro-kinematical rolling
13. Analysis (structure, stability and mobility) and examination of the subtalar and foot complex in physiological and pathological states. Explain the arthro-kinematical sliding
14. Analysis (structure, stability and mobility) and examination of the knee complex in physiological and pathological states-instability. Describe the convex-concave rule and give examples on the upper extremities
15. Analysis (structure, stability and mobility) and examination of the knee complex in physiological and pathological states – dysfunction of the menisci. Describe the convex-concave rule and give examples on the lower extremities
16. Analysis (structure, stability and mobility) and examination of the hip complex in physiological and pathological states-joint dysfunction. Describe the lumbar-pelvic-hip rhythm in a closed kinematic chain
17. Analysis (structure, stability and mobility) and examination of the hip complex in physiological and pathological states-muscle dysfunction. Describe the lumbar-pelvic-hip rhythm in an open kinematic chain
18. Analysis and examination of the physiological angles and their changed conditions. Describe the close- and loose-packed positions
19. Kinematical analysis of the locomotion, functions and importance of the foot. Regulation of locomotion. Describe the physiological and pathological end-feels
20. Analysis and examination of the locomotion. What covers the active and passive insufficiency?
21. Types of pathological gait, background, consequences and examinations. Describe the types of muscular activity.

Requirements

Pre-requisite for taking comprehensive exam is to absolve the Kinesiology I and II subjects.
It is recommended to take the examination at the end of the 4th semester, but the date should not be later than the end of the 6th semester. The components of the comprehensive exam are the written and oral examinations. To pass the written part is an obligatory condition to take the oral examination.

Department of Physiotherapy

Subject: **KINESIOLOGY PRACTICE**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: **80**

Topics

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

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.

Requirements:

Prerequisite: Kinesiology II

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 Certification of Clinical Practices. 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.

Department of Physiotherapy

Subject: **MOBILIZATION-MANUAL TECHNIQUES I**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **10**
Practical: **90**

1st week:
Practical: (1) Massage: history and development of the massage therapy; position of massage in the physiotherapeutic methodical tools; classification of massage methods; conditions of application; examination of patient; palpation of subcutaneous connective tissue, blood vessels, lymph nodes, muscles, tendons and insertions of tendons; theoretical basis, mode of action, application fields, indications and contraindications of Swedish massage. (2) Passive mobilization: goals, principles, rules of application. (3) Stretching: theoretical basis, definitions. (4) PNF I: definition and history of the proprioceptive neuromuscular facilitation (PNF)

2nd week:
Practical: (1) Massage: basic techniques in Swedish massage; special, complementary techniques; Swedish massage treatment of the back (2) Passive mobilization: passive mobilization of the neck (3) Stretching: demonstration of the stretching techniques; practice (4) PNF I: basic procedures of the PNF, examination of diagonal movements

3rd week:
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 in different body positions; Swedish massage treatment of the upper limb (2) Passive mobilization: passive mobilization of the lumbar and thoracic spine (3) Stretching: stretching of the contracture-predisposed muscles of the upper limb: upper part of the trapesius muscle, levator muscle of the scapula (4) PNF I: scapula patterns: anterior elevation, posterior depression, anterior depression, posterior elevation

4th week:
Practical: (1) Massage: Swedish massage treatment of the chest; expectoration of the bronchial secretion by percussation 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) Stretching: stretching techniques for latissimus dorsi and teres maior muscles (4) PNF I: pelvis patterns: anterior elevation, posterior depression, anterior depression, posterior elevation

5th week:
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) Stretching: stretching techniques for maior and minor pectoral muscles (4) PNF I: arm patterns; flexion-abduction-external rotation; extension-adduction-internal rotation

6th week:
Practical: (1) 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 Mackenzie zones; hyperalgetic dermatomes and spasms; painful myotomes (2) Passive mobilization: passive mobilization of the elbow (3) Stretching: stretching techniques for biceps brachii, brachioradial and brachial muscles (4) PNF I: arm patterns; flexion-abduction-external rotation with elbow flexion and extension; extension-adduction-internal rotation with elbow flexion and extension

7th week:
Practical: (1) Massage: the aim and application fields of the segment massage; preceding examinations of the patients; structure of the segment massage; duration, techniques (2) Passive mobilization: passive mobilization of the wrist and hand joints (3) Stretching: stretching of the triceps brachii, pronator teres and palmaris longus muscles (4) PNF I: arm patterns; flexion-adduction-external rotation; extension-abduction-internal rotation

8th 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) Stretching: repetition of the stretching methods applied on the upper extremities (4) PNF I: arm patterns; flexion-adduction-external rotation with elbow flexion and extension; extension-abduction-internal rotation with elbow flexion and extension

9th week:
Practical: (1) Massage: segment massage treatment of the stomach, the liver and gallbladder (2) Passive mobilization: passive mobilization of the knee (3) Stretching: stretching of the contracture-predisposed muscles of the lower limb: iliopsoas, rectus femoris muscles and ishiocrural group (4) PNF I: leg patterns; flexion-abduction-internal rotation; extension-adduction-

external rotation

10th week:
Practical: (1) Massage: morphological and physiological bases of the connective tissue massage; examination of the connective tissue zones; techniques of the connective tissue massage; analysis of the right and false techniques; reflex displacement caused by false technique; structure, dosage, indication and contraindication of connective tissue massage (2) Passive mobilization: passive mobilization of the ankle and toe joints (3) Stretching: stretching techniques for the adductor group of muscles and tensor fasciae latae muscle (4) PNF I: leg patterns; flexion-abduction-internal rotation with knee flexion and extension; extension-adduction-external rotation with knee flexion and extension

11th week:
Practical: (1) Massage: practice of the pelvis techniques; treatment of the trunk (2) Passive mobilization: positioning techniques (3) Stretching: stretching techniques for the triceps surae and adductor hallucis muscles (4) PNF I: leg patterns; flexion-adduction-external rotation; extension-abduction-internal rotation

12th 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) Stretching: summary, practice (4) PNF I: leg patterns; flexion-adduction-external rotation with knee flexion and extension; extension-abduction-internal rotation with knee flexion and extension

13th week:
Practical: (1) Massage: treatment of the abdomen and gluteal region; patterns for the lower extremities; repetition (2) Passive mobilization: repetition, practice (3) Stretching: repetition, practice (4) PNF I: repetition, practice

14th week:
Practical: (1) Massage: practice exam (2) Passive mobilization: practice exam (3) Stretching: practice exam (4) PNF I: practice exam

15th week:
Practical: (1) Massage: practice exam (2) Passive mobilization: practice exam (3) Stretching: practice exam (4) PNF I: practice exam

Requirements

Prerequisite: Anatomy 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. 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.

Department of Physiotherapy

Subject: **RESPIRATORY REHABILITATION PRACTICE**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: **80**

Topics

Investigation of patient; instrumental diagnostic procedures; monitoring; evaluation and discussion of findings; practice of expectorant techniques; movement therapy in the pre- and postoperative physiotherapy; cardio-respiratory reactions to physical exercise; training protocols applied in the cardio-respiratory diseases

Requirements

Educational objective
The aim of the practice is to deepen the theoretical knowledge in clinical circumstances, to get experience in the investigation and physiotherapeutic treatment of patient.

Requirements:

Prerequisite: Internal Medicine for Physiotherapists II

To take part in the clinical practice in internal medicine 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.

The students are required to know the examination of patients; to observe the respiration, to process the expectoration; to evaluate the cardiorespiratory reactions to physical exercise, and to perform the movement training programme under the control of supervisor.

CHAPTER 9
ACADEMIC PROGRAM FOR THE 3RD YEAR

Department of Foreign Languages

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE II**
Year, Semester: 3rd year/1st semester**,** 3rd year/1st semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Pretest.

2nd week:
Practical: Revision: Verb conjugation overview.

3rd week:
Practical: Body parts and movements of the upper extremitites

4th week:
Practical: Body parts and movements of the lower extremities

5th week:
Practical: History taking – Personal data

6th week:
Practical: Taking social history

7th week:
Practical: Revision.

8th week:
Practical: Mid-term test.

9th week:
Practical: Complaints, pain

10th week:
Practical: Diseases

11th week:
Practical: Giving advice

12th week:
Practical: Patient/client-related instructions

13th week:
Practical: Revision

14th week:
Practical: End-term test

15th week:
Practical: Assessment, evaluation.

Requirements

Attendance
The attendance is compulsory for the language classes. The maximum ratio of allowable absences is 10 % which is a maximum of 2 out of the weekly classes. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the signature is refused and the student has to repeat the course.
Assessment: *Signature.*

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

Students are not allowed to take Professional Hungarian II. course before entering 3rd year.

Testing, evaluation
In Professional Hungarian Language course, students have to sit for a mid-term and an end-term written language tests and 2 short minimal requirement oral exams.

Further minimal requirement is the knowledge of 200 words in each semester announced on the first week. Every week there is a (written or oral) word quiz from 20 words in the first 5-10 minutes of the class. In each word quiz students can be given 1 point if they know at least 80 % of the words asked and they have to collect 6 points at least to pass vocabulary minimal requirements. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam from all the 200 words along with the oral minimal exam. The bonus points awarded for the successful word quizzes (maximum 10) are added to the average score of the written tests.

The oral minimal exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral minimal results in failing the whole course. The score of the oral minimal exam is added to the average score of the mid-term and end-term tests (maximum 10 bonus points).

The minimal requirement for the mid-term and the end-term tests is 40 % each. If a student does not reach this score he/she has to repeat the test. If both test scores reach 40 % the bonus points awarded for word quizzes (maximum 10) and the scores of the oral minimal exam (maximum 10) are added to the average score of the mid-term and end-term tests, resulting the final score.
Based on the final score the tests are graded according to the following table:

Final score	Grade
0 – 59	fail (1)
60-69	pass (2)
70-79	satisfactory (3)
80-89	good (4)
90-100	excellent (5)

If the final score is below 60 the student once can take an oral remedial exam covering the material of the whole semester.

Consultation classes
In each language course once a week students may attend a consultation class with one of the teachers of that subject in which they can ask their questions and ask for further explanations of the material covered in that week. These classes are optional for the students.

Website: Oral exam topics and vocabulary minimal lists are available from the website of the Department of Foreign Languages: ilekt.med.unideb.hu.

Department of Health Management and Quality Assurance

Subject: **HEALTH CARE LAW**
Year, Semester: 3rd year/1st semester
Number of teaching hours:

1st week:
Lecture: Systems of law, sources of law

2nd week:
Lecture: The legal system

3rd week:
Lecture: Human rights, the right to health

4th week:
Lecture: Health policy principles, health care legislation and administration

5th week:
Lecture: Health insurance, health care finance

6th week:
Lecture: Managed care

7th week:
Lecture: Physician-patient relationship, patients' rights

8th week:
Lecture: Physicians' rights and obligations

9th week:
Lecture: Licensing and authorization

10th week:
Lecture: Management of medical information

11th week:
Lecture: Medical liability

12th week:
Lecture: Public health law and services

13th week:
Lecture: Bioethics

14th week:
Lecture: EU health strategies

15th week:
Lecture: Summary, consultation

Requirements

Prerequisite: none
Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. You have to take ESE during the examination period.

Department of Pharmacology and Pharmacotherapy

Subject: **PHARMACOLOGY**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Introduction to general pharmacology (molecular aspects, excitation, contraction and secretion)

2nd week:
Lecture: Introduction to general pharmacology: pharmacokinetics and pharmacodynamics

3rd week:
Lecture: Chemical mediators and the autonomic nervous system. Cholinergic transmission. Effects of drugs on cholinergic transmission

4th week:
Lecture: Noradrenergic transmission and other peripheral mediators

5th week:
Lecture: The heart. Drugs that affect cardiac function

6th week:
Lecture: The vascular system. Atherosclerosis and lipoprotein metabolism

7th week:
Lecture: Respiratory pharmacology. The kidney

8th week:
Lecture: Drugs used in the treatment of infections

9th week:
Lecture: Pharmacology of gastrointestinal system. Blood sugar and diabetes mellitus

10th week:
Lecture: Endocrine drugs

11th week:
Lecture: Pharmacology of CNS drugs (transmitters and modulators, neurodegenerative disorders, general anaesthetic agents, anxiolytic and hypnotic drugs)

12th week:
Lecture: Pharmacology of CNS Drugs (antipsychotic drugs, drugs used in affective disorders, antiepileptic drugs, CNS stimulants and psychotomimetic drugs)

13th week:
Lecture: Analgesic drugs, local anaesthetics, anti-inflammatory drugs

14th week:
Lecture: Muscle relaxants

15th week:
Lecture: Consultation

Requirements

Prerequisites: Biochemistry, Physiology

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

Department of Physiotherapy

Subject: **DIETETICS**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: Introduction to dietetic nutrition; basic definitions; energy and food requirements; nutrients (proteins, fats, carbohydrates; vitamins, minerals); characteristics for the nutrition of the Hungarian population; principles of the healthy nutrition; food pyramid (3 hours)

2nd week:
Lecture: Food product knowledge; cereals; vegetables, fruits, milk products; meats, fats, oils, sweeties, drinks – their importance in the nutrition physiology; undernourishment and its consequences (3 hours)

3rd week:
Lecture: Metabolic syndrome, its dietetic treatment; diet in the diseases of the movement system; vegetarian diets (3 hours)

4th week:
Lecture: Diet in pregnancy and lactation (3 hours)

5th week:
Lecture: Consultation (2 hours)
Self Control Test

6th week:
Practical: Calculation of the energy and nutrient content of foods (2 hours)

7th week:
Practical: Kitchen technologies for health prevention (2 hours)

8th week:
Practical: Construction and evaluation of a health protective diet (2 hours)

9th week:
Practical: Possibilities of roboration, practical application (2 hours)

10th week:
Practical: Diet in obesity and diabetes mellitus (2 hours)

11th week:
Practical: Dietetic treatment of osteoporosis (2 hours)

12th week:
Practical: Patient health education (2 hours)

13th week:
Practical: Midterm practice examination
Self Control Test

Requirements

Prerequisites: Physiology, Internal Medicine for Physiotherapists I

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance at practical hours is compulsory. The grade of ESE will be offered on the basis of midterm examinations. You have chance to improve the mark during the examination period taking ESE.

Department of Physiotherapy

Subject: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS III**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **15**
Seminar: **20**
Practical: **10**

1st week:
Lecture: Blood vessels, lymphatic circulation (repetition)
Seminar: Examination of patients suffering from peripheral circulatory disorders

2nd week:
Lecture: Physiotherapeutic methods in angiology
Seminar: Functional examinations of the arteries and veins, special tests

3rd week:
Lecture: Acute and chronic diseases of the arteries
Practical: Physiotherapeutic treatment in arterial diseases (Fontaine stage III and IV)

4th week:
Lecture: Role of the movement therapy in the treatment of arterial diseases
Practical: Physiotherapeutic treatment of arterial diseases (Fontaine stage I and II)

5th week:
Lecture: Diseases of the venous system
Seminar: Physiotherapy in the acute venous diseases

6th week:
Lecture: Role of the movement therapy in the treatment of venous diseases
Practical: Chronic diseases of the veins, special exercises directed to veins

7th week:
Lecture: Causes and symptoms of the lymphedema, components of the complex treatment
Seminar: Physiotherapy of lymphedema

8th week:
Lecture: Vascular aspects of the tunnel syndromes in the shoulder region, process of the examinations
Seminar: Treatment of the tunnel syndromes by physiotherapeutic methods
Self Control Test

9th week:
Lecture: Cardiological rehabilitation; aims and tasks for physiotherapy in the acute, convalescent and postconvalescent stages
Seminar: Task and role of physiotherapist in cardiological rehabilitation

10th week:
Lecture: Cardiovascular rehabilitation: movement therapy in the acute stage
Seminar: Acute myocardial infarct. Physiotherapy in the postinfarct stage (early mobilization)

11th week:
Lecture: Cardiovascular rehabilitation: risk stratification, determination of the training pulse rate, absolute and relative contraindications of the training
Practical: Training after acute myocardial infarct in the early and late convalescent stages

12th week:
Lecture: Principles of pre- and postoperative treatment after chest (cardiac) surgical interventions
Seminar: Pre- and postoperative movement therapy for heart-operated patients

13th week:
Lecture: Significance of the movement therapy in the treatment of cardiovascular complications in hypertension, diabetes mellitus, and obesity
Seminar: Physiotherapy for patients suffering from hypertension

14th week:
Lecture: Summary, repetition
Seminar: Physiotherapy for patients suffering from diabetes mellitus and obesity

15th week:
Practical: Practical examination
Self Control Test

Requirements

15-hour clinical demonstration completes the practices.

