BULLETIN

UNIVERSITY OF DEBRECEN

ACADEMIC YEAR 2015/2016

FACULTY OF PUBLIC HEALTH

BSc in Physiotherapy

COORDINATING CENTER FOR INTERNATIONAL EDUCATION

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CHAPTER 1
INTRODUCTION

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

In the past two decades both medical science and health care have entered a new era: the medical science of the 21st century. Molecular medicine is 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 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 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 University of Debrecen is already internationally recognized in the fields of both basic and clinical research, and the clinicians and scientists of the University are determined to preserve this achievement. Special attention is given to facilitate and support the close co-operation of researchers representing basic science and clinical research, and/or interdisciplinary studies.

With respect to therapeutic practice, the main objective is to provide high quality, effective, up to date and much devoted health care to all members of 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 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, 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 2000.

Education at the University of Debrecen

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

The Hungarian Government gives major priorities to the higher education of health sciences in its higher education policy. One of these priorities is to increase the ratio of college level training forms within the Hungarian higher education system. The governmental policy wishes to implement conditions in which the whole health science education system is built vertically from the lowest (post-secondary or certificate) to the highest (PhD-training) levels. In fact, this governmental policy was the reason behind the establishment of the Health Science Education Center within the Federation of Debrecen Universities (DESZ), based partially on the intellectual resources of the University of Debrecen. The new programs – with specialized training for paramedics – helps 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 Medicine or Dentistry programs.

International students must pass an entrance exam 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. Entrance for certain courses of the Health College is also possible on the basis of a special evaluation (scoring) and an entrance interview.

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 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 medicine and dentistry programs, there are several other courses also available, including molecular biology. The various Health College courses include more and more new curricula.

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

Medical Activity at the Faculty of Medicine

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

The Kenézy Gyula County Hospital (with some 1,400 beds) is strongly affiliated with the University of Debrecen and plays an important role in teaching the practical aspects of medicine. There are also close contacts between the University and other health care institutions, mainly (but not exclusively) in its closer region. The University of Debrecen has a Teaching Hospital Network consisting of 19 hospitals in Israel, Japan and South Korea.

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

Scientific Research at the Faculty of Medicine

Scientific research is performed both at the departments for basic sciences and at the laboratories of clinical departments. The faculty members publish about 600 scientific papers every year in international scientific journals. According to the scientometric data, the Faculty 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).

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. 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, 5 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.

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

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

CHAPTER 2
ORGANISATION STRUCTURE

RECTOR OF THE UNIVERSITY OF DEBRECEN	
Rector	Zoltán Szilvássy M.D., Ph.D., D.Sc.
Address	4032 Debrecen, Egyetem tér 1.
Phone	+36-52-412-060
Phone/fax	+36-52-416-490
E-mail	rector@unideb.hu

COORDINATING CENTER FOR INTERNATIONAL EDUCATION	
Director	Attila Jenei M.Sc., Ph.D.
Address	4032, Debrecen, Nagyerdei krt. 94.
Phone	+36-52-258-058
Fax	+36-52-414-013
E-mail	info@edu.unideb.hu

FACULTY OF MEDICINE	
Dean	László Mátyus M.D., Ph.D., D.Sc.
Address	4032, Debrecen, Nagyerdei krt. 98.
Phone	+36-52-258-086
Fax	+36-52-255-150
E-mail	dekan@med.unideb.hu
Vice Dean of General Affairs	Zoltán Szekanecz, M.D., Ph.D., D.Sc.
Address	4032, Debrecen, Nagyerdei krt. 98.
Phone	+36-52-255-091
Fax	+36-52-255-091
E-mail	dekan@med.unideb.hu
Vice-Dean for Educational Affairs	Zoltán Papp M.D., Ph.D., D.Sc.
Address	4032, Debrecen, Nagyerdei krt. 98.
Phone	+36-52-255-978
Fax	+36-52-255-978
E-mail	dekan@med.unideb.hu

Vice-Dean of Scientific Affairs	László Virág M.D., Ph.D., D.Sc.
Address	4032, Debrecen, Nagyerdei krt. 98.
Phone	+36-52-417-345
Fax	+36-52-412-566
E-mail	dekan@med.unideb.hu

Dean's advisor	Endre Nagy M.D.,Ph.D.,D.Sc.
Address	4032, Debrecen, Nagyerdei krt. 98.
Phone	+36-52-417-717/54166
Fax	+36-52-419-807
E-mail	dekan@med.unideb.hu

DEAN'S OFFICE OF THE FACULTY OF MEDICINE

Head of Directory Office	Katalin Juhász M.A.
Address	4032, Debrecen, Nagyerdei krt. 98.
Phone/Fax	+36-52-258-085, +36-52-255-150
E-mail	kjuhasz@edu.unideb.hu

REGISTRAR'S OFFICE

Head of Registrar's Office	Csilla Kerékgyártó M.D.
Address	4032, Debrecen, Nagyerdei krt. 94.
Phone/Fax	+36-52-258-001
E-mail	kerekgy@med.unideb.hu

FACULTY OF DENTISTRY

Dean	Csaba Hegedűs M.D., L.D.S., Ph.D.
Address	4032 Debrecen, Nagyerdei krt. 98.
Phone/Fax	+36-52-255-208
E-mail	hegedus.csaba.prof@dental.unideb.hu

Vice-Dean for Educational Affairs	István Tornai M.D.,Ph.D.
Address	4032 Debrecen, Nagyerdei krt. 98.
Phone/Fax	+36-52-255-208
E-mail	itornai@med.unideb.hu

Vice-Dean for General Affairs	Pál Redl M.D.,L.D.S.,Ph.D.
Address	4032 Debrecen, Nagyerdei krt. 98.
Phone/Fax	+36-52-255-208
E-mail	redl.pal@dental.unideb.hu

FACULTY OF PHARMACY

Dean	Miklós Vecsernyés Pharm.D.,Ph.D.
Address	4032 Debrecen, Nagyerdei krt. 98.
Phone/Fax	+36-52-521-900/22456
E-mail	vecsernyes.miklos@pharm.unideb.hu

Vice-Dean	Gábor Halmos Pharm.D.,Ph.D.
Address	4032 Debrecen, Nagyerdei krt. 98.
Phone/Fax	+36-52-411-600/55292
E-mail	halmos.gabor@pharm.unideb.hu

FACULTY OF PUBLIC HEALTH

Dean	Margit Balázs MSc.,Ph.D.,D.Sc.
Address	4028 Debrecen, Kassai út 26/b.
Phone	+36-52-460-194
Fax	+36-52-460-195
E-mail	balazs.margit@sph.unideb.hu

Vice-Dean	Attila Bánfalvi M.A., Ph.D.
Address	4032, Debrecen, Móricz Zsigmond. krt. 22.
Phone	+36-52-411-600
Fax	+36-52-255-487
E-mail	banfalvi.attila@sph.unideb.hu

FACULTY OF HEALTH

Dean	Imre Semsei, D.Sc.
Address	4400 Nyíregyháza, Sóstói u. 2-4.
Phone	+36-42-598-235
Fax	+36-42-408-656
E-mail	dekan@foh.unideb.hu

Vice-Dean for Scientific Affairs	János Kiss Ph.D.
Address	4400 Nyíregyháza, Sóstói út 2-4.
Phone	+36-42-598-235
Fax	+36-42-408-656
E-mail	kiss.janos@foh.unideb.hu

Vice-Dean for Educational Affairs	Attila Sárváry Ph.D.
Address	4400 Nyíregyháza, Sóstói út 2-4.
Phone	+36-42-598-235
Fax	+36-42-408-656
E-mail	sarvary.attila@foh.unideb.hu

Vice-Dean for General and Development Affairs	Gergely Fábián Ph.D.
Address	4400 Nyíregyháza, Sóstói út 2-4.
Phone	+36-42-598-235
Fax	+36-42-408-656
E-mail	fabian.gergely@csello.hu

MEDICAL STUDENT ASSOCIATION

Address	4032 Debrecen, Egyetem tér 1. Kossuth Lajos II. Kollégium 2A06
Phone	+36-52-512-700/72855
Fax	+36-52-255-028
Internet	http://dehok.unideb.hu
E-mail	pkorosp@gmail.com

KENÉZY LIFE SCIENCES LIBRARY

Address	4032 Debrecen, Egyetem tér 1.
Phone/Fax	+36-52-518-610 , +36-52-518-605
E-mail	kenezy@lib.unideb.hu
Internet	http://kenezy.lib.unideb.hu

CHAPTER 3
ADMINISTRATIVE UNITS

EDUCATIONAL ORGANIZATIONAL OFFICE OF FACULTY OF PUBLIC HEALTH

Kassai str. 26/b, Debrecen, 4028
Telephone: 52-460-190/77408
E-mail: belgyar.zsuzsa@sph.unideb.hu, Web: http://nk.unideb.hu

Head	Ms. Zsuzsa Nagy-Belgyár M.A.
Education Officer, Contact Person	Róbert Bata M.A.
	Ms. Andrea Debreczeni M.A.
	Ms. Zsuzsa Flóra Péter M.A.

COORDINATING CENTER FOR INTERNATIONAL EDUCATION

Nagyerdei krt. 94., Debrecen, 4032
Telephone: +36-52-258-058 Fax: +36-52-414-013
E-mail: info@edu.unideb.hu, Web: http://www.edu.dote.hu

Director	Attila Jenei M.Sc., Ph.D.
Manager Assistant	Ms. Beáta Kozsla-Dobi
Contract&Marketing Coordinator	Ábrahám Varga
Financial Officer	Ms. Rita Kovács
Agent Coordinator	József Harmati
English Program Officer	Ms. Adrienn Gagna-Szakó (Admissions, BMC, US Loans, Wyckoff HMC Applications)
	Ms. Anett Galvácsi (Tuition fee, Certificates, Money Back)
	Ms. Katalin Györe (Admissions, Visa issues, BMC, Stipendium coordinator)
	Ms. Krisztina Németh (Bulletin)
	Ms. Enikő Sallai (Tuition fee, Health Insurance)
IT Specialist	Imre Szűcs

CHAPTER 4
DEPARTMENTS OF THE FACULTY OF PUBLIC HEALTH

DEPARTMENT OF BEHAVIOURAL SCIENCES

Móricz Zs. Krt. 22., Debrecen, 4032
Telephone: +36-52-255-594 Fax: +36-52-255-723
Web: http://mti.dote.hu

Associate Professor, Head of Department	Ms.	Karolina Kósa M.D., M.Sc., Ph.D.
Associate Professor, Head of Division of Clinical And Health Psychology	Ms.	Ildikó Kuritár Szabó M.A., Ph.D.
Associate Professor, Head of Division of Humanities For Health Care		Attila Bánfalvi M.A., Ph.D., C.Sc.
Professor Emeritus		Péter Molnár M.D., D.Sc.
Associate Professor		Antal Bugán M.A., Ph.D.
	Ms.	Beáta Erika Nagy M.A., Ph.D.
Assistant Professor	Ms.	Mónika Andrejkovics M.A., Ph.D.
		Péter Kakuk M.A., Ph.D.
		Roland Tisljár M.A., Ph.D.
Assistant Lecturer		János Kristóf Bodnár M.A., Ph.D.
		Sándor Kőmüves M.A., Ph.D.
	Ms.	Judit Molnár M.A., Ph.D.
	Ms.	Eszter Tisljár - Szabó M.A., Ph.D.
Psychologist	Ms.	Beáta Kovács-Tóth M.A.
Invited Lecturer		Bence Döbrőssy M.A.
Other Graduated Staff Member	Ms.	Zsuzsa Kovács Török M.A., Ph.D.
Intern	Ms.	Bernadett Bodor M.Sc.
	Ms.	Katalin Mária Dallos M.Sc.
	Ms.	Márta Erdei M.Sc.
	Ms.	Bernadett Hidegh M.Sc.
	Ms.	Éva Knapek M.Sc.
	Ms.	Katalin Merza M.A.
	Ms.	Erika Nagy M.Sc.
	Ms.	Eszter Anna Rácz M.Sc.
PhD Student	Ms.	Heléna Barkász
	Ms.	Amanda Illés M.Sc.
	Ms.	Orsolya Micskei M.Sc.

	Ms.	Ella Molnár M.A.
	Ms.	Brigitta Munkácsi M.Sc.
	Ms.	Anikó Nagy
		Gellért Raffai M.Sc.
Academic Advisor	Ms.	Mónika Andrejkovics M.A., Ph.D. (4th year, Behavioural Medicine, Behavioural Science Final Exam)
		Attila Bánfalvi M.A., Ph.D., C.Sc. (3rd year, Medical Anthropology, Medical Sociology)
		Péter Kakuk M.A., Ph.D. (4th year, Bioethics)
	Ms.	Judit Molnár M.A., Ph.D. (3rd year, Medical Psychology, 5th year, Pharmaceutal Psyhology)
		Roland Tisljár M.A., Ph.D. (1st year, Basics of Behavioural Sciences, Communication)

DEPARTMENT OF FAMILY AND OCCUPATIONAL MEDICINE

Móricz Zs. Krt. 22., Debrecen, 4032
Telephone: +36-52-25-52-52 Fax: +36-52-25-52-53
E-mail: csotanszek@sph.unideb.hu, Web: http://www.fam.med.unideb.hu www.nk.unideb.com

Full Professor, Head of Department		Imre Rurik M.D., M.Sc., Ph.D., D.Sc.
Professor Emeritus		István Ilyés M.D., M.Sc., Ph.D.
Assistant Professor		Zoltán part time Jancsó M.D., Ph.D.
Assistant Lecturer		László Róbert Kolozsvári M.D., Ph.D. (part time)
	Ms.	Anna Nánási M.D.
	Ms.	Judit Szidor M.D.
	Ms.	Hajnalka Tamás M.D.
	Ms.	Tímea Ungvári M.Sc.
Clinical Specialist	Ms.	Emőke Lengyel M.D.
	Ms.	Izabella Szilágyi M.D.
	Ms.	Erzsébet (part time) Tóth M.D.
Other Graduated Staff Member		István Erdei M.D.
		János Hintalan M.D.

	Ms.	Eszter Kovács M.D.
	Ms.	Hajnalka Márton M.D.
		Sándor Palla M.D.
		Csaba Sárkány M.D.
		Attila Simay M.D., Ph.D. (Hon. Associate Professor)
		Péter Szerze M.D.
	Ms.	Margit Szövetes M.D.