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at seminars and practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences from the seminar and practical hours. Signature in the Lecture Book and passing the practical exam are the conditions for the end of semester examination. The grade of ESE will be offered on the basis of the scores in the midterm theoretical examinations and the practical exam. You have chance to improve the mark during the examination period taking ESE.

Department of Physiotherapy

Subject: **MOBILIZATION-MANUAL TECHNIQUES II**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Practical: **90**

1st 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

2nd 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

3rd 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

4th 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- and scapulo-thoracic joints. Test and therapy (3) PNF II: Combined patterns for the trunk

5th 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

6th 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

7th 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

8th 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

9th week:
Practical: (1) Soft tissue mobilization: Definition and position of deep massage technique in the mobilization techniques; indications and contraindications (2) Joint mobilization: The hip complex: traction, sliding and mobilization. Test and therapy (3) PNF II: Mat activities: gait training

10th 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

11th 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

12th week:
Practical: (1) Soft tissue mobilization: Techniques on the upper extremities (2) Joint mobilization: The ankle and foot complex: traction and mobilization of the ankle, subtalar and transverse tarsal joints (3) PNF II: PNF in the practice

13th 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

14th week:
Practical: (1) Soft tissue mobilization: Practice examination (2) Joint mobilization: Consultation (3) PNF II: Practice examination

15th week:
Practical: (1) Soft tissue mobilization: Practice examination (2) Joint mobilization: Practice examination (3) PNF II: 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.

Department of Physiotherapy

Subject: **ORTHOPAEDICS FOR PHYSIOTHERAPISTS I**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: History of orthopaedics; connection to the traumatology and rheumatology; physical examination and treatment methods in the orthopaedics; surgery interventions on the bones and soft tissues

2nd week:
Lecture: Incidence of congenital hip dysplasia and dislocation (luxation); pathological disorders; screening methods in the early stages of the life: physical methods and sonography; conventional and surgical treatments

3rd week:
Lecture: Incidence of Perthes disease; pathomechanism; stages in progress; symptoms and treatment

4th week:
Lecture: Degenerative disorders of the joints; pathomechanism, symptoms, development and types of coxarthrosis; conventional and surgical treatments

5th week:
Lecture: Congenital dislocation of the knee joint, habitual and recurrent dislocation of the patella, congenital axis deformations. The significance of the cruciate and collateral ligaments, its injuries, arthroscopic and other therapeutic options

6th week:
Lecture: Development, type, pathology and symptoms of knee arthritis; conservative and surgical treatments. Prosthetic replacement of the knee

7th week:
Lecture: Diseases of the cervical spine and upper limbs. Degenerative disorders and habitual dislocation of the shoulder joint. Congenital and other orthopaedic deformities in the elbow and hands, and treatment

8th week:
Lecture: The anatomy of the foot. Diseases of the leg: flatfoot, bunion, hammer toe. Congenital deformities: clubfoot, vertical talus. The incidence of club foot its symptoms, conservative and surgical treatments

9th week:
Lecture: Physiologic curvatures and functional anatomy of the spine. Types of scoliosis, examination, conservative and surgical treatment

10th week:
Lecture: Scheuermann's disease. The pathology, signs, conservative and surgical treatment of sciatica. Degenerative spine deformities, spondylosis, lumbar pain

11th week:
Lecture: Purulent arthritis of the joints. Types of acute and chronic osteomyelitis, its symptoms and therapy

12th week:
Lecture: Primary and metastatic tumours in the bones, tumour-like disorders; symptoms and therapy

13th week:
Lecture: Orthopaedic perspective of rheumatologic diseases

14th week:
Lecture: Development, signs, diagnostic tools and orthopaedic treatment of osteoporosis; neuro-orthopaedic disorders; symptoms and treatment of the tunnel syndromes

15th week:
Lecture: Consultation

Requirements

Prerequisites: Biomechanics, Kinesiology II, Mobilization-Manual Techniques I

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

Department of Physiotherapy

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS I**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **45**

1st week:
Lecture: Introduction to rheumatology: classification of diseases; social and economic relations of the rheumatology; history taking and physical examinations

2nd week:
Lecture: Laboratory diagnostic procedures and imaging techniques in rheumatologic diseases

3rd week:
Lecture: Rheumatoid arthritis

4th week:
Lecture: Special forms of the rheumatoid arthritis; chronic juvenile arthritis, Felty syndrome, Caplan syndrome, pre-rheumatoid states

5th week:
Lecture: Spondyloarthropathies: ankylosing spondylitis, psoriatic arthritis

6th week:
Lecture: Introduction to immuno-pathology and autoimmunity

7th week:
Lecture: Crystal arthropathies

8th week:
Lecture: Infectious and reactive arthritides

9th week:
Lecture: Early arthritis: screening and differential diagnosis of arthritides, general considerations of treatment

10th week:
Lecture: Osteoarthritis, spondylosis, low back pain

11th week:
Lecture: Soft tissue rheumatism, regional pain syndromes, compression syndromes

12th week:
Lecture: Metabolic bone diseases, osteoporosis

13th week:
Lecture: Pharmacotherapy: analgesics and anti-inflammatory drugs

14th week:
Lecture: Pharmacotherapy: immuno-suppression, corticosteroids and DMARDs, biological therapy

15th week:
Lecture: Consultation

Requirements

Prerequisites: Introduction to Clinical Medicine, Kinesiology II, Mobilization-Manual Techniques I

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

Department of Physiotherapy

Subject: **TRAUMATOLOGY AND INTENSIVE THERAPY FOR PHYSIOTHERAPISTS I**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **45**

1st week:
Lecture: Position of the traumatology in the medical sciences; epidemiology, economic significance; classification of injuries; closed and open mechanical injuries; process of wound healing; different types of wounds and the methods of their management; closed and open injuries of soft tissues; contusion, cutaneous necrosis caused by compression; subcutaneous haematoma; covered tendon and muscle ruptures; joint strains and dislocations; principles of the plastic surgical interventions; skin defect, skin grafting methods; bone transplantation

2nd week:
Lecture: Process of fracture healing (biology, biomechanics); formation and identification of fractures; classification of closed and open fractures; principles of the conservative treatment of fractures; indications of osteosynthesis; advantages and disadvantages of surgical interventions; biological osteosynthesis

3rd week:
Lecture: Multiplied and combined injuries; tactics of boarding the severely wounded patients; rescue, first aid and transport; principles of clinical attendance of severely wounded patients; traumatic haemorhhagic shock; shock therapy; scoring systems to evaluate the state of the patient

4th week:
Lecture: Types of bleeding, temporary haemostasis; treatment of covered and open blood vessel injuries; nerve injuries; morphology and physiology of nerve regeneration; principles of the treatment of peripheral nerve injuries; brachial plexus injuries; treatment of nerve damages (tunnel syndromes); special injuries of growing bones, principles of the treatment; frequent combinations of injuries and special injuries in childhood, early and late complications

5th week:
Lecture: Cranio-cerebral injuries; fractures of the skull basis and calvaria; recognition and treatment of space occupying haemorrhages; maxillo-facial injuries; classification of spinal injuries, diagnosis; vertebral fractures with and without injury of the nervous system; conservative and surgical treatments; physiotherapy of the spine injured patients, postoperative treatment and rehabilitation

6th week:
Lecture: Injuries of the chest wall; rib fractures; penetrating injury of the chest wall; pneumothorax, haemothorax; lung contusion; open injury of the lungs; injuries of the heart and pericardium; cardiac tamponade; chest drain, thoracotomy; covered and open injuries of the abdominal cavity; diagnostics and treatment of the injuries arisen in the parenchymal and cavernous organs; diaphragm rupture; thoraco-abdominal injuries; injuries of the retroperitoneal organs; urogenital injuries

7th week:
Lecture: Fractures of the elbow and the forearm; supracondylar fractures; fractures of the distal end of the humerus; stable and instable dislocations of the elbow; fracture of the radial head and neck; fracture of the olecranon; fractures of diaphyis in the forearm; Monteggia and Galeazzi fracture; soft tissue injuries in the shoulder girdle; acromioclavicular dislocation ; dislocation of the shoulder joint; fractures of the proximal end of the clavicula, the scapula and the arm; injuries of the rotator cuff; adhaesive capsulitis; chronic shoulder instability; diaphysis fracture of the humerus

8th week:
Lecture: Fractures of the distal forearm; fractura radii in loco typico; distal fractures of the radius; fracture of the os scaphoideum; perilunar dislocation; fractures of the metacarpal bones and phalanges; follow-up care of the hand injured patients; principles of the hand surgery; forms of the tendon and nerve injuries; primary tendon suture and secondary substitution; carpal instability; infectious complications of hand injuries; revascularization and replantation

9th week:
Lecture: Pathomechanism and classification of the pelvic fractures; diagnostic procedures; conservative and surgical treatments; fractures of the acetabulum; hip dislocations; hip prosthesis

10th week:
Lecture: Femur neck fractures; features of the fractures in the elderly age; classification by Garden; methods of treatment; principles and possibilities of prosthetics; pertrochanteric and subtrochanteric fractures; diagnosis and surgical treatment of the fractures; fractures of the distal end of the femur; characteristics of the fractures penetrating the joint; fracture of patella; splitting of the quadriceps tendon

11th week:
Lecture: Covered and open fractures of the femur and crural bones; intramedullary fixation methods; lamellar osteosynthesis; fixateur externe; classification, diagnosis and treatment of the tibial condyle fractures

12th week:
Lecture: Biomechanics of the knee joint; pathomechanism of the knee injuries; meniscus injuries; ligament injuries; haemarthros; osteochondritis dissecans; role of the arthroscopy in the diagnostics and surgical interventions

13th week:
Lecture: Pilon fractures of tibia; ligament injuries of the external ankle; classification, diagnosis and treatment of the ankle fractures; fractures of calcaneus and talus; subtalar dislocation; fractures of the tarsal and metatarsal bones

14th week:
Lecture: Recognition and treatment of the posttraumatic states; compartment syndrome; immobilization harm; fracture disease; Sudeck dystrophy; prolonged callus formation; false joint; posttraumatic arthrosis; wound infections; purulent arthritis; osteitis, osteomyelitis; gas gangrene; early diagnosis and treatment of infections

15th week:
Lecture: Consultation

Requirements

Requirements: Prerequisites: Anatomy II; Kinesiology II, Mobilization-Manual Techniques I

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

Department of Preventive Medicine

Subject: **PREVENTIVE MEDICINE AND PUBLIC HEALTH I**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **30**
Seminar: **30**

1st week:
Lecture: The history of public health and preventive medicine. Scope and methods of public health
Seminar: Challenges of public health in the 21st century

2nd week:
Lecture: Introduction to human ecology. The general effect of environmental exposures
Seminar: Organization of public health services

3rd week:
Lecture: Air pollution and water pollution. Heavy metals in the human environment
Seminar: Water quality control laboratory (visit)

4th week:
Lecture: Toxicology of persistent organic pollutants, pesticides and organic solvents. Health hazards of ionizing radiation and radioactive substance
Seminar: Environmental radiation controlling laboratory (visit)

5th week:
Lecture: Health effects of climate change. Bioterrorism and possible tools of prevention
Seminar: Chemical safety

6th week:
Lecture: Scope of occupational health. Introduction to occupational toxicology
Seminar: Occupational diseases

7th week:
Lecture: Public health nutrition, foodborne diseases.Nutritional deficiency diseases
Seminar: Bacteriological and mycological examination of water and food (laboratory practice)

8th week:
Lecture: Overweight and obesity. Diet related diseases
Seminar: The role of diet in the pathogenesis of cardiovascular diseases and malignant neoplasm

9th week:
Lecture: The history, definition and scope of epidemiology. Epidemiological study design
Seminar: Biostatistical analyses I

10th week:
Lecture: Statistical methods used in the analysis of epidemiological studies. Analyses based on aggregate statistics
Seminar: Biostatistical analyses II

11th week:
Lecture: Frequency measures in epidemiology. Association measures in epidemiology
Seminar: Introduction to quantitative health sciences, searching for, interpreting and using scientific literature I

12th week:
Lecture: Types of etiological studies. Validity of etiological studies, causal inference
Seminar: Introduction to quantitative health sciences, searching for, interpreting and using scientific literature II

13th week:
Lecture: Interventional studies. Clinical trials
Seminar: Using epidemiological measures in practice

14th week:
Lecture: Monitoring morbidity of communicable diseases. Monitoring morbidity of non-communicable diseases
Seminar: Morbidity registries

15th week:
Lecture: The concept and methods of health monitoring. Health observatories
Seminar: Health observatories in Europe

Requirements

Prerequisites: Basic Microbiology, Internal Medicine for Physiotherapists I

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 practices or seminars in a semester even if he/she has an acceptable excuse. The absences at seminars should be made up with another group only in the same week (maximum 3 times during the semester). At the end of the first semester students are required to take a written test which will cover the topics of all lectures and seminars of the first semester.

Department of Foreign Languages

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE III**
Year, Semester: 3rd year/2nd semester**,** 3rd year/2nd semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Pretest

2nd week:
Practical: The role of physical therapists

3rd week:
Practical: Communictaion with colleagues and patients

4th week:
Practical: Physical examination and assessment

5th week:
Practical: Functional diagnosis, documentation

6th week:
Practical: Application of physical therapy devices and equipment

7th week:
Practical: Revision.

8th week:
Practical: Mid-term test.

9th week:
Practical: Physical therapy for musculoskeletal conditions.

10th week:
Practical: Physical therapy for neuromuscular conditions

11th week:
Practical: Physical therapy in cardiovascular and pulmonary conditions

12th week:
Practical: Physical therapy for pediatric conditions and for older adults

13th week:
Practical: Revision

14th week:
Practical: End-term test

15th week:
Practical: Assessment, evaluation

Requirements

Prerequisite: Hungarian Language III

Attendance
The attendance is compulsory for the language classes. The maximum ratio of allowable absences is 10 % which is a maximum of 2 out of the weekly classes. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the signature is refused and the student has to repeat the course.
Assessment: *Signature.*

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

Students are not allowed to take Professional Hungarian II. course before entering 3rd year.

Testing, evaluation
In Professional Hungarian Language course, students have to sit for a mid-term and an end-term written language tests and 2 short minimal requirement oral exams.

Further minimal requirement is the knowledge of 200 words in each semester announced on the first week. Every week there is a (written or oral) word quiz from 20 words in the first 5-10 minutes of the class. In each word quiz students can be given 1 point if they know at least 80 % of the words asked and they have to collect 6 points at least to pass vocabulary minimal requirements. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam from all the 200 words along with the oral minimal exam. The bonus points awarded for the successful word quizzes (maximum 10) are added to the average score of the written tests.

The oral minimal exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral minimal results in failing the whole course. The score of the oral minimal exam is added to the average score of the mid-term and end-term tests (maximum 10 bonus points).

The minimal requirement for the mid-term and the end-term tests is 40 % each. If a student does not reach this score he/she has to repeat the test. If both test scores reach 40 % the bonus points awarded for word quizzes (maximum 10) and the scores of the oral minimal exam (maximum 10) are added to the average score of the mid-term and end-term tests, resulting the final score.