DEPARTMENT OF HEALTH MANAGEMENT AND QUALITY ASSURANCE

Nagyerdei krt. 98., Debrecen, 4032
Telephone: 06-52-255-052
E-mail: lepp.anett@med.unideb.hu, Web: http://www.emmt.unideb.hu

Associate Professor, Head of Department	Ms.	Klára Bíró D.M.D., Ph.D.
Associate Professor	Ms.	Judit Zsuga M.D., Ph.D.
Assistant Lecturer		Gábor Bányai-Márton J.D.
		Zsolt (part time) Nádházy J.D.
Assistant	Ms.	Anett Lepp
Strategic Advisor	Ms.	Judit Balogh M.Sc.
		Csaba Papp M.D., M.Sc.
PhD Student	Ms.	Klára Boruzs MBA

DEPARTMENT OF HYGIENE AND INFECTION CONTROL

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-795 Fax: +36-52-255-801
E-mail: orosip@med.unideb.hu, Web: http://www.nk.unideb.hu

Associate Professor, Head of Department	Ms.	Piroska Orosi M.D., Ph.D.
Staff Member	Ms.	Ágnes Borbély M.D.
	Ms.	Judit Kecskés

DEPARTMENT OF PHYSIOTHERAPY

Kassai str. 26., Debrecen, 4028
Telephone: 36-52-512-732 Fax: 36-52-512-732
E-mail: cseri.julianna@sph.unideb.hu, Web: http://nk.unideb.hu

Associate Professor, Head of Department	Ms.	Ilona Veres-Balajti M.Sc., Ph.D.
College Professor, Coordinator of BSc in Physiotherapy Program	Ms.	Julianna Cseri M.D., Ph.D., C.Sc.
Assistant Professor		Balázs Lukács M.Sc., Ph.D.
	Ms.	Zsuzsanna Némethné Gyurcsik M.Sc., Ph.D.
	Ms.	Andrea Váncsa M.D., Ph.D.
Assistant Lecturer	Ms.	Zsuzsa Lábiscsák-Erdélyi M.Sc.
	Ms.	Judit Pálinkás M.Sc.
Invited Lecturer	Ms.	Katalin Papp Ph.D.,M.Sc.
		Imre Semsei M.D., Ph.D., D.Sc.
	Ms.	Éva Szabó M.D.
		Zoltán Szentkereszty M.D.
	Ms.	Adrienne Tóthmartinez M.D.
Practice Teacher	Ms.	Éva Csepregi M.Sc.
Instructor	Ms.	Éva Anett Csuhai
	Ms.	Hajnalka Petrika M.Sc.
Academic Advisor	Ms.	Zsuzsanna Némethné Gyurcsik M.Sc., Ph.D.

DEPARTMENT OF PREVENTIVE MEDICINE

Kassai út 26/b, Debrecen, 4028
Telephone: +36-52-417-267 Fax: +36-52-417-267 Web: http://nk.unideb.hu

Full Professor, Head of Department	Ms.	Róza Ádány M.D., Ph.D., D.Sc.
Associate Professor, Head of Division		István Kárpáti M.D., Ph.D.
Full professor, Head of Biomarker Analysis Division	Ms.	Margit Balázs M.Sc., Ph.D., D.Sc.
Associate Professor, Head of Biostatistics and Epidemiology Division		János Sándor M.D., Ph.D.
Associate Professor, Head of Health Promotion Division	Ms.	Karolina Kósa M.D., M.Sc., Ph.D.
Associate Professor, Head of Dep. of Hygiene and Infection Control	Ms.	Piroska Orosi M.D., Ph.D.

Professor Emeritus		Pál Kertai M.D., Ph.D., D.Sc.
Associate Professor		Balázs Ádám M.D., M.Sc., Ph.D.
	Ms.	Helga Bárdos M.D., M.Sc., Ph.D.
		Sándor Gődény M.D., Ph.D.
		Sándor Szűcs C.Sc.
Assistant Professor		Ervin Árnyas M.Sc., Ph.D.
	Ms.	Szilvia Fiatal M.D., Ph.D.
	Ms.	Orsolya Varga M.D., Ph.D.
Assistant Lecturer	Ms.	Éva Bíró M.D.
		Tibor Jenei
		Tamás Köbling M.D.
		Attila Csaba Nagy M.D.
		Károly Nagy M.D.
		László Pál M.D.
		Gábor Rácz M.D.
Resident	Ms.	Judit Diószegi M.D.
		Gergely Fürjes M.D.
	Ms.	Márta Füzi M.D.
	Ms.	Dóra Kölesné Dezső M.D.
Invited Lecturer		György Juhász M.D.
		József Legoza M.D.
Hungarian Academy of Sciences University of Debrecen Public Health Research Group	Ms.	Szilvia Ecsedi M.Sc.
Fellow		Rühl Ralph M.D.
Research Assistant	Ms.	Tímea Kiss M.Sc.
	Ms.	Viktória Koroknai M.Sc.
		Péter Pikó M.Sc.
		István Szász M.Sc.
PhD Student	Ms.	Orsolya Csenteri M.Sc.
		Viktor Dombrádi jr M.Sc.
		Esafiogho Peter Eseroghene M.Sc.
	Ms.	Beáta Soltész M.Sc.
		Ferenc Vincze M.Sc.
Academic Advisor		Sándor Szűcs C.Sc.
	Ms.	Szilvia Fiatal M.D., Ph.D.

Division of Public Health Medicine
Nagyerdei krt. 98., Debrecen, 4012

Associate Professor, Head of Division	István Kárpáti M.D., Ph.D.
Assistant Lecturer	Tamás Köbling M.D.

SCHOOL OF PUBLIC HEALTH
Kassai út 26/b, Debrecen, 4028
Telephone: +36-52-417-267 Fax: +36-52-460-195
Web: http://nk.unideb.hu

Director	Ms. Róza Ádány M.D., Ph.D., D.Sc.
Invited Lecturer	Ms. Katalin Barabás M.D., Ph.D.
	Dániel Bereczki M.D., Ph.D., D.Sc.
	Illés Dési M.D., Ph.D., D.Sc.
	Ms. Katalin Felvinczi M.A., Ph.D.
	Ms. Mária Fodor M.D.,Ph.D.
	Iván Forgács M.D., Ph.D., D.Sc.
	Péter Józan M.D., Ph.D.
	Lajos Kovács M.D., M.Sc.
	György Kozmann M.D.
	György Köteles M.D., Ph.D., D.Sc.
	László Nagymajtényi M.D., Ph.D.
	Ms. Éva Orosz M.A., Ph.D.
	Ms. Anna Páldy M.D., Ph.D.
	Miklós Szócska M.D.
	Zoltán Tasnádi M.Sc.
	József Topár M.Sc.
	György Ungváry M.D., Ph.D., D.Sc.

CHAPTER 5
FACULTY OF MEDICINE - DEPARTMENTS OF BASIC SCIENCES

DEPARTMENT OF ANATOMY, HISTOLOGY AND EMBRYOLOGY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-567 Fax: +36-52-255-155
Web: http://www.anat.dote.hu

Full Professor, Head of Department		Miklós Antal M.D., Ph.D., D.Sc.
Full Professor, Head of Oral Anatomy Division	Ms.	Klára Matesz M.D.,Ph.D.,D.Sc.
Professor Emeritus		István Földes M.D., Ph.D., D.Sc.
		László Módis M.D., Ph.D., D.Sc.
		György Székely M.D., Ph.D., D.Sc., M.H.A.Sc.
Associate Professor		András Birinyi M.Sc., Ph.D.
		Szabolcs Felszeghy Ph.D., D.D.S.
		Zoltán Kisvárday M.Sc., Ph.D., D.Sc.
		Ervin Wolf M.Sc., Ph.D.
	Ms.	Róza Zákány M.D., Ph.D.
Assistant Professor	Ms.	Krisztina Holló M.Sc., Ph.D.
		Tamás Juhász M.Sc., Ph.D.
		Csaba Matta M.Sc., Ph.D.
		Zoltán Mészár M.Sc., Ph.D.
Postgraduate Lecturer	Ms.	Zsófia Antal M.D.
	Ms.	Anita Balázs M.Sc., Ph.D.
		Botond Gaál M.Sc.
	Ms.	Dóra Gali-Györkei M.Sc.
	Ms.	Krisztina Hegedűs M.Sc.
		Zoltán Hegyi M.Sc., Ph.D.
	Ms.	Éva Katona M.D., Ph.D.
	Ms.	Szilvia Kecskés M.Sc.
	Ms.	Lívia Kicska M.Sc.
	Ms.	Nikoletta Gréta Kis M.Sc.
	Ms.	Ildikó Papp M.Sc., Ph.D.
	Ms.	Éva Rácz M.Sc., Ph.D.

	Ms.	Zsanett Sólyom M.Sc.
	Ms.	Csilla Somogyi M.Sc.
	Ms.	Mónika Szakadát M.Sc.
		Roland Takács M.Sc.
	Ms.	Ildikó Wéber M.Sc., Ph.D.
Junior Scientific Officer	Ms.	Nóra Dobrosi M.Sc.
Invited Lecturer		Gary Kish M.D.
Course Director		Szabolcs Felszeghy Ph.D., D.D.S. (Macroscopic anatomy for students of dentistry)
		Tamás Juhász M.Sc., Ph.D. (Macroscopic anatomy for students of general medicine)
		Zoltán Kisvárday M.Sc., Ph.D., D.Sc. (Neurobiology)
		Ervin Wolf M.Sc., Ph.D. (Histology and Embryology)
PhD Student	Ms.	Klaudia Dócs M.Sc.
		László Ducza M.Sc.
	Ms.	Javdani Fariba M.D.
		Tibor Hajdú M.D.
	Ms.	Andrea Hunyadi M.Sc.
		Tamás Papp M.D.
		Attila Somogyi M.D.
		Mohit Srivastava M.Sc.
	Ms.	Rita Varga M.Sc.
Academic Advisor for 1st year medical and dental students	Ms.	Mónika Szakadát M.Sc.
Academic Advisor for 2nd year medical and dental students	Ms.	Gréta Kis M.Sc.

DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-416-432 Fax: +36-52-314-989
E-mail: tokes@med.unideb.hu, Web: http://bmbi.med.unideb.hu

Full Professor, Head of Department		József Tőzsér M.Sc., Ph.D., D.Sc.
Head of Dental Biochemistry Division	Ms.	Zsuzsa Szondy M.D., Ph.D., D.Sc.
Full Professor		László Fésüs M.D., Ph.D., D.Sc., M.H.A.Sc.

		László Nagy M.D., Ph.D., M.H.A.Sc.
Associate Professor		Zoltán Balajthy M.Sc., Ph.D.
	Ms.	Mónika Fuxreiter M.Sc., Ph.D., D.Sc.
	Ms.	Réka Révészné Tóth M.Sc., Ph.D.
		István Szatmári M.Sc., Ph.D.
Assistant Professor		Bálint Bálint L. M.D., Ph.D.
	Ms.	Éva Csősz M.Sc., Ph.D.
		Róbert Király M.Sc., Ph.D.
		Zsolt Sarang M.Sc., Ph.D.
	Ms.	Beáta Scholtz M.Sc., Ph.D.
		Lóránt Székvölgyi M.Sc., Ph.D.
		Lajos Széles M.Sc., Ph.D.
	Ms.	Szilvia Tőkés M.Sc., Ph.D.
Senior Research Fellow		Endre Barta M.Sc., Ph.D.
		András Mádi M.Sc., Ph.D.
Research Fellow		Máté Demény M.D.,Ph.D.
		Zsolt Keresztessy M.Sc., Ph.D.
		Márton Miskei M.Sc., Ph.D.
		Szilárd Póliska M.Sc., Ph.D.
	Ms.	Mónika Szentandrássyné Gönczi M.Sc., Ph.D.
		Tamás Varga M.Sc., Ph.D.
Junior Research Fellow	Ms.	Beáta Bartáné Tóth M.Sc., Ph.D.
	Ms.	Beáta Kiss M.Sc.
	Ms.	Krisztina Köröskényi M.Sc., Ph.D.
		Endre Károly Kristóf M.D.
		Mohamed Faisal Mahdi M.D.
	Ms.	Krisztina Matúz M.Sc.
		János Mótyán M.Sc., Ph.D.
		Gergely Nagy M.Sc.
		Attila Pap M.Sc.
	Ms.	Éva Péntek-Garabuczi M.Sc.
		Ferenc Tóth M.Sc.
Biologist	Ms.	Tímea Cseh M.Sc.
	Ms.	Emília Horváthné Simó M.Sc.

	Tamás Kerekes M.Sc.
	Ms. Erzsébet Mátyás M.Sc.
	Ms. Éva Nagy M.Sc.
PhD Student	Ms. Dóra Bojcsuk M.Sc.
	Pál Botó M.Sc.
	Ms. Mária Csumita M.Sc.
	Erik Czipa M.Sc.
	Ms. Katalin Dánielné Sándor M.Sc.
	Ms. Eszter Deák M.D.
	Ms. Ergulen Elvan M.Sc.
	Ms. Edina Erdős M.Sc.
	Ms. Lívia Gazda M.Sc.
	Ms. Mária Golda M.Sc.
	László Halász M.Sc.
	Szabolcs Hetey M.Sc.
	Attila Horváth M.Sc.
	József Horváth M.Sc.
	Ms. Monroy Ixchelt Cuaranta M.Sc.
	Ms. Bernadett Jakob M.Sc.
	Károly Jambrovics M.Sc.
	Gergely Joós M.D.
	Gergő Kalló M.Sc.
	Norbert Kassay M.Sc.
	Thangarajan Kiruphagaran M.Sc.
	Ms. Katalin Nagy M.D.
	Ms. Lilla Ozgyn M.Sc.
	Andreas Patsalos M.Sc.
	Ms. Rashmi Rashmi M.Sc.
	Ms. Éva Sivadó M.Sc.
	András Szántó M.Sc.
	Ms. Mária Szatmári Tóth M.Sc.
	Ms. Erika Takács M.Sc.
Academic Advisor	Ms. Szilvia Tőkés M.Sc., Ph.D. (E-mail: tokessz@dote.hu, Ext.:64439)

DEPARTMENT OF BIOPHYSICS AND CELL BIOLOGY

Egyetem tér 1. , Debrecen, 4032
Telephone: +36-52-412-623 Fax: +36-52-532-201
E-mail: biophys@med.unideb.hu, Web: http://biophys.med.unideb.hu

Full Professor, Head of Department		János Szöllősi M.Sc., Ph.D., D.Sc.
Full Professor		György Vereb M.D., Ph.D., D.Sc.
Professor Emeritus		Sándor Damjanovich M.D., Ph.D., D.Sc., M.H.A.Sc.
Associate Professor		Zsolt Bacsó M.D., Ph.D.
		Attila Jenei M.Sc., Ph.D.
Assistant Professor		Zsolt Fazekas M.Sc., Ph.D.
		Péter Hajdu M.Sc., Ph.D.
Assistant Lecturer	Ms.	Ágnes Tóth M.Sc., Ph.D.
Research Fellow	Ms.	Beáta Mészáros M.Sc., Ph.D.
	Ms.	Ágnes Nagyné Dr. Szabó M.Sc., Ph.D.
		Pál Pap M.Sc., Ph.D.
	Ms.	Tímea Váradi M.Sc., Ph.D.
	Ms.	Barbara Zsebik M.Sc., Ph.D.
Junior Research Fellow		Gyula Gábor Batta M.Sc., Ph.D.
		László Ujlaky-Nagy M.D.
PhD Student		András Balajthy M.D.
	Ms.	Ágota Csóti M.Sc.
	Ms.	Erfaneh Firouzi Niaki D.Pharm.
		László Imre M.Sc.
		Tamás Kovács M.D.
		Gábor Mocsár M.Sc.
		Péter Nánási M.D.
		Zoltán Dénes Pethő M.D.
		István Rebenku M.Sc.
		Gábor Szalóki M.Sc.
	Ms.	Nikoletta Szalóki M.Sc.
	Ms.	Tímea Szatmári M.Sc.
		Szabolcs Tarapcsák M.Sc.
		Gábor Tóth M.D.
	Ms.	Julianna Volkó M.Sc.
	Ms.	Florina Zákány M.D.