Based on the final score the tests are graded according to the following table:

Final score	Grade
0 – 59	fail (1)
60-69	pass (2)
70-79	satisfactory (3)
80-89	good (4)
90-100	excellent (5)

If the final score is below 60 the student once can take an oral remedial exam covering the material of the whole semester.

Consultation classes
In each language course once a week students may attend a consultation class with one of the teachers of that subject in which they can ask their questions and ask for further explanations of the material covered in that week. These classes are optional for the students.

Website: Oral exam topics and vocabulary minimal lists are available from the website of the Department of Foreign Languages: ilekt.med.unideb.hu.

Department of Physiotherapy

Subject: **INFANT CARE AND PAEDIATRICS FOR PHYSIOTHERAPISTS I**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **30**
Practical: **30**

1st week:
Lecture: (C) Introduction to paediatrics. (PT) Embryonic development of the nervous system
Practical: Adapted physical education; terrestrial sensory training for nursery school children

2nd week:
Lecture: (C) The foetus and the neonate; perinatal events in the healthy neonate; care of the new-born baby, nutrition, development, growth and care of the infants; natural and artificial feeding. (PT) Features of the childhood
Practical: Adapted physical education; treatment of the movement system disorders and internal medicine diseases

3rd week:
Lecture: (C) Psychomotor development and mental retardation; diseases of premature infants (bronchopulmonary dysplasia, BPD and retinopatia of prematurity, ROP). (PT) Normal psychomotor development, healthy development of the movement. (PT)
Practical: Conductive pedagogy

4th week:
Lecture: (C) Diseases of the nervous system in the neonate-, infant- and childhood; perinatal injuries; infantile cerebral palsy (CP). (PT) Appearance of CP; pathologic movement development
Practical: DSGM manual technique – demonstration

5th week:
Lecture: (C) Inflammatory diseases of the nervous system (meningitis, encephalitis and their residual symptoms. (PT) Complex rehabilitation of CP
Practical: Katona method for early neurotherapy – demonstration

6th week:
Lecture: (C) Diseases of the bones, joints and muscles. (PT) Further therapeutic tools for CP treatment (drug treatment, ortheses, surgical interventions, and complementary developments)
Practical: Bobath method – demonstration

7th week:
Lecture: (C) Congenital heart defects, postoperative state. (PT) Complex rehabilitation of the congenital heart defects
Practical: Movement therapy of the neuromuscular diseases

8th week:
Lecture: (C) Diseases of the respiratory system; bronchial asthma. (PT) Complex rehabilitation of the respiratory disorders
Practical: Coordination and sensory training for nursing school and elementary school children – demonstration

9th week:
Lecture: (C) Genetic harms; congenital disorders. (PT) Complex rehabilitation of the muscular diseases (muscular dystrophies, hereditary sensory and motor neuropathies)
Practical: Electrotherapy in the infant- and childhood

10th week:
Lecture: (C) Mucoviscidosis. (PT) Complex rehabilitation of myelo-meningokele
Practical: Basal stimulation

11th week:
Lecture: (C) Haemophilia; bone tumours. (PT) Rehabilitation in the diseases affecting the joints (amelia, trauma, juvenile rheumatoid arthritis)
Practical: Orthotics-prosthetics in childhood

12th week:
Lecture: (C) Diabetes mellitus. Obesity. (PT) Rehabilitation of peripheral nerve injuries
Practical: Sensory integration therapy. Hydrotherapy

13th week:
Lecture: (C) Renal diseases. (PT) Complex rehabilitation of feeding disorders
Practical: Orofacial traning – therapy of feeding disorders

14th week:
Lecture: (C) Summary. (PT) Improvement of the movement for children with distinct mental developmental rate
Practical: Improvement of the movement for children with distinct mental developmental rate

15th week:
Lecture: (C) Consultation. (PT) Consultation
Practical: End-term assessment

Requirements

Prerequisites: Kinesiology II, 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 6-hour absences from the practical hours.

The grade of ESE will be constructed on the basis of the scores in the endterm theoretical examination and the midterm practical activity.

Department of Physiotherapy

Subject: **INTERNAL MEDICINE PRACTICE I**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: **80**

Topics

Investigation of patient; instrumental diagnostic procedures; monitoring; evaluation and discussion of findings; movement therapy in the angiology, pre- and postoperative physiotherapy; cardio-respiratory reactions to physical exercise; training protocols applied in the cardio-respiratory diseases

Requirements

Educational objective:

The aim of the practice is to deepen the theoretical knowledge in clinical circumstances, to get experience in the investigation and physiotherapeutic treatment of patient.

Requirements:

Prerequisite: Internal Medicine for Physiotherapists III

To take part in the clinical practice in internal medicine 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.

The students are required to know the examination of patients; to observe the circulation, to measure the cardiorespiratory parameters (pulse rate, blood pressure); to evaluate the ECG records and basic laboratory findings; to evaluate the cardiorespiratory reactions to physical exercise, and to perform the movement training programme under the control of supervisor.

Department of Physiotherapy

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS I**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **45**
Practical: **30**

1st week:
Lecture: (C) Introduction to neurology; morphological and functional bases; taking medical history. (PT) Characteristics of the normal movements
Practical: Characteristics of the movement therapy in neurology; possibilities for the improvement of the voluntary and automatic movements

2nd week:
Lecture: (C) Neurological examinations. (PT)Reasons of the impaired movement
Practical: Neurological examinations; demonstration and practice

3rd week:
Lecture: (C) Cerebrovascular diseases. (PT) Central paresis and paralysis; stroke in the adult- and childhood; features, symptomes, complications
Practical: Improvement of balance, basic and complex exercises, proprioceptive training

4th week:
Lecture: (C) Laesions of the motor system; types of the paralyses/pareses; characteristics and physiotherapy of the spastic paresis. (PT) Poststroke movement therapy, rehabilitation
Practical: Demonstration and practice of the facilitation techniques; improvement of the voluntary movements by coordination exercises

5th week:
Lecture: (C) Dysfunction of the sensory pathways; peripheral paralysis, treatment. (PT) Rehabilitation of the spine-injured patients
Practical: Individual demonstration of the facilitaton techniques, some coordination and balance improving exercises

6th week:
Lecture: (C) Reflex abnormalities; disorders of the coordination; characteristics, differential diagnostics and treatment of the central and peripheral facial pareses. (PT) Types of ataxia, principles of their movement therapy
Practical: Physiotherapy of the limb and truncal ataxias

7th week:
Lecture: (C) Cranial nerve symptoms; spinal cord injuries; therapeutic principles of the natal upper arm paralysis. (PT) Central and peripheral cranial nerve disorders; physiotherapy of central and peripheral dizzinesses
Practical: Physiotherapy of central and peripheral facial paresis; demonstration and practice of the vestibular training

8th week:
Lecture: (C) Epilepsia; lobe symptoms; disorders of the extrapyramidal system and the cerebellum; physiotherapy of the hyperkinetic syndromes. (PT) Extrapyramidal dysfunction, hyperkineses
Practical: Movement therapy of hyperkinesis. use of gymnastic equipments in order to facilitate or make more difficult the exercises

9th week:
Lecture: (C) Parkinson's disease, degenerative syndromes. (PT) Examination and complex physiotherapy of the patient suffering from Parkinson's disease
Practical: Individual and group training for patients with Parkinson's disease; demonstration and practice

10th week:
Lecture: (C) Multiple sclerosis; inflammatory diseases of the central nervous system; mixed type paralyses; examination of the patient with multiple sclerosis; therapy. (PT) Principles of the movement therapy of the multiple sclerosis and myasthenia gravis
Practical: Complex physiotherapy of the patients with multiple sclerosis; movement therapy of the patients with myasthenia gravis

11th week:
Lecture: (C) Sleep disorders; dementia. (PT) Symptoms and principles of physiotherapy in peripheral pareses
Practical: Movement therapy of the brachial plexus injuries and the nerve injuries on the lower limbs

12th week:
Lecture: (C) Tumours; types of polyneuropathies; treatment of the alcoholic and diabetic polyneuropathies. (PT) Muscular diseases, myopathies and myotonies
Practical: Principles of the movement therapy in progressive muscular dystrophy

13th week:
Lecture: (C) Spinal cord diseases; Guillain-Barré syndrome. (PT) Spinal Muscular Atrophy (SMA), Amyotrophic Lateral Sclerosis (ALS), Guillain-Barré syndrome, types of polyneuropathies
Practical: Physiotherapy of the Guillain-Barré syndrome; demonstration of movement therapy for polyneuropathies with alcoholic, diabetic and autoimmune origine

14th week: **Lecture:** (C) Injuries of the CNS; neurological diseases in the childhood. (PT) Movement disorders wirh neuropsychiatric origin **Practical:** Movement therapy in apraxia, agnosia and dementia	**15th week:** **Lecture:** (C) Consultation. (PT) Consultation **Practical:** Endterm practice examination

Requirements

Prerequisites: Pathology, Kinesiology II, 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/topics.

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

Department of Physiotherapy

Subject: **OBSTETRICS AND GYNAECOLOGY FOR PHYSIOTHERAPISTS**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **30**
Practical: **45**

1st week:
Lecture: Taking history, routine examinations and screening methods in gynaecology
Practical: (1) Relaxation methods; role of psychology in the treatment; theory, history and applications of the relaxation methods; effects and background of the autogen training; psycho-somatic disorders

2nd week:
Lecture: Pathological pregnancy, abortion
Practical: (1) Relaxing methods I

3rd week:
Lecture: Process of the birth; life-threatening states in the obstetrics
Practical: (1) Relaxing methods II

4th week:
Lecture: Disorders of menstruation; family planning, contraception
Practical: (1) Pre- and postoperative physiotherapy in the gynaecology

5th week:
Lecture: Gynaecological inflammations; benignant gynaecological tumours
Practical: (1) Prevention of incontinence by special exercises

6th week:
Lecture: Malignant tumours
Practical: (1) Training of perineal muscles in different body positions

7th week:
Lecture: Surgical interventions
Practical: (1) Training of perineal muscles in different body positions

9th week:
Lecture: Significance of the physiotherapy in gynaecology; principles and structure of postoperative exercises
Practical: (1) Complex training during pregnancy

10th week:
Lecture: Stages of preparation for delivery; significance of team work, tasks of the members in the team
Practical: (1) Puerperal training, mother-baby exercises

11th week:
Lecture: Structure of the pregnancy training; alternative birth
Practical: (1) Physiotherapy in the menopausa

12th week:
Lecture: Synchronization of the stage of pregnancy and the training; relax methods, significance of the stretching exercises
Practical: (1) Postmenopausal training

13th week:
Lecture: Exercises in the early postpartum period; structure of the baby-mother training
Practical: (2) Clinical demonstration: pre- and postoperative patient care

14th week:
Lecture: Osteoporosis; possibilities of the physiotherapists at the gynaecological departments
Practical: (2) Clinical demonstration: visit in the delivery room; puerperal patient care

15th week:
Lecture: Consultation
Practical: (1) End-term examination

Requirements

Prerequisites: Kinesiology II, Internal Medicine for Physiotherapists II

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

Department of Physiotherapy

Subject: **PAEDIATRICS PRACTICE**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: **80**

Topics

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

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

Prerequisite: Infant Care and Paediatrics for Physiotherapists I

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

Department of Physiotherapy

Subject: **PHYSIOTHERAPY OF THE MOVEMENT SYSTEM - PT IN ORTHOPAEDICS AND TRAUMATOLOGY**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **45**
Seminar: **40**
Practical: **80**

1st week:
Lecture: (T) 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
Seminar: (O) Examination, diagnostics, general treatment methods in orthopaedic physiotherapy (T) Group and individual training programme for the spinal-fractured, corset-wearing patients; innervation exercises; strengthening of the dorsal and abdominal muscles; balance improvement
Practical: (T) Patient examination; prae- and postoperative physiotherapy methods

2nd week:
Lecture: (O) Physiotherapy in orthopaedics; physiological posture, postural deformities: background and consequences
Seminar: (O) Examinations; rules of exercises in the typical forms of the postural deformities (T) 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
Practical: (O) Targeted physiotherapy for the kyphotic and lordotic spine

3rd week:
Lecture: (T) Treatment of a patient with spinal cord injury; characteristic symptoms in special cases; special fields of the functional treatment in spinal cord injury
Seminar: (O) Static changes of the spine: sacralisation, lumbalisation, spondylitis, spondylolystesis; points of wiew of the examination and of the treatment. (T) 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
Practical: (O) Targeted physiotherapy for the kypholordotic spine and the flat back.

4th week:
Lecture: (O) Etiology of the scoliosis; conservative and surgical treatments; kinesiological consequencies of scoliosis at different location; compensatory mechanisms
Seminar: (O) Conservative treatments in scoliosis, special exercises and techniques (T) Use of the wheelchair, solution of the life situations; relief of contractures
Practical: (O) Treatment of scoliosis at different location: special treatment in dorsal scoliosis

5th week:
Lecture: (T) 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
Seminar: (O) Developmental disorders in the neck and shoulder girdle: congenital torticollis, Klippel-Feil syndrome, scapula elevata; prosthesis in the shoulder – postoperative physiotherapy (T) Individual training for shoulder-injured patients; load-free and loaded positions; use of instruments; paired exercises; conducted passive and active exercises
Practical: (O) Treatment of scoliosis at different location: special treatment in dorsal scoliosis

6th week:
Lecture: (O) Disorders of the shoulder; habitual luxation of the shoulder
Seminar: (O) Chest deformity: reasons, consequencies, physiotherapy (T) Group and individual training for shoulder-injured patients; load-free and loaded positions; use of instruments; paired exercises; conducted passive and active exercises
Practical: (O) Treatment of scoliosis at different location: special treatment in lumbar and dorsolumbar scoliosis

7th week:
Lecture: (T) 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
Seminar: (O) Congenital and acquired disorders of the elbow and the wrist complex (T) Group and individual training for elbow-injured patients; requirements for the individual treatment; isometric and isotonic exercises
Practical: (T) Complex physiotherapy in the brachial plexus laesion

8th week:
Lecture: (T) 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
Seminar: (O) Aseptic bone necrosis; Scheuermann disease, Perthes syndrome: etiology, reason, consequence, and physio-therapy (T) 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
Practical: (O) Physiotherapy in Scheuermann disease and Perthes syndrome

9th week:
Lecture: (T) Pelvic fractures; treatment under extension and after osteosynthesis; graded load, subaquatic training; functional treatment of the traumatic hip luxation; early and late complications, arthrosis
Seminar: (O) Postoperative physiotherapy and rehabilitation programme after total hip endoprosthesis (T) Conservative functional treatment of the hip fractures; positioning, expansion; processing the active training in the bed; education of the use of wrap
Practical: (O) Conservative functional treatment of the coxarthrosis and gonarthrosis

10th week:
Lecture: (T) Movement therapy of the femur neck fractured patients; mobilization in the case of movement-stable or load-stable osteosynthesis
Seminar: (O) Postoperative physiotherapy and rehabilitation programme after total knee endoprosthesis (T) Surgical treatment of the pelvic fractures; extension training, active training in the bed, graded mobilization
Practical: (T) 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

11th week:
Lecture: (O) Congenital and acquired disorders of the hip complex, the knee, the ankle and the foot complex
Practical: Clinical demonstration

12th week:
Lecture: (T) Ankle injuries; treatment; complementary treatment of complica-tions; physiotherapy in Achilles tendon rupture
Practical: Clinical demonstration

13th week:
Lecture: (T) Crural fractures; complications; treatment of a fixateur externe wearing patient; mobilization; ankle injuries; treatment; complementary treatment of complications; physiotherapy in Achilles tendon rupture
Practical: Clinical demonstration

14th week:
Lecture: (T) Post amputation training; stub care, prevention of contractures; phantom training; gait teaching; prostheses on the upper and lower limbs; multiple traumatisation; potential physiotherapy; active breathing exercises for chest-injured patients; interventions for rehabilitation
Practical: (T) Physiotherapy for the chest- and abdomen-injured patients; breathing exercises; improvement of circulation; general conditioning

15th week:
Lecture: (O, T) Consultation
Practical: Practice exams
Self Control Test

Requirements

Prerequisites: Kinesiology II, Mobilization-Manual Techniques II, EBHCT

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 grade of ESE will be offered on the basis of the scores in the midterm theoretical examination and the practical exam. You have chance to improve the mark during the examination period taking ESE.