Visiting Lecturer	László Bene M.Sc., Ph.D.
	Zoltán Krasznai M.Sc., Ph.D.
Academic Advisor	Zsolt Fazekas M.Sc., Ph.D.

DEPARTMENT OF IMMUNOLOGY

Egyetem tér 1., Debrecen, 4032
Telephone: +36-52-417-159 Fax: +36-52-417-159
Web: www.immunology.unideb.hu

Full Professor, Head of Department		Tamás Bíró M.D., Ph.D., D.Sc.
Full Professor	Ms.	Éva Rajnavölgyi M.Sc., Ph.D., D.Sc.
Associate Professor		Attila Bácsi M.Sc., Ph.D.
		Árpád Lányi M.Sc., Ph.D.
Assistant Lecturer	Ms.	Tünde Fekete M.Sc., Ph.D.
	Ms.	Renáta Laczik M.D., Ph.D.
		Attila Szabó D.Pharm.
Research Fellow		Péter Gogolák M.Sc., Ph.D.
		Gábor Koncz M.Sc., Ph.D.
Research Assistant	Ms.	Zsófia Agod M.Sc.
	Ms.	Adrienn Gyöngyösi M.Sc.
	Ms.	Kitti Pázmándi M.Sc., Ph.D.
	Ms.	Aliz Varga M.Sc., Ph.D.
PhD Student		Pál Krisztián Bene M.Sc.
	Ms.	Eszter Boldizsár
	Ms.	Anett Mázló M.Sc.
	Ms.	Márta Tóth M.Sc.
Academic Advisor		Árpád Lányi M.Sc., Ph.D.

DEPARTMENT OF MEDICAL MICROBIOLOGY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-425 Fax: +36-52-255-424
E-mail: mikro@dote.hu, Web: http://mikrobiologia.deoec.hu

Associate Professor, Head of Department		József Kónya M.D., Ph.D.
Professor Emeritus		Lajos Gergely M.D., Ph.D., D.Sc.
Associate Professor		László Majoros M.D., Ph.D.
	Ms.	Judit Szabó M.D., Ph.D.
		György Veress M.Sc., Ph.D.
Assistant Professor	Ms.	Eszter Csoma M.Sc., Ph.D.
		Gábor Kardos M.D., Ph.D.
	Ms.	Krisztina Szarka M.Sc., Ph.D.
Assistant Lecturer	Ms.	Zsuzsanna Dombrádi M.Sc., Ph.D.
		Renátó Kovács M.Sc.
	Ms.	Brigitta László M.Sc., Ph.D.
Research Fellow	Ms.	Anita Szalmás M.Sc., Ph.D.
Junior Research Fellow	Ms.	Eszter Gyöngyösi M.Sc.
Biologist	Ms.	Cecilia Miszti M.Sc.
Resident	Ms.	Evelin Bukta M.D.
Specialist	Ms.	Anita Kozák M.D.
Academic Advisor of Faculty of Medicine		György Veress M.Sc., Ph.D.
Academic Advisor of Faculty of Dentistry		György Veress M.Sc., Ph.D.
PhD Student	Ms.	Marianna Domán
	Ms.	Shabnam Ebrahimi M.Pharm.
		Levente Szakács M.Sc.
Academic Advisor of Faculty of Pharmacy		László Majoros M.D., Ph.D.

DEPARTMENT OF PATHOLOGY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-245 Fax: +36-52-255-245
Web: http://pathol.med.unideb.hu

Associate Professor, Head of Department	Gábor Méhes M.D., Ph.D.
Full Professor	Péter Molnár M.D., D.Sc.
Professor Emeritus	Szabolcs Gomba M.D., Ph.D.
	Zoltán Nemes M.D., M.Sc., Ph.D.
Associate Professor, Head of Division of	Tibor Hortobágyi M.D.,Ph.D.

Neuropathology		
Associate Professor		Balázs Dezső M.D., Ph.D.
Assistant Lecturer		Lukács Baráth M.D.
		László Bidiga M.D.
	Ms.	Julia Lisa Cristofari M.D.
		Csaba Molnár M.D.
	Ms.	Györgyike Soós M.D.
		Sándor Csaba Szász M.D.
		László Tóth M.D., Ph.D.
Resident	Ms.	Vanda Aranyi M.D.
	Ms.	Anna Arday M.D.
	Ms.	Judit Bedekovics M.D.
		Tamás Csonka M.D.
		Zoltán Hendrik M.D.
		Gábor Irsai M.D.
		Bence Nagy M.D.

DEPARTMENT OF PHARMACOLOGY AND PHARMACOTHERAPY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-009 Fax: +36-52-255-009
Web: http://pharmacology.med.unideb.hu

Full Professor, Head of Department		Zoltán Szilvássy M.D., Ph.D., D.Sc.
Professor Emeritus	Ms.	Judith Gergely D.Pharm., Ph.D., D.Sc.
Associate Professor	Ms.	Ilona Benkő M.D., Ph.D.
		Róbert Pórszász M.D.,Ph.D.,MBA
		József Szentmiklósi M.D., Ph.D.
Assistant Professor		Attila Megyeri M.D., Ph.D.
		Barna Peitl M.D., Ph.D.
	Ms.	Zsuzsanna Réka Sári D.Pharm., Ph.D.
Assistant Lecturer	Ms.	Ágnes Cseppentő M.D.
		László Drimba M.D.
	Ms.	Rita Kiss M.D.
Senior Research Fellow		József Németh M.Sc., Ph.D.
Research Fellow	Ms.	Zsuzsanna Gál M.Sc., Ph.D.

PhD Student		Csaba Hegedűs M.Sc.
	Ms.	Diána Kovács M.Sc.
	Ms.	Beáta Lelesz M.Sc.
		Balázs Marics M.Sc.
	Ms.	Éva Ungvári M.Sc.
Academic Advisor	Ms.	Ilona Benkő M.D., Ph.D.
		Róbert Pórszász M.D.,Ph.D.,MBA

DEPARTMENT OF PHYSIOLOGY

Nagyerdei krt. 98., Debrecen, 4012
Telephone: +36-52-255-575 Fax: +36-52-255-116
Web: http://phys.dote.hu

Full Professor, Head of Department	László Csernoch M.Sc., Ph.D., D.Sc.
Full Professor, Head of Sport Physiology Division	János Magyar M.D.,Ph.D.,D.Sc.
Full Professor, Head of Dental Physiology and Pharmacology Division	Péter Nánási M.D., Ph.D., D.Sc.
Full Professor	László Csernoch M.Sc., Ph.D., D.Sc.
	János Magyar M.D.,Ph.D.,D.Sc.
	Péter Nánási M.D., Ph.D., D.Sc.
Professor Emeritus	László Kovács M.D.,Ph.D.,D.Sc.,M.H.A.Sc.
Associate Professor	Tamás Bányász M.D., Ph.D.
	Péter Szűcs M.D., Ph.D.
Assistant Professor	János Almássy M.Sc., Ph.D.
Ms.	Szilvia Benkő M.Sc., Ph.D.
	Balázs Horváth M.D.,Ph.D.
	Balázs Pál M.D.,Ph.D.
	Norbert Szentandrássy M.D., Ph.D.
	István Balázs Tóth M.Sc., Ph.D.
Postgraduate Lecturer Ms.	Ágnes Jenes M.D.
	Attila Oláh M.D.
	Attila Szöllősi M.D.
Senior Research Fellow	Péter Szentesi M.Sc., Ph.D.
Research Fellow Ms.	Gabriella Czifra M.Sc., Ph.D.
Ms.	Beatrix Dienes M.Sc., Ph.D.
Ms.	Mónika Sztretye M.Sc., Ph.D.

Junior Research Fellow	Ms.	Marietta Budai M.Sc.
		Attila Mokánszki M.Sc., Ph.D.
		Tamás Oláh M.Sc., Ph.D.
	Ms.	Angelika Varga M.Sc., Ph.D.
OTKA Postdoctoral Fellow		János Fodor M.Sc., Ph.D.
	Ms.	Johanna Mihály M.Sc., Ph.D.
PhD Student	Ms.	Lídia Ambrus M.Sc.
	Ms.	Ágnes Angyal M.Sc.
		Norbert Balogh M.Sc.
	Ms.	Csilla Bordás M.Sc.
	Ms.	Zsuzsanna Gaál M.D.
	Ms.	Adrienn Kovács M.Sc.
		Gergő Kovács M.Sc.
		Arnold Markovics M.Sc.
	Ms.	Edina Orosz M.Sc.
		Imre Lőrinc Szabó M.D.
	Ms.	Judit Szabó-Papp M.Sc.
	Ms.	Adrienn Tóth D.M.D.
		János Vincze M.D.
Research Advisor		István Jóna M.Sc., Ph.D., D.Sc.

SPORT CENTER OF UNIVERSITY DEBRECEN

Móricz Zs. krt. 22., Debrecen, 4032
Telephone: +36-52-411-600/54436 Fax: +36-52-411-600/54436
E-mail: sport@med.unideb.hu

Head of Department	Ms.	Katalin Nagy Varga M.Sc.
Lecturer		Miklós Magyarits M.A.
		Ágoston Nagy Ph.D.

CHAPTER 6
CLINICAL DEPARTMENTS

DEPARTMENT OF CARDIOLOGY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-928 Fax: +36-52-255-928

Chairman	István Édes M.D., Ph.D., D.Sc.

Divison of Cardiac Surgery

Móricz Zs. krt. 22., Debrecen, 4004
Telephone: +36-52-255-306 Fax: +36-52-255-306

Associate Professor, Head of Division	Tamás Szerafin M.D., Ph.D.
Professor Emeritus	Árpád Péterffy M.D., D.Sc.
Chief Physician	Ambrus Horváth M.D.
Clinical Assistant	Tamás Maros M.D.
	Lehel Palotás M.D.
	József Simon M.D.
	István Szentkirályi M.D.
Resident	Péter Csizmadia M.D.
	Tamás Debreceni M.D.
	András Durkó M.D.

Division of Cardiology

Móricz Zs. krt. 22., Debrecen, 4032
Telephone: +36-52-255-928 Fax: +36-52-255-928
E-mail: edes@dote.hu, Web: http://en.debkard.hu

Full Professor, Head of Department	István Édes M.D., Ph.D., D.Sc.
Associate Professor	Zoltán Csanádi M.D., Ph.D.
	Ms. Ida Hegedűs M.D., Ph.D.
	Zsolt Kőszegi M.D., Ph.D.
Assistant Professor	Ms. Judit Barta M.D., Ph.D.
	Ms. Annamária Bódi M.D., Ph.D.
	Attila Borbély Ph.D.
	Tibor Fülöp M.D., Ph.D.
	Attila Kertész M.D., Ph.D.

		Rudolf Kolozsvári M.D., Ph.D.
		Tibor Szűk M.D., Ph.D.
		Gusztáv Vajda M.D.
Cardiologist		László Balogh M.D.
	Ms.	Orsolya Bene M.D.
		Marcel Clemens M.D., Ph.D.
		Dániel Czuriga M.D., Ph.D.
	Ms.	Andrea Daragó M.D.
	Ms.	Zita Hertelendi M.D., Ph.D.
		Csaba Kun M.D.
		Andrij Leny M.D.
		László Nagy M.D.
	Ms.	Andrea Péter M.D.
	Ms.	Ildikó Rácz M.D.
		Gábor Sándorfi M.D.
		Gábor. Szabó M.D.
Assistant Lecturer		László Fülöp M.D., Ph.D.
		Szabolcs Gergely M.D.
	Ms.	Nóra Homoródi M.D.
		Csaba Jenei M.D.
	Ms.	Erzsébet Lizanecz M.D., Ph.D.
		Sándor Sipka M.D., Ph.D.
Resident	Ms.	Ágnes Balogh M.D., Ph.D.
	Ms.	Alexandra Kiss M.D.
		Gábor Kolodzey M.D.
	Ms.	Emese Gyöngyvér Kovács M.D., Ph.D.
		Bertalan Kracskó M.D.
	Ms.	Edina Nagy-Baló M.D.
	Ms.	Ágnes Orsolya Rácz M.D.
	Ms.	Andrea Szegedi M.D., Ph.D., D.Sc.
Other Graduated Staff Member	Ms.	Valéria Szathmáriné Kruzich

DEPARTMENT OF INTERNAL MEDICINE

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-525 Fax: +36-52-255-951

Full Professor, Head of Department	György Paragh M.D., Ph.D., D.Sc.
Education Officer, Contact Person	Péter Fülöp M.D., Ph.D.

Division of Emergency Medicine

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-411-717
E-mail: ujvarosy.andras@mentok.hu

Associate Professor, Head of Division		Zoltán Szabó M.D., Ph.D.
Associate Professor		István Lőrincz M.D., Ph.D.
Assistant Professor	Ms.	Dóra Ujvárosy M.D.
		Zoltán Vincze M.D., Ph.D.
Candidate Clinical Assistant		Tamás Köbling M.D.
Resident		Zoltán Szegedi M.D.
		Szabolcs Tóth M.D.

Division of Geriatry

Nagyerdei krt. 98, Debrecen, 4012
Telephone: 06-52-255-218 Fax: 06-52-255-218
Web: www.3belklinika.deoec.hu

Full Professor, Head of Division		Gyula Bakó M.D., Ph.D., D.Sc.
Clinical Doctor	Ms.	Adrienn Szabó M.D.

Division of Rheumatology

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-091 Fax: +36-52-255-091
E-mail: reuma.titkarsag@med.unideb.hu, Web: www.rheumatology.hu

Full Professor, Head of Division		Zoltán Szekanecz M.D., Ph.D., D.Sc.
Associate Professor		Sándor Szántó M.D.,Ph.D.
	Ms.	Gabriella Szűcs M.D., Ph.D.
Assistant Professor	Ms.	Szilvia Szamosi M.D.,Ph.D.
Assistant Lecturer	Ms.	Edit Végh M.D.
Clinical Specialist	Ms.	Nóra Bodnár M.D.
	Ms.	Katalin Gulyás M.D.