Department of Physiotherapy

Subject: **PROFESSIONAL ORIENTATION II**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Seminar: **15**

1st week:
Seminar: Features of the applied research work in the health sciences

2nd week:
Seminar: Orientation in the scientific literature

3rd week:
Seminar: Conventional methods for orientation in the scientific literature

4th week:
Seminar: Use of the electronic data bases I

5th week:
Seminar: Use of the electronic data bases II

6th week:
Seminar: Selection of articles for individual presentation

7th week:
Seminar: Analysis of an article in the group – basic research

8th week:
Seminar: Analysis of an article in the group – applied research

9th week:
Seminar: Analysis of a review in the group

10th week:
Seminar: Techniques for presentation of results

11th week:
Seminar: Individual presentations of articles I

12th week:
Seminar: Individual presentations of articles II

13th week:
Seminar: Requirements of thesis work I

14th week:
Seminar: Requirements of thesis work II

15th week:
Seminar: Closing remarks

Requirements

Prerequisite: Basics of Research Methodology

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

E-learning course is attached to the conventional course.

The term mark will be constructed on the basis of individual activity and the quality of presentations.

Department of Physiotherapy

Subject: **RADIOLOGY AND DIAGNOSTIC IMAGING**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: Introduction the X-ray laboratory

2nd week:
Practical: Overview of radiological methods: conventional X-ray methods, ultrasound, CT, MRI, functional examinations

3rd week:
Practical: Basic pathological disorders of bones and joints; developmental variations and anomalies

4th week:
Practical: Inflammatory diseases of bones and joints; aseptic necrosis; diseases of movement system with endocrine origin

5th week:
Practical: Benign and malign tumors of bones; disorders of bones in the diseases of hemopoetic system

6th week:
Practical: Radiology of traumatology

7th week:
Practical: Radiological diagnostics of spinal degenerative disorders; tumors and inflammation of spinal column and spinal canal

8th week:
Practical: Practice exam

Requirements

Prerequisites: Biophysics, Anatomy II

Attendance at practices is compulsory, more than 4-hour absence results in the refused signature in the Lecture Book.

Department of Physiotherapy

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS II**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **30**
Practical: **45**

1st week:
Lecture: Physiotherapy in rheumatology
Practical: Measurements, diagnosis, general methods and treatments

2nd week:
Lecture: Model of the joint pain; consequences of the pain
Practical: Diagnostics of the joint pain

3rd week:
Lecture: Seronegative spondylo-arthropathies, diagnostic criteria; ankylosing spondylitis, pathology, effects on the joints
Practical: Complex functional treatment of the ankylosing spondylitis by the methods of physiotherapy

4th week:
Lecture: Seronegative spondylo-arthropathies: Reiter-syndrome; reactive and psoriatic arthritis
Practical: Physiotherapy of the Reiter syndrome, the reactive and psoriatic arthritis

5th week:
Lecture: Arthrosis of the joints, symptoms, pain and consequences; arthrosis in the hip and the knee
Practical: Examination and physiotherapy in arthrosis

6th week:
Lecture: Arthrosis in the cervical and lumbar regions; symptoms
Practical: Treatments, exercises and lifestyle

7th week:
Lecture: Inflammatory diseases of the joints; typical pain, instability, decreased motion; rheumatoid arthritis
Practical: General rules of treatment in rheumatoid arthritis

8th week:
Lecture: Rheumatoid arthritis in the upper extremities
Practical: Rules of the joint prevention and exercises

9th week:
Lecture: Rheumatoid arthritis in the lower extremities
Practical: Rules of the joint prevention and exercises

10th week:
Lecture: Soft tissue rheumatism in the upper extremities; pathology, diagnosis and treatment
Practical: Differential diagnosis and physiotherapy

11th week:
Lecture: Soft tissue rheumatism in the lower extremities; pathology, diagnosis and treatment
Practical: Differential diagnosis and physiotherapy

12th week:
Lecture: Osteoporosis: pathomechanism, changed posture and function; Primary, secondary and tertiary preventions
Practical: Compressed vertebra fracture, early and late mobilisation

13th week:
Lecture: Fibromyalgia: pathomechanism, symptoms, diagnosis and treatment
Practical: Complex physiotherapy of fibromyalgia

14th week:
Lecture: Joint prevention and lifestyle in rheumatologic diseases
Practical: Practice exam

15th week:
Lecture: Consultation
Self Control Test

Requirements

Prerequisite: Rheumatology for Physiotherapists I

A 15-hour clinical demonstration completes the course.

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 grade of ESE will be offered on the basis of the scores in the midterm theoretical examination and the practical exam. You have chance to improve the mark during the examination period taking ESE.

Department of Physiotherapy

Subject: **THESIS I**
Year, Semester: 3rd year/2nd semester**,** 3rd year/2nd semester
Number of teaching hours: 0

Topics

Selection of topic for thesis work, collection at least 5 relevant articles; making a study plan for scientific investigation

Requirements

Prerequisite: Basics of Research Methodology

The aim of the course is to help the choice of the topic on the basis of the scientific literature and the elaboration of the study design. E-learning module supports the activity.

Department of Preventive Medicine

Subject: **PREVENTIVE MEDICINE AND PUBLIC HEALTH II**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **30**
Seminar: **30**

1st week:
Lecture: Preventive strategies. Screening programmes
Seminar: HFA database

2nd week:
Lecture: Introduction to epidemiology and surveillance of communicable diseases. Characteristics of infectious diseases
Seminar: Outbreak investigation

3rd week:
Lecture: Vaccines and immunization. Sexually transmitted diseases
Seminar: Using the results of communicable disease surveillance in epidemiological research

4th week:
Lecture: Epidemiology of HIV/AIDS. Epidemiology of hepatitis
Seminar: Vaccination programmes

5th week:
Lecture: Epidemiology of nosocomial infections. Epidemiology and control of zoonoses
Seminar: Sterile Services Department (visit)

6th week:
Lecture: Epidemiology and control of airborne infections. Epidemiology and control of tuberculosis
Seminar: Emerging and re-emerging infections

7th week:
Lecture: Epidemiology of gastrointestinal infections. Epidemiology of tropical diseases
Seminar: Geographical pattern of infectious diseases

8th week:
Lecture: Introduction to epidemiology of the non-communicable diseases. Epidemiology and control of cardiovascular diseases
Seminar: North Karelia Programme

9th week:
Lecture: Epidemiology of malignant diseases. Epidemiology and control of metabolic, gastrointestinal and liver diseases
Seminar: Screening, monitoring and controlling diseases in primary care I

10th week:
Lecture: Epidemiology of chronic respiratory diseases. Epidemiology of mental disorders and behavioral problems
Seminar: Screening, monitoring and controlling diseases in primary care II

11th week:
Lecture: Health determinants. Lifestyle and health: the effects of personal factors on health
Seminar: Genetic susceptibility to chronic diseases at individual and population levels

12th week:
Lecture: Lifestyle and health: the effects of alcohol and drug use on health. Environment and health: the effects of socio-economical factors on health
Seminar: Concept and practice of health promotion

13th week:
Lecture: Health policy principles in developed and developing countries. Needs, demands and use of health service
Seminar: Public health and health care databases

14th week:
Lecture: Quality management (measurement and assessment) in health care. Quality control in health care
Seminar: Performance measurement in health care

15th week:
Lecture: Basics of health economics. Methods of financing health services
Seminar: New challenges of preventive medicine and public health

Requirements

Prerequisite: Preventive Medicine and Public Health I

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 practices or seminars in a semester even if he/she has an acceptable excuse. The absences at seminars should be made up with another group only in the same week (maximum 3 times during the semester).

The ESE will cover the topics of all lectures and seminars of the semester. The final mark of the practical exam is the average of the mark given for the use and interpretation of public health databases and the mark obtained for the oral exam. The written exam covers the topics of all lectures and seminars of the semester. The mark will be calculated on the basis of the average of the mark given for the practical exam and for the written exam.

The ESE will be failed if either the practical or the written exam is graded unsatisfactory.
The student is obliged to repeat only the failed part of the exam. The mark of the exam will be calculated on the basis of the average of the repeated part and the previous part of the exam.

CHAPTER 10
ACADEMIC PROGRAM FOR THE 4TH YEAR

Department of Health Management and Quality Assurance

Subject: **ECONOMICS**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Subject, method and the short history of Economics

2nd week:
Lecture: The concept of economic agents

3rd week:
Lecture: National income

4th week:
Lecture: The market mechanisms: the analysis of demand and supply

5th week:
Lecture: Comparative static analysis

6th week:
Lecture: The concept of the product-, money- and labour market

7th week:
Lecture: The instruments of economic policy: fiscal and monetary policy I

8th week:
Lecture: The instruments of economic policy: fiscal and monetary policy II

9th week:
Lecture: The role of the Central Bank

10th week:
Lecture: Development of banks and the financial system I

11th week:
Lecture: Development of banks and the financial system II

12th week:
Lecture: The functions of financial intermediary

13th week:
Lecture: Current issues of the Hungarian economy I

14th week:
Lecture: Current issues of the Hungarian economy II

15th week:
Lecture: Consultation

Requirements

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

Department of Health Management and Quality Assurance

Subject: **INTRODUCTION TO MANAGEMENT**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Managing within the dynamic business environment; taking risks and making profits

2nd week:
Lecture: How economics affects business: the creation and distribution of wealth

3rd week:
Lecture: Competing in global markets

4th week:
Lecture: Demonstrating ethical behaviour and social responsibility; choosing a form of business ownership

5th week:
Lecture: Entrepreneurship and starting a small business

6th week:
Lecture: Management, leadership, and employee empowerment; adapting organizations to today's markets

7th week:
Lecture: Producing world-class goods and services; motivating employees and building self-managed teams

8th week:
Lecture: Human resource management: finding and keeping the best employees; dealing with employee-management issues and relationships

9th week:
Lecture: Marketing: building customer and stakeholder relationships; developing and pricing products and services

10th week:
Lecture: Distributing products quickly and efficiently; today's promotional techniques

11th week:
Lecture: Using technology to manage information

12th week:
Lecture: Understanding financial information and accounting

13th week:
Lecture: Financial management; securities markets: financing and investing opportunities

14th week:
Lecture: Understanding money and financial institutions

15th week:
Lecture: Consultation

Requirements

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

Department of Physiotherapy

Subject: **INFANT CARE AND PAEDIATRICS FOR PHYSIOTHERAPISTS II**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**
Practical: **10**

1st week:
Lecture: Developmental abnormalities of the nervous system

2nd week:
Lecture: Psychological characteristics of the childhood; making contact; role of the game

3rd week:
Lecture: Psychomotor development up to 1 year

4th week:
Lecture: Elementary movement patterns
Practical: Clinical demonstration

5th week:
Lecture: Neurological infections from the developmental neurological aspect

6th week:
Lecture: Neurological examinations of the newborns and premature infants
Practical: Clinical demonstration

7th week:
Lecture: Signs of damaged central nervous system
Practical: Clinical demonstration

8th week:
Lecture: Neurological relations of the perinatal injuries

9th week:
Lecture: Perinatal intracranial haemorrhages

10th week:
Lecture: Hypoxic-ischaemic encephalopathy
Practical: Clinical demonstration

11th week:
Lecture: Hydrocephalus

12th week:
Lecture: Metabolic diseases from the developmental neurological aspects

13th week:
Lecture: Neuromuscular diseases in the infant hood
Practical: Clinical demonstration

14th week:
Lecture: Neurorehabilitation methods

15th week:
Lecture: Consultation

Requirements

Prerequisite: Infant Care and Paediatrics 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.

Department of Physiotherapy

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS II**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**
Practical: **60**

1st week:
Lecture: Characteristics of the normal movements, general introduction to Bobath's method
Practical: (B) Inspection, taking history, examination of muscular tone

2nd week:
Lecture: Patient examination according to Bobath's method
Practical: (B) Special examinations and tests

3rd week:
Lecture: Hypotonia and spasticity
Practical: (B) Exercises in horizontal position, facilitation of lateral rolling, strenghthen-ing the pelvic muscles

4th week:
Lecture: Duties at the early phase of the stroke, treatment of the face
Practical: (B) Facilitation of the truncal movements

5th week:
Lecture: Characteristics and examination of the gait, system of equilibrium
Practical: (B) Exercises in sitting position, facilitation of getting up

6th week:
Lecture: Cerebral plasticity and its role in the treatment
Practical: (B) Exercises in upright position, tactile stimulation

7th week:
Lecture: Principles in the treatment of neglect and Pusher syndrome
Practical: (B) Facilitation of the gait

8th week:
Practical: (B) Clinical demonstration. (E) Aim and principles of the electrodiagnostic procedures, rules of processing; pain and electrotherapy

9th week:
Practical: (B) Clinical demonstration. (E) Models, types and classification of the electrotherapeutic treatments. Classification of the peripheral nerve injuries, complications; assesment of the degree of denervetion; ENG, examination of the sensory nerves

10th week:
Practical: (B) Clinical demonstration. (E) Physical and physiological bases of the low and middle frequency treatments

11th week:
Practical: (B) Clinical demonstration. (E) Galvan and Farad tests, Pflüger's rule, measurement of the rheobase and chronaxie

12th week:
Practical: (B) Clinical demonstration. (E) Taking intensity-duration curve, evaluation of the results, determination of the accommodation factor, examination of the muscles (EMG)

13th week:
Practical: (B) Clinical demonstration. (E) Muscle stimulation, selective stimulus current treatment

14th week:
Practical: (B) Clinical demonstration. (E) Complex evaluation of the electrodiagnostic findings; indirect electrodiagnostics

15th week:
Lecture: Consultation, end-term written examination
Practical: (B) Clinical demonstration. (E) End-term practice examination

Requirements

Prerequisite: 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. The ESE mark will be constructed from the results of the examinations from the Bobath's method and electrodiagnostics. The scores of the modules may be improved selectively.

Department of Physiotherapy

Subject: **PSYCHIATRY FOR PHYSIOTHERAPISTS**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **30**
Practical: **15**

1st week:
Lecture: (1) Meaning and role of the psychiatry; definition of disease in psychiatry; organic psychiatric disorders; psychotic psychiatric diseases

2nd week:
Lecture: (1) Basics of human communication; distress disorders, depression, suicide.

3rd week:
Lecture: (1) Personality disorders; addictions: alcoholism and drug dependence; treatment of the psychiatric diseases

4th week:
Lecture: (1) Psychosomatic diseases; eating disorders; psychotherapies, cognitive therapy, relaxation methods, movement therapy; other psychotherapeutic methods; sociotherapies, possibilities for rehabilitation

5th week:
Lecture: (1) Emergency psychiatry; active and passive movement therapy in psychiatric disorders

6th week:
Lecture: (1) Summary, consultation

7th week:
Lecture: (1) Midterm written exam

8th week:
Lecture: (2) Psychiatric rehabilitation; role of a physiotherapist in the psychiatry; communication with psychiatric patients
Practical: Significance of the physiotherapist′s personality; improvement of personality by game; communication exercises; games to improve communication skills

9th week:
Lecture: (2) Group training, structure of the rhythmic movement therapy
Practical: What can do the physiotherapist, if the psychiatric disorder is a comcomittant disease? Case study; demonstration and practice of the rhythmic exercises

10th week:
Lecture: (2) Movement therapy for addiction patients; principles of the symptom-oriented movement therapy in distress syndromes
Practical: Demonstration and practice of the movement therapy

11th week:
Lecture: (2) Psychiatric syndromes with disturbed body image and experience; disorders of body experience in psychotic diseases
Practical: Demonstration of the exercises aimed to improve the body image; individual and group movement therapy possibilities for schizophrenia

12th week:
Lecture: (2) Principles of symptom-oriented movement therapy in mood disorders; relaxation techniques
Practical: Demonstration and practice of the movement therapy applied in bipolar disorders

13th week:
Lecture: (2) Communicative movement therapy; Alexander method; demonstration of the Feldeinkrais method and dance therapy
Practical: Demonstration and practice of the communicative movement therapy; self expression through movement

14th week:
Lecture: (2) Infant psychiatric disorders; Attention Deficit Hyperactivity Disorder, (ADHD); psychiatric disorders in elderly persons
Practical: Movement therapy in the psychiatric disorders of the children; movement therapy for ADHD; improvement of the physical and mental functions of demencia patients

15th week:
Lecture: (2) Midterm written exam
Practical: End-term practice examination

Requirements

Prerequisites: Pathology, Kinesiology 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 mark will be constructed from the results of the theoretical clinical and physiotherapeutic knowledge and the results of the practical endterm examination. The scores of the modules may be improved selectively. In the examination period a complex written examination can be taken (A chance), but the prerequisite for the ESE is the successful completion of the practice examination.

Department of Physiotherapy

Subject: **REHABILITATION**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **30**
Practical: **30**

1st week:
Lecture: Definition of rehabilitation; history, scheme of the WHO
Practical: Introduction to Children Rehabilitation Centre

2nd week:
Lecture: System of institutions in rehabilitation
Practical: Visiting the Department of Rehabilitation in the Kenézy Hospital

3rd week:
Lecture: Main fields of rehabilitation; characteristics of the team work
Practical: Children rehabilitation team

4th week:
Lecture: Definition and working methods of medical rehabilitation
Practical: Examination of learning ability

5th week:
Lecture: Pedagogical rehabilitation
Practical: Integrated-segregated education, early development

6th week:
Lecture: Occupational rehabilitation, institutions
Practical: Occupational rehabilitation

7th week:
Lecture: History and development of rehabilitation in Hungary and in other countries
Practical: Demonstration of medical aids supporting the movement

8th week:
Lecture: Definition of social rehabilitation, relationships to other fields of rehabilitation
Practical: Visit in a rehabilitation institution

9th week:
Lecture: Role of the physiotherapists in the rehabilitation, connections to other members of a team
Practical: Extremity prosthetics, medical shoes

10th week:
Lecture: Special fields of rehabilitation: psychological and psychiatric rehabilitation
Practical: Visit to the Pediatric Psychiatric Department of the Kenézy Hospital

11th week:
Lecture: Special fields of rehabilitation: cardiologic, oncologic and geriatric rehabilitation
Practical: Visit to the Psychiatric Department of the Kenézy Hospital

12th week:
Lecture: Special fields of rehabilitation: neurologic rehabilitation
Practical: Visit to the Rehabilitation Department of the Kenézy Hospital – stroke patients

13th week:
Lecture: Role of civic organizations in the rehabilitation
Practical: Introduction to civic organizations I

14th week:
Lecture: Summary
Practical: Introduction to civic organizations II

15th week:
Lecture: Consultation
Practical: Consultation

Requirements

Prerequisites: Orthopaedics for Physiotherapists II, Traumatology 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 practical hours.

Department of Physiotherapy

Subject: **THESIS II**
Year, Semester: 4th year/1st semester
Number of teaching hours:

Topics

Data collection and evaluation.

Requirements

Prerequisite: Thesis I

The aim of the course is to help the process of scientific work. E-learning module supports the activity.

Department of Physiotherapy

Subject: **TRAUMATOLOGY AND INTENSIVE THERAPY FOR PHYSIOTHERAPISTS II**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: Observation, monitoring and documentation at the intensive therapy unit
Practical: Equipments at the intensive therapy unit; role of the physiotherapist in the team; special aspects of the children care

2nd week:
Lecture: Monitoring of the brain function; renal function; laboratory diagnostics; infection control; documentation
Practical: Role of physiotherapists in the acute care of neurological patients, nursing in cerebrovascular crisis, tasks for physiotherapists

3rd week:
Lecture: Water and electrolyte balance in normal and pathologic states
Practical: Water and electrolyte balance, role of the physiotherapist in the care

4th week:
Lecture: Unconscious and disturbed patient; grades of the disorientation
Practical: Care of a disoriented patient, role of the physiotherapist

5th week:
Lecture: Danger of the airway obstruction, support, nursing, physiotherapy
Practical: Care of a comatose patient, role of the physiotherapist

6th week:
Lecture: Postoperative patient care; postoperative respiratory disorders, prevention and treatment
Practical: Postoperative intensive care, tasks for physiotherapists; indications and contraindications of the respiratory physiotherapy in the postoperative period

7th week:
Lecture: Polytraumatized patient, Multitrauma, polytrauma. Chest injuries, role of the physiotherapist in the treatment
Practical: Tasks of the physiotherapist in the care of a traumatized patient; medical care of the patients with chest, cranium and spinal cord injurie

8th week:
Lecture: Intensive therapy of the acute coronary syndrome (ACS), patho-physiology, types and symptoms of the cardiac insufficiency
Practical: Tasks of the physiotherapist in the early mobilization of the patients after myocardial infarct or cardiac surgery intervention

9th week:
Lecture: Mobilization, physiotherapy in ACS and cardiac insufficiency
Practical: Tasks of the physiotherapist in the early mobilization of the patients after myocardial infarct or cardiac surgery intervention, indications and contra-indications of the movement therapy

10th week:
Lecture: Respiratory insufficiency and its intensive treatment

Practical: Indications and contraindications of the respiratory physiotherapy in the acute care

11th week:
Lecture: Respiratory physiotherapy
Practical: Methods of the respiratory therapy, criteria for application in the acute respiratory insufficiency

12th week:
Lecture: Artificial respiration, indications, types of respirators
Practical: Physiotherapy for patient with prolonged mechanical respiration

13th week:
Lecture: Methods of mechanical ventilation, artificial breathing strategy
Practical: Breaking the patient of the respirator

14th week:
Lecture: Summary
Practical: Summary, repetition

15th week:
Lecture: Consultation
Practical: End-term exam

Requirements

Prerequisites: Physiology, Internal Medicine for Physiotherapists III

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

Department of Physiotherapy

Subject: **INTERNAL MEDICINE PRACTICE II**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **80**

Topics

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

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:
Prerequisite: Internal Medicine for Physiotherapists III

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

Department of Physiotherapy

Subject: **NEUROLOGY PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **80**

Topics

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.

Department of Physiotherapy

Subject: **ORTHOPAEDICS PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **120**

Topics

Orthopaedic diseases of spine; orthopaedic diseases of upper extremities; orthopaedic diseases of lower extremities; pre- and postoperative physiotherapy

Requirements

Prerequisite: Physiotherapy of the Movement System (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.

Department of Physiotherapy

Subject: **REHABILITATION PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **80**

Topics

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.

Department of Physiotherapy

Subject: **RHEUMATOLOGY PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **120**

Topics

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.

Department of Physiotherapy

Subject: **THESIS III**
Year, Semester: 4th year/2nd semester
Number of teaching hours:

Topics

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

Requirements

Prerequisite: Thesis II

Evaluation and discussion of the results, writing the Thesis. E-learning module supports the activity.

Department of Physiotherapy

Subject: **TRAUMATOLOGY PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **120**

Topics

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

Requirements

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

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

CHAPTER 11
ELECTIVE COURSES

Department of Physiotherapy

Subject: **SPORTS PHYSIOTHERAPY AND MEDICINE I - MEASUREMENT AND IMPROVEMENT OF PHYSICAL ABILITIES**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: Conditional ability – basics

2nd week:
Lecture: The training triad

3rd week:
Practical: Training in the gym - basics

4th week:
Lecture: Endurance

5th week:
Practical: Training in the gym: endurance - measuring and drills

6th week:
Lecture: Speed skill

7th week:
Practical: Training in the gym: Speed drill - measuring and drills

8th week:
Lecture: Force

9th week:
Practical: Training in the gym: Strenght training - measuring and drills

10th week:
Lecture: Complex conditional ability

11th week:
Practical: Complex conditional ability

12th week:
Lecture: Balance: training and rest

13th week:
Practical: Stretching - measuring and drills

14th week:
Practical: Outdoor training

15th week:
Practical: Endterm examination

Requirements

Attendance at lectures is strongly recommended. 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.

Department of Physiotherapy

Subject: **INTRODUCTION TO SUBAQUATIC THERAPY**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: Relationship of the humans and water
Practical: Movement, functionality in the water

2nd week:
Lecture: Physical and chemical effects of the water on the human organism
Practical: Effects of the mechanical factors on the movement

3rd week:
Lecture: Orientation in the subaqual space
Practical: Effects of the mechanical factors on the breathing

4th week:
Lecture: Analysis of the spinal column movements, adaptation of the movements to the effects of the subaqual surroundings
Practical: Movements in the water: mobilization of the spinal column

5th week:
Lecture: Movements in the water: relaxation and strengthening of the truncal muscles in the subaquatic space
Practical: Movements in the water: relaxation and strengthening of the truncal muscles in the subaquatic space

6th week:
Lecture: Analysis of the upper limb movements, adaptation of the movements to the effects of the subaqual surroundings
Practical: Movements in the water: movements of the upper limbs in the subaqual surroundings, muscle strengthening

7th week:
Lecture: Analysis of the lower limb movements, adaptation of the movements to the effects of the subaquatic surroundings
Practical: Movements in the water: movements of the lower limbs in the subaqual surroundings, muscle strengthening

8th week:
Lecture: Individual and group exercises in the subaquatic space
Practical: Movements in the water: contracture solution facilitated by the water

9th week:
Lecture: Use of fixed and mobile instruments in water
Practical: Movements in the water: instrumental facilitation of the movements in the water

10th week:
Lecture: Increase in the resistance of the medium by using instruments
Practical: Movements in the water: increase in the resistance of the medium in order to achive muscle strengthening

11th week:
Lecture: Mechanisms of the gait and the claudication
Practical: Movements in the water: analysis of the gait in water

12th week:
Lecture: Dysbalance and coordination disorders
Practical: Movements in the water: improvement of the coordination

13th week:
Lecture: Aquafitness
Practical: Fitness exercises in the water

14th week:
Lecture: Summary, consultation
Practical: End-term examination

15th week:
Lecture: Consultation
Practical: End-term examination

Requirements

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

Department of Physiotherapy

Subject: **SPORTS PHYSIOTHERAPY AND MEDICINE II - SPORTS MEDICINE**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Historical relations; position of the sports medicine in the medical supply and the sport

2nd week:
Lecture: System of the service; sports medicine

3rd week:
Lecture: Relations to internal medicine (role of physical activity in the prevention and treatment)

4th week:
Lecture: Basic knowledge in the sports surgery (sports injuries: definition, etiology, pathomechanism)

5th week:
Lecture: Basic knowledge in the sports surgery (acute care of sports injuries)

6th week:
Lecture: Basic knowledge in the sports surgery (overstressed injuries, general principles of treatment)

7th week:
Lecture: Rehabilitation of the sports injuries

8th week:
Lecture: Sports cardiology

9th week:
Lecture: Demonstration of patient examination (visit in the sport center)

10th week:
Lecture: Sports psychology

11th week:
Lecture: Nutrition of sportsmen

12th week:
Lecture: Doping and related questions

13th week:
Lecture: Special tasks in the sports medicine

14th week:
Lecture: Special service in the sports medicine

15th week:
Lecture: Consultation

Requirements

Prerequisite: Orthopedics for Physiotherapists I
Attendance at lectures is strongly recommended.

Department of Physiotherapy

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY I - AESTHETIC BODY FORMING GYMNASTICS**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: **30**

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

15th week:
Practical: End-term exam

Requirements

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.

Department of Physiotherapy

Subject: **TOOLS IN PHYSIOTHERAPY I - GYMNASTIC EQUIPMENTS**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: **30**

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: Strengheting and endurance training with ball, use of stability trainer

13th week:
Practical: Repetition, consultation

14th week:
Practical: End-term exam

15th 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.

Department of Physiotherapy

Subject: **TOOLS IN PHYSIOTHERAPY II - BALLS**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: **30**

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

15th 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.

Department of Physiotherapy

Subject: **GERIATRY**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Definition of geriatry; aging, psychic context. Thermoregulation, water and electrolyte balance in the elder age

2nd week:
Lecture: Cardiovascular physiology, pathophysiology and clinical relations in the elder age.

3rd week:
Lecture: Respiratory physiology, pathophysiology and clinical relations in the elder age.

4th week:
Lecture: Gastrointestinal physiology, pathophysiology and clinical relations in the elder age. Physiology, pathophysiology and clinical characteristics of the urogenital system in the elder age.

5th week:
Lecture: Physiology, pathophysiology and clinical characteristics of the immune and endocrine system in the elder age.

6th week:
Lecture: Function of the special sense organs in the elder age

7th week:
Lecture: Diagnostic problems, principles of drug therapy in the elder age.

8th week:
Lecture: Psychoses and mental disorders in the elder age.Decubitus. Role of physiotherapists in the geriatry, immobilisation syndrome and its prevention.

9th week:
Lecture: Examination of the state. The pain and the movement, therapeutic exercises; psychic effects of movement

10th week:
Lecture: Changes in the muscle tone in the overloaded situations or other pathologic states. Movement-affecting disorders in different ages; multimorbidity in the elder age, its effects on the movement ability; body positions for exercises

11th week:
Lecture: Characteristic pathologic states in the elder age; the elder person with rheumatic disorders, protection of the joints; frequently used medical aids. Joint protecting positions of the therapist, role of the physiotherapist in the patient and family education.

12th week:
Lecture: Osteoporosis, the “silent thief”, physiotherapy. Fall and complications, prevention

13th week:
Lecture: Training for elder people. Exercises in sitting and standing positions to improve the condition.

14th week:
Lecture: Physiotherapy respecting the altered psychic/mental conditions in the elder age; pedagogic and psychic relations.

15th week:
Lecture: Consultation.