	Ms.	Ágnes Horváth M.D.
	Ms.	Zsófia Pethő M.D.
Resident	Ms.	Ágnes Kovács Ph.D.
	Ms.	Boglárka Soós M.D.

DEPARTMENT OF NEUROLOGY

Móricz Zs. str. 22., Debrecen, 4032
Telephone: +36-52-255-255 Fax: +36-52-453-590
E-mail: iroda@med.unideb.hu; csiba@med.unideb.hu

Full Professor, Head of Department		László Csiba M.D., Ph.D., D.Sc.
Full Professor		István Fekete M.D.
Professor Emeritus		Ferenc Mechler M.D., Ph.D., D.Sc.
Associate Professor	Ms.	Tünde Csépány M.D., Ph.D.
	Ms.	Tünde Magyar M.D., Ph.D.
		László Oláh M.D., Ph.D.
Assistant Professor	Ms.	Judit Boczán M.D., Ph.D.
	Ms.	Klára Fekete M.D., Ph.D.
		Bertalan Vámosi M.D.
Assistant Lecturer	Ms.	Krisztina Csapó M.D., Ph.D.
		Norbert Kozák M.D., Ph.D.
		Zsolt Mezei M.D., Ph.D.
	Ms.	Szilvia Puskás M.D.,Ph.D.
Clinical Assistant	Ms.	Anita Frendl M.D.
	Ms.	Edina Kovács M.D.
	Ms.	Katalin Réka Kovács M.D., Ph.D.
	Ms.	Katalin Szabó M.D.
Candidate Clinical Assistant		Szabolcs Farkas M.D., Ph.D.
		Gergely Hofgárt M.D.
	Ms.	Kitti Bernadett Kovács M.D.
Resident	Ms.	Lilla Rácz M.D.
PhD Student	Ms.	Aletta Harmann M.D.
	Ms.	Csilla Vér

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-144 Fax: +36-52-255-705
E-mail: gyvarga@med.unideb.hu

Full Professor, Head of Department		Róbert Póka M.D., Dr. habil., Ph.D.
Full Professor		Zoltán Hernádi M.D., Ph.D., D.Sc.
		Zoltán Tóth M.D., Ph.D., D.Sc.
Professor Emeritus		Antal Borsos M.D., Ph.D., D.Sc.
		László Lampé M.D., Ph.D., D.Sc.
Associate Professor		Attila Jakab M.D., Ph.D.
		Tamás Szilveszter Kovács M.D., Ph.D.
		Tamás Major M.D., Ph.D.
	Ms.	Olga Török M.D., Ph.D.
Assistant Professor		László Birinyi M.D., Ph.D.
		Roland Csorba M.D., Ph.D.
		Alpár Gábor Juhász M.D., Ph.D.
		Zoárd Krasznai M.D., Ph.D.
		Csaba Móré M.D., Ph.D.
		Tamás Sápy M.D., Ph.D.
	Ms.	Szilvia Vad M.D., Ph.D.
Assistant Lecturer		Péter Daragó M.D.
		Tamás Deli M.D., Ph.D.
		Rudolf Lampé M.D., Ph.D.
		János Lukács M.D.
		Péter Török M.D., Ph.D.
Biologist	Ms.	Zsuzsanna Buczkó M.Sc.
	Ms.	Ildikó Zsupán M.Sc.
Clinical Assistant	Ms.	Tünde Bartha M.D.
		Balázs Erdődi M.D.
	Ms.	Ágnes Farkas M.D.
		István Fekete M.D.
	Ms.	Judit Kerepesi M.D.
		Bence Kozma M.D.
		László Orosz M.D.
Candidate Clinical Assistant	Ms.	Heidi Balla M.D.

	Ms.	Eszter Maka M.D.
		Gergő Orosz M.D.
		Jashanjeet Singh M.D.
Resident		Levente Barna M.D.
		Péter Damjanovich M.D.
		Zsolt Farkas M.D.
		Szabolcs Molnár M.D.
	Ms.	Lilla Ördög M.D.
Psychologist	Ms.	Zsuzsa Török M.A., Ph.D.
Academic Advisor (IV. Year)		Tamás Szilveszter Kovács M.D., Ph.D.
Academic Advisor (VI. year)		Tamás Major M.D., Ph.D.

DEPARTMENT OF ORTHOPEDIC SURGERY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-815 Fax: +36-52-255-815
E-mail: zjonas@med.unideb.hu, Web: www.ortopedia.dote.hu

Associate Professor, Head of Department		Zoltán Csernátony M.D., Ph.D.
Professor Emeritus		János Rigó M.D., Ph.D.
		Kálmán Szepesi M.D., Ph.D., D.Sc.
Assistant Professor		Zoltán Jónás M.D.
Assistant Lecturer		Tamás Bazsó M.D.
		Gyula Győrfi
		Zsolt Hunya M.D.
		Zoltán Karácsonyi M.D.
		László Kiss M.D.
		Henrik Rybaltovszki M.D.
		János Szabó M.D.
	Ms.	Csenge Szeverényi M.D.
Clinical Assistant		István Soltész M.D.

DEPARTMENT OF PEDIATRICS

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-411-717/55289 Fax: +36-52-255-335
E-mail: mogyoros@med.unideb.hu, Web: www.pediatrics.dote.hu

Full Professor, Head of Department		György Balla M.D., Ph.D., D.Sc.
Emeritus	Ms.	Éva Oláh M.D., Ph.D., D.Sc.
Full Professor, Head of Division of Pediatric Haematology and Oncology		Csongor Kiss M.D., Ph.D., D.Sc.
Full Professor	Ms.	Ilma Korponay-Szabó M.D., Ph.D.
Associate Professor, Head of Division of General Pediatrics		Gábor Mogyorósy M.D., Ph.D.
Associate Professor, Head of Division of Pediatric Emergency Care	Ms.	Rita Káposzta M.D., Ph.D.
Associate Professor		István Csízy M.D., Ph.D.
	Ms.	Ilona György M.D., Ph.D.
		Gábor Mogyorósy M.D., Ph.D.
		Béla Nagy M.D., Ph.D.
	Ms.	Éva Nemes M.D., Ph.D.
		Tamás Szabó M.D., Ph.D.
		István Szegedi M.D., Ph.D.
Assistant Professor	Ms.	Enikő Felszeghy M.D.,Ph.D.
	Ms.	Katalin Szakszon M.D., Ph.D.
	Ms.	Judit Tóth M.D.
Senior Lecturer	Ms.	Andrea Nagy M.D.
Assistant Lecturer	Ms.	Erika Bálega M.D.
	Ms.	Ágnes Papp M.D.
		István Pataki M.D.
		László Sasi Szabó M.D.
Clinical Assistant		Károly Bakó M.D.
		Zsolt Bene M.D.
	Ms.	Andrea Berkes M.D., Ph.D.
		Gábor Garai M.D.
		Imre Gáspár M.D.
	Ms.	Éva Juhász M.D.
	Ms.	Orsolya Kadenczki M.D.
	Ms.	Erzsébet Ilona Lakatos M.D.