Requirements

Prerequisite: Internal Medicine for Physiotherapists I

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

Department of Physiotherapy

Subject: **ONCOLOGY**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **30**

1st week:
Lecture: Malignant tumors and oncotherapy in general point of wiev

2nd week:
Lecture: Diagnostic imaging in the oncology

3rd week:
Lecture: Radiotherapy

4th week:
Lecture: Lung cancer

5th week:
Lecture: Pain relief, palliative methods

6th week:
Lecture: Tumors of the movement system, bone metastasis

7th week:
Lecture: Paraneoplastic syndromes; definition of tumor markers and their application

8th week:
Lecture: Head, neck and thyroid gland tumors, malignant melanoma, brain tumors

9th week:
Lecture: Breast cancer

10th week:
Lecture: Urooncology; gynecologic tumors

11th week:
Lecture: Supportive therapy, physiotherapy

12th week:
Lecture: Gastrointestinal tumors; summary of the clinical relations

13th week:
Lecture: Psychooncology

14th week:
Lecture: Summary

15th week:
Lecture: Consultation

Requirements

Prerequisite: Internal Medicine for Physiotherapists I

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

Department of Physiotherapy

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY IV - LYMPHDRAINAGE**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: Morphology and physiology of lymphatic circulation, insufficiency
Practical: Introduction to practice

2nd week:
Lecture: Main types, stages and characteristics of lymphedema
Practical: Patient examination

3rd week:
Lecture: Reasons of lymphedema, symptoms, early and late consequences
Practical: Complex treatment of the lymphedema

4th week:
Lecture: Basis of the lymphatic drainage
Practical: Structure and processing of the lymphatic drainage

5th week:
Lecture: Indications and contraindications of the lymphatic drainage
Practical: Demonstration of basic and edema maneuvers

6th week:
Lecture: Complications of the lymphatic drainage
Practical: Practice of basic and edema maneuvers

7th week:
Lecture: Possibilities of prevention
Practical: Practice of basic and edema maneuvers

8th week:
Lecture: Rules for the treatment of the face and neck
Practical: Demonstration of the treatment of the face and neck

9th week:
Lecture: Types of the compression treatment, indications and contraindications
Practical: Practice of the treatment of the face and neck

10th week:
Lecture: Bandage, materials, processing
Practical: Practical relations of the bandage treatment

11th week:
Lecture: Bandage: contraindications, complications
Practical: Demonstration of bandage (upper limb)

12th week:
Lecture: Summary of clinical correlates
Practical: Demonstration of bandage (lower limb)

13th week:
Lecture: Care of the patient with lymphedema, advice for life style
Practical: Repetition, practice

14th week:
Lecture: Summary
Practical: Practice

15th week:
Lecture: Consultation
Practical: Endterm practice exam

Requirements

Prerequisite: Internal Medicine for Physiotherapists I

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

Department of Physiotherapy

Subject: **SUBAQUATIC THERAPY**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Introduction to practice

2nd week:
Practical: Subaquatic training

3rd week:
Practical: Improvement of equilibrium and muscle strength in the water

4th week:
Practical: Increase in the range of motion in water, gait exercises in water

5th week:
Practical: Relaxation in water

6th week:
Practical: Expiration control

7th week:
Practical: Group exercises

8th week:
Practical: Mental adaptation exercises

9th week:
Practical: Rotation, improvement of equilibrium

10th week:
Practical: Swimming

11th week:
Practical: Fitness

12th week:
Practical: Parasport, adapted physical activity

13th week:
Practical: Closing practice

14th week:
Practical: End-term exam

15th week:
Practical: End-term exam

Requirements

Prerequisites: Introduction to Subaquatic Therapy

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.

Department of Physiotherapy

Subject: **TOOLS IN PHYSIOTHERAPY III - PNF IN PRACTICE**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **10**
Practical: **20**

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

15th week:
Lecture: Consultation
Practical: End-term exam

Requirements

Prerequisite: Mobilization-Manual Techniques II

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.

Department of Physiotherapy

Subject: **TOOLS IN PHYSIOTHERAPY IV - ORTHETICS-PROSTHETICS**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **20**
Practical: **10**

1st week:
Lecture: Definition of the medical aids; history; classification
Practical: Basic tools in the prosthetics

2nd week:
Lecture: Role of the medical aids in the rehabilitation; general characterization
Practical: Basic knowledge in the fabrication of medical aids

3rd week:
Lecture: Role of physiotherapists in the patient education; development of tools
Practical: Proteometric basic definitions

4th week:
Lecture: Upper limb ortheses, problems and possibilities
Practical: Demonstration, practical relations

5th week:
Lecture: Lower limb ortheses
Practical: Demonstration, practical relations

6th week:
Lecture: Lower limb prosthetics
Practical: Demonstration, practical relations

7th week:
Lecture: Cervical spine ortheses, trunk corsets
Practical: Demonstration, practical relations

8th week:
Lecture: Pelvic belts
Practical: Demonstration, practical relations

9th week:
Lecture: Movement improving tools
Practical: Demonstration, practical relations

10th week:
Lecture: Medical shoes
Practical: Demonstration, practical relations

11th week:
Lecture: Compression stockings; incontinence management products
Practical: Demonstration, practical relations

12th week:
Lecture: Anti-decubitus tools
Practical: Demonstration, practical relations

13th week:
Lecture: Hygienic tools, medical aids for better quality of life
Practical: Demonstration, practical relations

14th week:
Lecture: Hygienic tools, medical aids for better quality of life
Practical: End-term practice exam

15th week:
Lecture: Consultation
Practical: End-term practice exam

Requirements

Prerequisite: Orthopedics for Physiotherapists I

Attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 2-hour absences at the practical hours.

Department of Physiotherapy

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY II - AUTOSTRETCHING**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: Physiological background, principles and types of stretching. The place of autostretching in the extending techniques

2nd week:
Practical: Examination of tensibility in trunk flexors, stretch in different positions I

3rd week:
Practical: Examination of tensibility in trunk flexors, stretch in different positions II

4th week:
Practical: Examination of tensibility in trunk extensors, stretch in different positions I

5th week:
Practical: Examination of tensibility in trunk extensors, stretch in different positions II

6th week:
Practical: Examination of tensibility in the trunk lateral flexors, stretch in different positions I

7th week:
Practical: Examination of tensibility in the trunk lateral flexors, stretch in different positions II

8th week:
Practical: Examination of tensibility in the shoulder complex, stretch in different positions I

9th week:
Practical: Examination of tensibility in the shoulder complex, stretch in different positions II

10th week:
Practical: Examination of tensibility in the pelvic complex, stretch in different positions I

11th week:
Practical: Examination of tensibility in the pelvic complex, stretch in different positions II

12th week:
Practical: Examination of tensibility in the ischiocrural muscles, stretch in different positions

13th week:
Practical: Examination of tensibility in the triceps surae, stretch in different positions

14th week:
Practical: End-term exam

15th week:
Practical: End-term exam

Requirements

Prerequisite: Mobilization-Manual Techniques I

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.

Department of Physiotherapy

Subject: **BASICS OF HIPPOTHERAPY**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Practical: **60**

1st week:
Practical: Introduction to hippotherapy

2nd week:
Practical: Care of the horse; keeping and feeding

3rd week:
Practical: Horse tools, grooming the tools

4th week:
Practical: Methods in hippotherapy I

5th week:
Practical: Methods in hippotherapy II

6th week:
Practical: Diseases of the horse

7th week:
Practical: Knowledge for horse drivers

8th week:
Practical: Basic definitions in hippotherapy; branches of hippotherapy

9th week:
Practical: Definition of hippotherapy; aims and sytem of conditions

10th week:
Practical: Indications, contraindications, effects

11th week:
Practical: Characteristics of the horse used for therapeutic purpose

12th week:
Practical: Methodology of hippotherapy

13th week:
Practical: Members of the team; documentation

14th week:
Practical: Examination methods

15th week:
Practical: End-term exam

Requirements

Attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 6-hour absences at the practical hours.

Department of Physiotherapy

Subject: **SPECIAL METHODS IN PHYSOTHERAPY V - KLAPP'S METHODS**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: Position and importance of the crawling exercises in physiotherapy

2nd week:
Practical: Aims, principles and importance of the Klapp's exercises

3rd week:
Practical: Types of crawling exercises

4th week:
Practical: Learning and practice of exercises

5th week:
Practical: Learning and practice of exercises

6th week:
Practical: Learning and practice of exercises

7th week:
Practical: Learning and practice of exercises

8th week:
Practical: Application and adaptation the exercises in orthopedic physical therapy - abnormal posture

9th week:
Practical: Application and adaptation the exercises in orthopedic physical therapy - scoliosis

10th week:
Practical: Application and adaptation the exercises in orthopedic physical therapy - osteochondrosis, Scheuermann diseas

11th week:
Practical: Application and adaptation the exercises in rheumatology - back pain

12th week:
Practical: Application and adaptation the exercises in rheumatology – ankylosing spondylitis

13th week:
Practical: Consultation

14th week:
Practical: End-term exam

15th week:
Practical: End-term exam

Requirements

Prerequisite: Physiotherapy of the Movement System (PT in Orthopedics and Traumatology)

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.

Department of Physiotherapy

Subject: **PSYCHOSOMATICS**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Definition of psychosomatics, historical background

2nd week:
Lecture: Psycho-neuro-immunology; psychosomatic approach of the patients

3rd week:
Lecture: Psychosomatic syndromes

4th week:
Lecture: Psychosomatic syndromes

5th week:
Lecture: Pain, distress

6th week:
Lecture: Depression; communication with the patients

7th week:
Lecture: Suggestive communication; possibilities for therapy

8th week:
Lecture: Consultation

Requirements

Internal Medicine for Physiotherapists I
Attendance at lectures is strongly recommended.

CHAPTER 12
LIST OF TEXTBOOKS

B1st year

General Principles in Health Care and Nursing:

Perry, A. G., Potter, P. A: Clinical Nursing Skills and Techniques. 7th edition. Mosby Inc, 2009. ISBN: 0-3230-5289-4.

Jarvis, C.: Student Laboratory Manual for Physical Examination & Health Assessment. 6th edition. Saunders, 2011. ISBN: 1-4377-1445-5.

Potter, P.A. , Perry, A.G., Stockert, P. : Fundamentals of Nursing. 8th edition. Mosby, 2012. ISBN: 0-3230-7933-4.

Jarvis, C.: Physical Examination and Health Assessment. 6th edition. Saunders, 2011. ISBN: 1-4377-0151-5.

Philosophy:

Gaarder J.: Sophie's World: A Novel about the History of Philosophy. Farrar Straus Giroux, 2007. ISBN: 0-374-53071-8.

Lefanu J.: The Rise and Fall of Modern Medicine. 1st edition. Carroll & Graf Publishers, 2000. ISBN: 0-786-70732-1.

Biophysics:

Wayne W. Daniel: Biostatistics: a foundation for analysis in the health sciences. 8th edition. John Wiley & Sons, 2004. ISBN: 0-471-45654-3.

Damjanovich S., J. Fidy, J. Szöllősi : Medical Biophysics. 1st edition. Medicina, 2009. ISBN: 978 963 226 249 9.

Communication Skills:

Segerstrale, U., Peter Molnár: Nonverbal Communication: Where Nature Meets Culture. Lawrence Erlbaum Mahwah N.J., 1997.

Groenman, N. H., Slevin, O. D., Buckenham, M. : Social and behavioral sciences for nurses. Campion Press Limited, 1992.

Bioethics:

Walter Glannon: Biomedical Ethics. Oxford University Press, 2004.

D. L. Gabard, M. W. Martin: Physical Therapy Ethics. 2nd edition. F.A. Davis Company , 2010. ISBN: 0-8036-1046-7.

S. Holland: Public Health Ethics. 1st edition. Polity Press, 2007. ISBN: 0-745-63303-X.

M. Benjamin, J. Curtis: Ethics in Nursing: Cases, Principles, and Reasoning. 4th edition. Oxford UP , 2010.

G. Gigerenzer: Reckoning With Risk. 1st edition. Penguin Books, 2003. ISBN: 0-140-29786-3.

Medical Latin:

Répás, L.: Basics of Medical Terminology. Répás László, 2012.

Basics of Physiotherapy:

Pagliarulo, M. A.: Introduction to Physical Therapy. 4th edition. Mosby Co, 2011. ISBN: 0-3230-7395-6.

Basic Microbiology:

Levinson, W.: Review of Medical Microbiology and Immunology. 10th edition. McGraw-Hill Medical, 2008. ISBN: 0-071-49620-3.

First Aid:

Kindersley D.: First Aid Manual. 10th edition. Dorling Kindersley Publishers, 2011. ISBN: 9781-4053-6214-6.

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.

Van de Velde S, et al: European first aid guidelines. Resuscitation, 72:240-51.2007.

Professional Orientation I:

Kissner C., L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Company, 2012. ISBN: 0-8036-2574-X.

Hungarian language I:

Marschalkó, Gabriella: Hungarolingua Basic Level 1. Debreceni Nyári Egyetem, 2011.

Anatomy I:

Palastanga N., D. Field, R. Soames: Anatomy and Human Movement. Structure and Function. 6th edition. Butterworth Heinemann, Elsevier, 2012. ISBN: 0-7020-5308-2.

K. L. Moore and A. M. R. Agur: Essential Clinical Anatomy. 2nd edition. Lippincott Williams & Wilkins, 2002. ISBN: 0-78172830-4.

Sobotta: Atlas of Human Anatomy Vol 1. 14th edition. Urban & Fischer, 2006. ISBN: 0-443-10348-8.

Sobotta: Atlas of Human Anatomy Vol 2. 14th edition. Elsevier Urban & Fisher, 2006. ISBN: 0-443-10349-6.

Anatomy II:

Moore K.L., A.F. Dalley, Anne MR Agur: Clinically Oriented Anatomy. 6th edition. Lippincott Williams & Wilkins, 2009. ISBN: 978-1-60547-652-0.

Sobotta: Atlas of Human Anatomy Vol 1. 14th edition. Urban & Fischer, 2006. ISBN: 0-443-10348-8.

Sobotta: Atlas of Human Anatomy Vol 2. 14th edition. Elsevier Urban & Fisher, 2006. ISBN: 0-443-10349-6.

Ross M.H., W. Pawlina: Histology. A text and Atlas. 6th edition. Lippincott Williams & Wilkins, 2010. ISBN: 978-0-7817-7200-6.

T. W. Sadler: Langman's Medical Embriology. 12th edition. Lippincott Williams &Wilkins, 2012. ISBN: 978-1-4511-4461-1.

Genetics and Molecular Biology:

Hartl D. L.: Essential Genetics: A Genomics Perspective. 5th edition. Jones & Bartlett Publishers, 2011. ISBN: 9780-7637-7364-9.

Psychology:

Groenman, N. H., Slevin, O. D., Buckenham, M.: Social and behavioral sciences for nurses. Nelson Thornes Ltd, 1992. ISBN: 1-8737-3203-1.

Cell Biology:

Alberts B., D. Bray, K. Hopkin, A. Johnson, J. Lewis, M. Raff, K. Roberts, P. Walter: Essential Cell Biology. 3rd edition. Garland Science, 2009. ISBN: 0-815-34129-6.

Kinesiology I:

K. P. Levangie, C. C. Norkin: Joint Structure and Function. A Comprehensive Analysis. 4th edition. FA Davis Co, 2005. ISBN: 9780-8036-1191-7.

D. A. Neumann: Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. 2nd edition. Mosby Co, 2009. ISBN: 0-3230-3989-8.

H. M Clarkson: Musculoskeletal Assessment: Joint Range of Motion and Manual Muscle Strength. 3rd edition. Lippincott Williams & Wilkins, 2012. ISBN: 1-6091-3816-3.

D. J. Magee: Orthopedic Physical Assessment. 5th edition. Elsevier Health Sciences, 2007.ISBN: 978-0-7216-0571-5.

C.C. Norkin: Measurement of joint motion: A guide to goniometry. 4th edition. FA Davis Co, 2009. ISBN: 0-8036-2066-7.

C. Kissner, L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Philadelphia, 2012. ISBN: 0-8036-2574-X

I.A. Kapandji: The Physiology of the Joints, Volume 1: Upper Limb. 6th edition. Churchill Livingstone, 2007. ISBN: 978-0-443-10350-6.

I.A. Kapandji: The Physiology of the Joints: The Lower Limb. 6th edition. Churchill Livingstone, 2010. ISBN: 0-7020-3942-X.

I.A. Kapandji: The Physiology of the Joints, volume III (The Vertebral Column, Pelvic Girdle and Head). 6th ed. Churchill Livingstone, 2008. ISBN: 0-7020-2959-9.

Hungarian language II:

Marschalkó, Gabriella: Hungarolingua Basic Level 1. Debreceni Nyári Egyetem, 2011.

Immunology:

Parham, P.: The Immune System. 3rd edition. Garland Science, 2009. ISBN: 0-8153-4146-6.

Murphy, K: Janeway's Immunobiology. 8th edition. Garland Science, 2011. ISBN: 0-8153-4243-8.

Abbas A. K., Lichtmann A. H., Pober S.: Cellular and Molecular Immunology. 4th edition. W.B. Saunders Co., 2000. ISBN: 0-7216-8233-2

Biomechanics:

Nordin, M., Frankel, V.: Basic Biomechanics of the Musculoskeletal System. 4th edition. Lippincott Williams and Wilkins, 2012. ISBN: 1-6091-3335-8.

2nd year

Kinesiology II:

K. P. Levangie, C. C. Norkin: Joint Structure and Function. A Comprehensive Analysis. 4th edition. FA Davis Co, 2005. ISBN: 9780-8036-1191-7.

D. A. Neumann: Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. 2nd edition. Mosby Co, 2009. ISBN: 0-3230-3989-8.

H. M Clarkson: Musculoskeletal Assessment: Joint Range of Motion and Manual Muscle Strength. 3rd edition. Lippincott Williams & Wilkins, 2012. ISBN: 1-6091-3816-3.

D. J. Magee: Orthopedic Physical Assessment. 5th edition. Elsevier Health Sciences, 2007.ISBN: 978-0-7216-0571-5.

C.C. Norkin: Measurement of joint motion: A guide to goniometry. 4th edition. FA Davis Co, 2009. ISBN: 0-8036-2066-7.

C. Kissner, L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Philadelphia, 2012. ISBN: 0-8036-2574-X

I.A. Kapandji: The Physiology of the Joints, Volume 1: Upper Limb. 6th edition. Churchill Livingstone, 2007. ISBN: 978-0-443-10350-6.

I.A. Kapandji: The Physiology of the Joints: The Lower Limb. 6th edition. Churchill Livingstone, 2010. ISBN: 0-7020-3942-X.

I.A. Kapandji: The Physiology of the Joints, volume III (The Vertebral Column, Pelvic Girdle and Head). 6th ed. Churchill Livingstone, 2008.ISBN: 0-7020-2959-9.

Cardiorespiratory and Exercise Physiology:

A. Fonyó: Principles of Medical Physiology. Medicina Publishing House, Hungary, 2002. ISBN: 963-242-726-2.

W. D. McArdle, F. I. Katch, V. L. Katch: Exercise Physiology: Energy, Nutrition, and Human Performance. 6th edition. Lippincott Williams & Wilkins, 2006. ISBN: 0-781-74990-5.

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.

Introduction to Clinical Medicine:

Lynn S. Bickley: Bates' Guide to Physical Examination and History Taking. 10th edition. Lippincott Williams & Wilkins, 2008. ISBN: 0-781-78058-6.

McPhee St. J., M. Papadakis: Current Medical Diagnosis and Treatment. 50th edition. McGraw-Hill Incorporated, 2011. ISBN: 0-07-176372-4.

Physiology:

Fonyó, A.: Principles of Medical Physiology. 1st edition. Medicina, 2002. ISBN: 9-632-42726-2.

Berne, R. M., Levy, M. N., Koeppen, B. M., Stanton, B. A.: Physiology. 6th edition. Mosby Inc, 2009. ISBN: 0-323-04582-0.

Guyton, A. C., Hall, J. E.: Textbook of Medical Physiology. 11th edition. Saunders, 2005. ISBN: 0-721-60240-1.

Neurophysiology:

Fonyó, A.: Principles of Medical Physiology. 1st edition. Medicina, 2002. ISBN: 9-632-42726-2.

Carpenter R.: Neurophysiology. 4th edition. A Hodder Arnold Publication, 2002. ISBN: 0-340-80872-1.

Schmidt R. A., T. D. Lee: Motor Control and Learning. 5th edition. Human Kinetics, 2011. ISBN: 0-736-07961-0.

Basic Biochemistry:

Devlin, T. M.: Textbook of Biochemistry with Clinical Correlations. 7th edition. John Wiley & Sons, 2010. ISBN: 0-470-28173-1.

Berg J.M., J. L. Tymoczko, L. Stryer: Biochemistry. 7th edition. W. H. Freeman, 2010. ISBN: 1-4292-2936-5.

Harvey R.A., D.R. Ferrier: Lippincott's Illustrated Reviews: Biochemistry. 5th edition. Lippincott Williams and Wilkins, 2010. ISBN: 9-7816-0831-4126 .

Health and Library Informatics:

Parker J.C. , E. Thorson: Health Communication in the New Media Landscape. 1st edition. Springer Publishing Company, 2008. ISBN: 978-0-826-10122-8.

Greenhalgh T .: How to Read a Paper: The Basic of Evidence Based Medicine. 3rd edition. Wiley-Blackwell, 2006. ISBN: 1-405-13976-5.

Basics of Research Methodology:

Trochim, WMK : Research methods knowledge base. URL: http://www.socialresearchmethods.net/kb/contents.php

WHO Regional Office for the Western Pacific: Health research methodology. A Guide for Training in Research Methods.
URL: http://www.wpro.who.int/NR/rdonlyres/3418F27F-60F0-42F3-9409-852F47E09DEF/0/Health_research_edited.pdf

Hungarian language III:

Halász, Renáta: Hogy tetszik lenni? Magyar orvosi szaknyelv kezdőknek. 1st ed. Szerzői kiadás, 2010. ISBN:978-963-06-9941-9.

Basics of Health Sciences:

Palastanga N., D. Field, R. Soames: Anatomy and Human Movement. Structure and Function. 6th edition. Butterworth Heinemann, Elsevier, 2012. ISBN: 0-7020-5308-2.

Moore K.L., A.F. Dalley, Anne MR Agur: Clinically Oriented Anatomy. 6th edition. Lippincott Williams & Wilkins, 2009. ISBN: 978-1-60547-652-0.

Fonyó, A.: Principles of Medical Physiology. 1st edition. Medicina, 2002. ISBN: 9-632-42726-2.

Applied Training Methods:

R. A. Robergs, S. J. Keteyian: Fundamentals of Exercise Physiology. 2nd edition. McGraw-Hill Publishing Co., 2003. ISBN: 0-071-21407-0.

J. K. Ehrman, P. M. Gordon, P. S. Visich, S. J. Keteyian: Clinical Exercise Physiology. 2nd edition. Human Kinetics Europe Ltd, 2009. ISBN: 0-736-06565-2.

Jack H. Wilmore, W. Larry Kenney: Physiology of Sport and Exercise. 4th edition. Human Kinetics Europe Ltd, 2007. ISBN: 0-071-21407-0.

W. D. McArdle, F. I. Katch, V. L. Katch: Exercise Physiology: Energy, Nutrition, and Human Performance. 6th edition. Lippincott Williams & Wilkins, 2006. ISBN: 0-781-74990-5.

Electro-, balneo-, hydro-, and climatotherapy:

Cameron M. H. : Physical Agents in Rehabilitation: From Research to Practice. 3rd edition. Saunders, 2008. ISBN: 1-416-03257-6.

Watson T.: Electrotherapy. Evidence Based Practice. 12th edition. Churchill Livingstone, 2008.ISBN:0-443-10179-5.

Robertson V., A. Ward, J. Low, A. Read: Electrotherapy Explained: Principles and Practice. 4th edition. Elsevier, 2006. ISBN: 0-7506-8843-7.

Hayes K. W., R. M. Nelson: Manual for Physical Agents . 5th edition. Prentice Hall Health, 2000. ISBN: 9780-1301-8733-8.

Gerontology:

Robnett R. H., W. C. Chop: Gerontology for the Health Care Professional. 2nd edition. Jones & Bartlett Publishers, 2009. ISBN: 9780-7637-5605-5.

Biochemistry:

Devlin, T. M.: Textbook of Biochemistry with Clinical Correlations. 7th edition. John Wiley & Sons, 2010. ISBN: 0-470-28173-1.

Berg J.M., J. L. Tymoczko, L. Stryer: Biochemistry. 7th edition. W. H. Freeman, 2010. ISBN: 1-4292-2936-5.

Harvey R.A., D.R. Ferrier: Lippincott's Illustrated Reviews: Biochemistry. 5th edition. Lippincott Williams and Wilkins, 2010. ISBN: 9-7816-0831-4126 .

Internal Medicine for Physiotherapists II:

Frownfelter D., E. Dean: Cardiovascular and Pulmonary Physical Therapy: Evidence and Practice. 5th edition. Mosby , 2012. ISBN: 0-323-02775-X.

Pryor J. A., A. S. Prasad: Physiotherapy for Respiratory and Cardiac Problems: Adults and Paediatrics (Physiotherapy Essentials). 4th edition. Churchill Livingstone, 2008. ISBN: 0-080-44985-9.

DeTurk W. E., L. P. Cahalin: Cardiovascular and Pulmonary Physical Therapy: An Evidence-based Approach. 2nd edition. McGraw-Hill Medical, 2010. ISBN: 0-0715-9812-X.

Kinesiology:

K. P. Levangie, C. C. Norkin: Joint Structure and Function. A Comprehensive Analysis. 4th edition. FA Davis Co, 2005. ISBN: 9780-8036-1191-7.

D. A. Neumann: Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. 2nd edition. Mosby Co, 2009. ISBN: 0-3230-3989-8.

H. M Clarkson: 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. 5th edition. Saunders, 2007. ISBN: 0-721-60571-0.

C.C. Norkin: Measurement of joint motion: A guide to goniometry. 4th edition. FA Davis Co, 2009. ISBN: 0-8036-2066-7.

I.A. Kapandji: The Physiology of the Joints, Volume 1: Upper Limb. 6th edition. Churchill Livingstone, 2007. ISBN: 978-0-443-10350-6.

I.A. Kapandji: The Physiology of the Joints, volume III (The Vertebral Column, Pelvic Girdle and Head). 6th edition. Churchill Livingstone, 2008.ISBN:0-7020-2959-9.

I.A. Kapandji: The Physiology of the Joints: The Lower Limb.6th edition. Churchill Livingstone, 2010. ISBN: 0-7020-3942-X.

Kissner C., L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Company, 2012. ISBN: 0-8036-2574-X.

Kinesiology Practice:

Kissner C., L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Company, 2012. ISBN: 0-8036-2574-X.

Mobilization-Manual Techniques I:

Kaltenborn F. M.: Manual Mobilization of the Joints: Vol I The Extremities. 6th edition. Orthopedic Physical Therapy Products, 2002. ISBN: 8-270-54043-9.

Kaltenborn F. M., O. Evjenth, T. B. Kaltenborg, D. Morgan, E. Wollowitz: Manual Mobilization of the Joints: The Spine Vol 2. 5th edition. Orthopedic Physical Therapy Products, 2009. ISBN: 8-270-54069-2.

Evjenth O., J. Hamberg: Muscle stretching in Manual Therapy. 6th edition. Alfta Rehab, 2003.

Adler S. S., D. Beckers, M. Buck: PNF in practice. 3rd edition. Springer, 2008. ISBN: 3-540-73901-7.

Clay J. H., D. M. Pounds: Basic Clinical Massage Therapy: Integrating Anatomy and Treatment. 3rd edition. Lippincott Williams&Wilkins,2008.ISBN: 0-7817-5677-4

Pathology:

Damjanov, I: Pathology for the Health Professions. 4th edition. Saunders, 2011. ISBN: 1-4377-1676-8.

Professional Hungarian Language I:

Halász, Renáta: Hogy tetszik lenni? Magyar orvosi szaknyelv kezdőknek. 1st edition. Szerzői kiadás, 2010. ISBN: 978-963-06-9941-9.

Respiratory rehabilitation practice:

Irwin S., J. S. Tecklin: Cardiopulmonary Physical Therapy: A Guide to Practice. 4th edition. Mosby, 2004. ISBN: 0-323-01840-8.

Frownfelter D., E. Dean: Cardiovascular and Pulmonary Physical Therapy: Evidence and Practice. 5th edition. Mosby , 2012. ISBN: 0-323-02775-X.

Internal Medicine for Physiotherapists I:

Longo,D., A. Fauci, D. Kasper, St. Hauser, J. Jameson, J. Loscalzo: Harrison's Principles of Internal Medicine. 18th edition. McGraw-Hill Medical,2011.ISBN:0-0717-4889-X.

McPhee St. J., M. Papadakis: Current Medical Diagnosis and Treatment. 50th edition. McGraw-Hill Incorporated, 2011. ISBN: 0-07-176372-4.

3rd year

Mobilization-Manual Techniques II:

Kaltenborn F. M., O. Evjenth, T. B. Kaltenborg, D. Morgan, E. Wollowitz: Manual Mobilization of the Joints: The Spine Vol 2. 5th edition. Orthopedic Physical Therapy Products, 2009. ISBN: 8-270-54069-2.

Kaltenborn F. M.: Manual Mobilization of the Joints: Vol I The Extremities. 6th edition. Orthopedic Physical Therapy Products, 2002. ISBN: 8-270-54043-9.

Adler S. S., D. Beckers, M. Buck: PNF in practice. 3rd edition. Springer, 2008. ISBN: 3-540-73901-7.

Riggs A.: Deep Tissue Massage, Revised: A Visual Guide to Techniques. 1st edition. North Atlantic Books, 2007. ISBN: 1-556-43650-5.

Dietetics:

Barker H. M.: Nutrition and Dietetics for Health Care.10th edition. Churchill Livingstone, 2002.ISBN:0-443-07021-0.

Webster-Gandy J., A. Madden, M. Holdsworth: Oxford Handbook of Nutrition and Dietetics. 3rd edition. Oxford University Press, 2006. ISBN: 0-198-56725-1.

Geissler C,. H. J. Powers: Fundamentals of Human Nutrition: For Students and Practitioners in the Health Sciences. 1st edition. Elsevier Health Sciences, 2009. ISBN: 0-443-06972-7.

Internal Medicine for Physiotherapists III:

Hillegass E., H. St. Sadowsky: Essentials of Cardiopulmonary Physical Therapy. 2nd edition. Saunders, 2001. ISBN: 0-721-67288-4.

Pryor J. A., A. S. Prasad: Physiotherapy for Respiratory and Cardiac Problems: Adults and Paediatrics (Physiotherapy Essentials). 4th edition. Churchill Livingstone, 2008. ISBN: 0-080-44985-9.

DeTurk W. E., L. P. Cahalin: Cardiovascular and Pulmonary Physical Therapy: An Evidence-based Approach. 2nd edition. McGraw-Hill Medical, 2010. ISBN: 0-0715-9812-X.

Orthopaedics for Physiotherapists I:

Szendrői M.: Orthopedics. 1st edition. Semmelweis, 2008. ISBN: 9789-6396-5693-2.

D. J. Magee: Orthopedic Physical Assessment. 5th edition. Elsevier Health Sciences, 2007. ISBN:978-0-7216-0571-5.

Rheumatology for Physiotherapists I:

Paget, St. A., Gibofsky, A., Beary, J. F., Pellicci, P.: Manual of Rheumatology and Outpatient Orthopedic Disorders. 4th edition. Lippincott Williams & Wilkins, 2000. ISBN: 0-7817-2442-2.

Porter, R. S.: The Merck Manual. 19th edition. Merck, 2011. ISBN: 0-9119-1019-0.

Traumatology and Intensive Therapy for Physiotherapists I:

Dandy D. J., D. J. Edwards: Essential Orthopaedics and Trauma. 5th edition. Churchill Livingstone, 2009. ISBN: 978-0-443-06718-1.

Brinker M. R.: Review of Orthopaedic Trauma. 1st edition. Saunders, 2001. ISBN: 0-721-68191-3.

Geriatry:

Guccione A. A.: Geriatric Physical Therapy. 3rd edition. Mosby, 2011. ISBN: 0-323-02948-5.

Oncology:

Haskell Ch., M.: Cancer treatment. 5th edition. Saunders, 2001. ISBN: 978-0-7216-7833-7.

Cavalli F., H. Høi Hansen, St. B. Kaye: Textbook of medical oncology. 4th edition. Informa Healthcare, 2009. ISBN: 0-415-47748-4.

Pharmacology:

Katzung, B. G.: Basic and Clinical Pharmacology. 11th ed. McGraw-Hill Medical, 2009. ISBN: 0-071-60405-7.

Trevor, A. J., Katzung B. G., Masters S. B. : Katzung & Trevor's Pharmacology: Examination & Board Review. 9th edition. McGraw-Hill Medical, 2010. ISBN: 0-071-70155-9.

Professional Hungarian Language II:

Halász, Renáta: Hogy tetszik lenni? Magyar orvosi szaknyelv kezdőknek. 1st edition. Szerzői kiadás, 2010. ISBN: 978-963-06-9941-9.

Preventive Medicine and Public Health I:

Donaldson, L.J., Scally, G.: Donaldsons' Essential Public Health. 3rd edition. Radcliffe Publishing Ltd, 2009. ISBN: 1-8461-9209-9.

Health care law:

Montgomery, J.: Health Care Law. 3rd edition. OUP Oxford, 2012. ISBN: 0-1992-7448-7.

Dimond, B. C. : Legal Aspects of Physiotherapy. 2nd edition. Wiley-Blackwell, 2009. ISBN:978-1-4051-7615-6.

Hall, M. A., Bobinski, M. A., Orentlicher, D.: Bioethics and Public Health Law. 2nd edition. Aspen Publishers, 2008. ISBN: 0-7355-7004-3.

WHO: Euro Observer: The Health Policy Bulletin of the European Observatory on Health Systems and policies. URL: http://www.euro.who.int/en/who-we-are/partners/observatory

Radiology and Diagnostic Imaging:

Sutton D.: Radiology And Imaging for Medical Students. 7th edition. Churchill Livingstone, 1998. ISBN: 0-443-03955-0.

Novelline, R. A., Squire, L. F.: Squire's Fundamentals of Radiology. 6th edition. Harvard University Press, 2004. ISBN: 0-674-01279-8.

Bushberg, J.T., Boone, J. M., Seibert, J. A., Leidholdt, E. M.: The Essential Physics of Medical Imaging.2nd edition. Williams & Wilkins, 2001. ISBN: 0-683-30118-7.

Rheumatology for Physiotherapists II:

David C., J. Lloyd: Rheumatological Physiotherapy. 1st edition. Mosby, 1999. ISBN: 0-723-42594-9.

Kissner C., L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Company, 2012. ISBN: 0-8036-2574-X.

Fauci A., C. Langford: Harrison's Rheumatology. 2nd edition. McGraw-Hill Professional, 2010. ISBN: 0-071-74143-7.

Professional Orientation II:

Greenhalgh T.: How to Read a Paper: The Basics of Evidence-based Medicine. 4th edition. BMJ Books, 2010. ISBN: 1-4443-3436-0.

Tools in Physiotherapy III - PNF in Practice:

Adler S. S, D. Beckers, M. Buck: PNF in practice: an illustrated guide. 3rd edition. Springer, 2008. ISBN: 3-540-73901-7.

Professional Hungarian Language III:

Halász, Renáta: Hogy tetszik lenni? Magyar orvosi szaknyelv kezdőknek. 1st edition. Szerzői kiadás, 2010. ISBN: 978-963-06-9941-9.

Preventive Medicine and Public Health II:

Donaldson, L.J., Scally, G.: Donaldsons' Essential Public Health. 3rd edition. Radcliffe Publishing Ltd, 2009. ISBN: 1-8461-9209-9.

Rothman, K.J. : Epidemiology: An Introduction. 2nd edition. Oxford University Press, 2012. ISBN: 0-1997-5455-1.

Porta, M: A Dictionary of Epidemiology. 5th edition. Oxford University Press, 2008. ISBN: 0-1953-1450-6.

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

Atkinson K., F. J. Coutts, A. M. Hassenkamp: Physiotherapy in Orthopedics: A Problem Solving Approach. 2nd edition. Churchill Livingstone, 2005. ISBN: 978-0-443-07406-6.

Magee D. J.: Orthopedic Physical Assessment. 5th edition. Saunders, 2008. ISBN: 0-721-60571-0.

Harvey, L.: Management of Spinal Cord Injuries: A Guide for Physiotherapists. 1st edition. Churchill Livingstone, 2008. ISBN: 978-0-443-06858-4 .

Evans R. C. : Illustrated Orthopedic Physical Assessment. 3rd edition. Mosby, 2008. ISBN: 0-323-04532-4.

Cook Ch.: Orthopedic Manual Therapy: An Evidence-Based Approach. 2nd edition. Prentice Hall, 2011. ISBN: 0-138-02173-2.

Sanders, R.: Core Knowledge in Orthopaedics: Trauma. 1st edition. Mosby, 2007. ISBN: 0-3230-3424-1.

Hoppenfeld, S. , Murthy, V. L.: Treatment and rehabilitation of fractures. 1st edition. Lippincott Williams & Wilkins, 2000. ISBN: 0-7817-2197-0.

Neurology for physiotherapists I:

Edwards S.: Neurological Physiotherapy – A Problem Solving Approach. 2nd edition. Churchill Livingstone, 2001. ISBN: 0-443-06440-7.

Davies P. M.: Steps to Follow: The Comprehensive Treatment of Patients with Hemiplegia. 2nd edition. Springer, 2004. ISBN: 3-540-60720-X.

Stokes M.: Physical Management for Neurological Conditions. 3rd edition. Churchill Livingstone, 2011. ISBN: 0-723-43560-X.

Infant Care and Paediatrics for Physiotherapists I:

Tecklin, J. S.: Pediatric Physical Therapy. 4th edition. Lippincott Williams and Wilkins, 2007. ISBN: 0-7817-5399-6.

Shepherd, R. B.: Physiotherapy in Pediatrics. 3rd edition. Butterworth-Heinemann Ltd, 1995. ISBN: 0-7506-0620-7.

Paediatrics Practice :

Tecklin, J. S.: Pediatric Physical Therapy. 4th edition. Lippincott Williams and Wilkins, 2007. ISBN: 0-7817-5399-6.

Internal Medicine Practice I:

Irwin S., J. S. Tecklin: Cardiopulmonary Physical Therapy: A Guide to Practice. 4th edition. Mosby, 2004. ISBN: 0-323-01840-8.

Obstetrics and Gynaecology for Physiotherapists:

Monga, A., Dobbs, St. P.: Gynaecology by Ten Teachers. 19th edition. Hodder Arnold, 2011. ISBN: 0-3409-8354-X.

Baker, Ph. N., Kenny, L.: Obstetrics by Ten Teachers. 19th edition. Hodder Arnold, 2011. ISBN: 0-3409-8353-1.

Bo, K., Berghmans, B., Morkved, S., Van Kampen, M.: Evidence-Based Physical Therapy for the Pelvic Floor: Bridging Science and Clinical Practice. 1st edition. Churchill Livingstone, 2007. ISBN: 0-4431-0146-9.

Haslam, J., Laycock, J.: Therapeutic Management of Incontinence and Pelvic Pain: Pelvic Organ Disorders. 2nd edition. Springer, 2007. ISBN: 1-8462-8661-1.

4th year

Traumatology and Intensive Therapy for Physiotherapists II:

MacKenzie C. F., P. C. Imle, N. Ciesla: Chest Physiotherapy in the Intensive Care Unit. 2nd edition. Williams & Wilkins, 2011. ISBN: 0-683-05329-9.

Marx J., Hockberger, R., Walls, R.: Rosen's Emergency Medicine - Concepts and Clinical Practice. 7th edition. Mosby, 2009. ISBN: 0-3230-5472-2.

Rehabilitation:

DeLisa J. A., B. M. Gans, N. E. Walsh: Physical Medicine and Rehabilitation. Principles and practice. 4th edition. Lippincott Williams & Wilkins, 2005. ISBN: 0-781-74130-0.

Barnes M., A. B. Ward: Textbook of Rehabilitation Medicine. 1st edition. Oxford University Press, 2000. ISBN: 0-192-62805-4.

Gutenbrunner C., Ward A.B., Chamberlain M.A.: White Book on Physical and Rehabilitation Medicine in Europe. Journal of Rehabilitation Medicine, Volume 39, Issue 45, 2007.

Psychosomatics:

Shoenberg, P.: Psychosomatics - The Uses of Psychotherapy. 1st edition. Palgrave Macmillan, 2007. ISBN: 0-333-94651-0.

Psychiatry for Physiotherapists:

Everett, T., Donaghy, M., Feaver, S.: Interventions for Mental Health: An Evidence Based Approach for Physiotherapists and Occupational Therapists. 2nd edition. Butterworth-Heinemann Ltd, 2003. ISBN: 0-7506-4965-8.

Kaplan, H. I., Sadock, B. J.: Synopsis of Psychiatry. 10th edition. Williams & Wilkins, 2010. ISBN: 1-4511-0864-8

Infant Care and Paediatrics for Physiotherapists II:

Tecklin, J. S. : Pediatric Physical Therapy. 4th edition. Lippincott Williams and Wilkins, 2007. ISBN: 0-7817-5399-6.

Economics:

Samuelson, P. A., Nordhaus, W. D.: Economics. McGraw-Hill, 2009. ISBN: 0-0735-1129-3.

Introduction to Management:

Begg, D., Ward, D.: Economics for Business. 3rd edition. McGraw-Hill Higher Education, 2009. ISBN: 0-0771-2473-1.

Nickels, W., McHugh, J., McHugh, S.: Understanding Business. 10th edition. McGraw-Hill/Irwin, 2012. ISBN: 0-0735-2459-X.

Neurology for physiotherapists II:

Raine, S., Meadows, L., Lynch-Ellerington, M. : Bobath Concept: Theory and Clinical Practice in Neurological Rehabilitation. 1st edition. Wiley-Blackwell, 2009. ISBN: 1-4051-7041-7.

O'Brien, M.: Aids to the Examination of the Peripheral Nervous System. 5th edition. Saunders Ltd., 2010. ISBN: 0-7020-3447-9.

Stokes M.: Physical Management for Neurological Conditions. 3rd edition. Churchill Livingstone, 2011. ISBN: 0-723-43560-X.

Davies P. M.: Steps to Follow: The Comprehensive Treatment of Patients with Hemiplegia. 2nd edition. Springer, 2004. ISBN: 3-540-60720-X.

Internal Medicine Practice II:

Irwin S., J. S. Tecklin: Cardiopulmonary Physical Therapy: A Guide to Practice. 4th edition. Mosby, 2004. ISBN: 0-323-01840-8.

DeTurk W. E., L. P. Cahalin: Cardiovascular and Pulmonary Physical Therapy: An Evidence-based Approach. 2nd edition. McGraw-Hill Medical, 2010. ISBN: 0-0715-9812-X.

Frownfelter D., E. Dean: Cardiovascular and Pulmonary Physical Therapy: Evidence and Practice. 5th edition. Mosby , 2012. ISBN: 0-323-02775-X.

Pryor J. A., A. S. Prasad: Physiotherapy for Respiratory and Cardiac Problems: Adults and Paediatrics (Physiotherapy Essentials). 4th edition. Churchill Livingstone, 2008. ISBN: 0-080-44985-9.

Neurology Practice:

Edwards S.: Neurological Physiotherapy – A Problem Solving Approach. 2nd edition. Churchill Livingstone, 2001. ISBN: 0-443-06440-7.

Davies P. M. : Steps to Follow: The Comprehensive Treatment of Patients with Hemiplegia. 2nd edition. Springer, 2004. ISBN: 3-540-60720-X.

Stokes M.: Physical Management for Neurological Conditions. 3rd edition. Churchill Livingstone, 2011. ISBN: 0-723-43560-X.

Fuller G.: Neurological Examination Made Easy. 4th edition. Churchill Livingstone, 2008.ISBN:0-443-06964-6.

Orthopaedics Practice:

Atkinson K., F. J. Coutts, A. M. Hassenkamp: Physiotherapy in Orthopedics: A Problem Solving Approach. 2nd edition. Churchill Livingstone, 2005. ISBN: 978-0-443-07406-6.
Evans R. C. : Illustrated Orthopedic Physical Assessment. 3rd edition. Mosby, 2008. ISBN: 0-323-04532-4.

Cook Ch.: Orthopedic Manual Therapy: An Evidence-Based Approach. 2nd edition. Prentice Hall, 2011. ISBN: 0-138-02173-2.

Magee D. J.: Orthopedic Physical Assessment. 5th edition. Saunders, 2008. ISBN: 0-721-60571-0.

Rehabilitation Practice:

Barnes M., A. B. Ward: Textbook of Rehabilitation Medicine. 1st edition. Oxford University Press, 2000. ISBN: 0-192-62805-4.

Gutenbrunner C., Ward A.B., Chamberlain M.A.: White Book on Physical and Rehabilitation Medicine in Europe. Journal of Rehabilitation Medicine, Volume 39, Issue 45, 2007.

DeLisa J. A., B. M. Gans, N. E. Walsh: Physical Medicine and Rehabilitation. Principles and practice. 4th edition. Lippincott Williams & Wilkins, 2005. ISBN: 0-781-74130-0.

Rheumatology Practice:

David C., J. Lloyd: Rheumatological Physiotherapy. 1st edition. Mosby, 1999. ISBN: 0-723-42594-9.

Dziedzic K., A. Hammond : Evidence-Based Practice for Physiotherapists and Occupational Therapists. 1st edition. Churchill Livingstone, 2010. ISBN: 0-443-06934-4.

Kissner C., L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Company, 2012. ISBN: 0-8036-2574-X.

Fauci A., C. Langford: Harrison's Rheumatology. 2nd edition. McGraw-Hill Professional, 2010. ISBN: 0-071-74143-7.

Traumatology Practice:

David Ip.: Orthopedic Traumatology - A Resident's Guide. 1st edition. Springer, 2006. ISBN: 3-540-29065-6.

Sanders, R.: Core Knowledge in Orthopaedics: Trauma.1st edition. Mosby, 2007. ISBN: 0-3230-3424-1.

Hoppenfeld, S. , Murthy, V. L.: Treatment and rehabilitation of fractures. 1st edition. Lippincott Williams & Wilkins, 2000. ISBN: 0-7817-2197-0.

CHAPTER 13
TITLES OF THESES

Department of Physiotherapy

1. Title: Cardiorespiratory parameters of university students – survey
   Tutor: Julianna Cseri M.D., C.Sc.
2. Title: Regeneration of skeletal muscle fibres – effects of physical activity (review)
   Tutor: Julianna Cseri M.D., C.Sc.
3. Title: Knowledge of medical students about physiotherapy – survey and improvement
   Tutor: Julianna Cseri M.D., Ph.D., C.Sc.
4. Title: Improvement of proprioception by using instable instruments
   Tutor: Ilona Veres-Balajti M.Sc., Ph.D.
5. Title: Role of physiotherapy in prevention
   Tutor: Ilona Veres-Balajti M.Sc., Ph.D.
6. Title: Ivestigation of the efficiency of a randomized, placebo-controlled ultra sound treatment
   Tutor: Roberto Gomez M.D.
7. Title: Physiotherapy in degenerative joint disorders
   Tutor: Roberto Gomez M.D.
8. Title: Physiotherapy of adhesive capsulitis in diabetes mellitus
   Tutor: Roberto Gomez M.D.
9. Title: Physiotherapy in ankylosing spondilitis
   Tutor: Zsuzsanna Némethné Gyurcsik M.Sc.

Department of Physical Education

1. Title: Effects of Pilates exercises on the physical abilities
   Tutor: Katalin Nagy Varga M.Sc.

Department of Traumatology and Hand Surgery

1. Title: Postoperative physiotherapy of the knee fractures
   Tutor: Károly Fekete M.D., Ph.D.
2. Title: Treatment of open fractures, role of the physiotherapists in the postoperative interventions
   Tutor: Ferenc Urbán M.D.

Department of Internal Medicine

1. Title: Improvement of quality of life in polymyositis and dermatomyositis patients by physiotherapy
   Tutor: Katalin Dankó M.D.,Ph.D.,D.Sc.

Division of Rheumatology

1. Title: Role of physiotherapy in the treatment of idiopathic inflammatory myopathy (review)
   Tutor: Andrea Váncsa M.D., Ph.D.