	Ms. Ágnes Magyar M.D.
	Ms. Edina Mák M.D.
	Ms. Zsuzsa Mándi M.D.
Resident	Ms. Edina Bányász M.D.
	Ms. Anita Gertrud Czifra M.D.
	Ms. Klára Erdei M.D.
	Ms. Boglárka Fehér M.D.
	Ms. Anita Grabicza M.D.
	Ms. Réka Jancsik M.D.
	Péter Juhász M.D.
	Ms. Nóra Kicska M.D.
	Ms. Eszter Kovács M.D.
	Ms. Veronika Kovács M.D.
	András Kretzer M.D.
	Ms. Edina Mák M.D.
	Ms. Mariann Márki M.D.
	Ms. Katalin Nagy M.D.
	Ms. Petronella Orosz M.D.
	Ms. Helga Perényi M.D.
	Ms. Krisztina Plásztánné Kovács M.D.
	Levente Szabó M.D.
	Ms. Lilla Szegedi M.D.
	Ms. Anna Szőllős M.D.
	Ms. Flóra Ujhelyi M.D.
	Ms. Zsuzsa Zele M.D.
Psychologist	Ms. Erika Tizedes
Academic Advisor	Gábor Mogyorósy M.D., Ph.D.
	Tamás Szabó M.D., Ph.D. (for GM students - 5th and 6th year)

DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

Nagyerdei krt. 98. Pf. 103., Debrecen, 4032
Telephone: +36-52-255-942 Fax: +36-52-255-109
E-mail: orfmt@med.unideb.hu, Web: www.rehab.dote.hu

Head of Division, Associate Professor		Zoltán Jenei M.D., Ph.D.
Associate Professor	Ms.	Zsuzsanna Vekerdy-Nagy (retired, part time) M.D., Ph.D.
Resident	Ms.	Adél Nagy M.D.
	Ms.	Lilla Szabó M.D.
Neuro-psychologist	Ms.	Györgyi Lente M.Sc.
Psychologist	Ms.	Noémi Zsuzsanna Kovács M.Sc.
Physiotherapist	Ms.	Szabina Antal M.A.
	Ms.	Zsuzsa Bodnár M.A.
	Ms.	Kitti Boros, M.A.
	Ms.	Bettina Burgond M.A.
	Ms.	Andrea Győrfiné Jánossy M.A.
	Ms.	Anna Kurta M.A.
	Ms.	Gabriella Nagy
	Ms.	Szabina Nagy M.A.
	Ms.	Éva Anna Szabados M.A.
Physiotherapist, Occupational therapist and Rehabilitation expert	Ms.	Zsófia Hőgye M.A.
Speech Therapist	Ms.	Noémi Fejér M.A.
	Ms.	Ildikó Mózesné Kapocska M.A.
	Ms.	Adrienn Polonkai M.A.
Specialist	Ms.	Ágnes Bajusz-Leny M.D.
	Ms.	Judit Horváth M.D.
	Ms.	Éva Szabó M.D.
	Ms.	Rita Szepesi M.D.
Social Worker	Ms.	Julianna Kavaleczné Ilyés M.A.
IT Specialist	Ms.	Beáta Alíz Dézsi M.Sc.
PhD Student	Ms.	Judit Horváth M.D.
	Ms.	Adél Nagy M.D.
	Ms.	Anna Sárközi M.D.
Academic Advisor	Ms.	Szilvia Baksa M.A.

DEPARTMENT OF PSYCHIATRY

Nagyerdei krt. 98., Debrecen, 4012
Telephone: +36-52-255-240 Fax: +36-52-255-240

Head of Department		Ede Frecska M.D., M.A., Ph.D.
Associate Professor	Ms.	Anikó Égerházi M.D., Ph.D.
Assistant Professor		Roland Berecz M.D., Ph.D.
	Ms.	Theodóra Glaub M.D.
Clinical Assistant		Gábor Andrássy M.D.
	Ms.	Edina Cserép M.D.
		Attila Kovács
	Ms.	Erzsébet Magyar M.D.
		Csaba Móré E. M.D., Ph.D.
	Ms.	Ágnes Süveges M.D.
	Ms.	Katalin Tolvay M.D.
Resident		Ágoston Gajdos M.D.
		Balázs Jeges M.D.
	Ms.	Marietta Nagy M.D.
	Ms.	Annamária Nagy M.D.
	Ms.	Petrina Papanastasiou M.D.
		Bence Szerdahelyi M.D.
Psychologist	Ms.	Lili Kövér M.A.
	Ms.	Emese Kulcsár M.A.
	Ms.	Ella Molnár M.A.
	Ms.	Andrea Ritz M.A.
Academic Advisor	Ms.	Réka Stébel

DEPARTMENT OF PULMONOLOGY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-222 Fax: +35-52-255-222

Full Professor, Head of Department	Ms.	Mária Szilasi M.D., Ph.D.
Assistant Professor		Imre Varga M.D., Ph.D.
Chief Physician		László Brugós M.D., Ph.D.
Assistant Lecturer	Ms.	Andrea Fodor M.D.
		Tamás Kardos M.D.

	Ms.	Anna Sárközi M.D.
		Attila Vaskó M.D.
Clinical Assistant	Ms.	Melinda Lajtos M.D.
		Attila Lieber M.D.
	Ms.	Angéla Mikáczó M.D.
	Ms.	Zsuzsa Papp M.D.
	Ms.	Ildikó Szűcs M.D.
Candidate Clinical Assistant		Zoltán Erdődi M.D.
		Attila Makai M.D.
		Attila Csaba Nagy M.D.
Resident	Ms.	Regina Szűcs M.D.
Responsible for Educational Matters	Ms.	Andrea Fodor M.D.

DEPARTMENT OF RADIOLOGY

Nagyerdei krt. 98., Debrecen, 4032
Telephone: +36-52-255-136 / 54308 Fax: +36-52-255-136 / 56136
E-mail: toth.agnes@med.unideb.hu, Web: http://radiologia.med.unideb.hu/

Full Professor, Head of Department		Ervin Berényi M.D., Ph.D.
Professor Emeritus		Mózes Péter M.D., Ph.D.
Assistant Professor		Gábor Endes M.D.
		Botond Karácsonyi M.D.
	Ms.	Éva Pásztor M.D.
Resident	Ms.	Judit Bánk M.D.
	Ms.	Veronika Deczkiné Gaál M.D.
	Ms.	Georgina Nagy M.D.
Academic Advisor	Ms.	Éva Pásztor M.D.

DEPARTMENT OF TRAUMATOLOGY AND HAND SURGERY

Bartók Béla út 2-26., Debrecen, 4031
Telephone: +36-52-419-499, +36-52-511-780 Fax: +36-52-419-499
E-mail: dbtrauma@med.unideb.hu, Web: http://traumatologia.deoec.hu

Associate Professor, Head of Department	Béla Turchányi M.D., Ph.D.
Full Professor	Károly Fekete M.D., Ph.D. (med.habil)
Professor Emeritus	Zoltán Záborszky M.D., Ph.D.
Hon. Associate Professor	Géza Ács M.D.

Head Surgeon		István Frendl M.D.
		Sándor Kiss M.D.
		Ferenc Urbán M.D.
Chief Surgeons of the Kenézy Hospital		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.
		Miklós Bíró M.D.
		Aurél Bogdán M.D.
	Ms.	Danie Czakó M.D.
		Subuh Deeb Mahmoud M.D.
		Szabolcs Gorzsás M.D.
		Sándor Imre Kiss M.D.
		László Kiss M.D.
		Ádám Lőrincz M.D.
	Ms.	Katalin Muraközy M.D.
		Zoltán Németi M.D.
		Zoltán Domokos Pap M.D.
		József Papp M.D.
Resident		Péter Berényi M.D.
		Károly Elek M.D.
		Márton Árpád Fésüs M.D.
		László Gubik M.D.
		Ádám Kristóf Gulyás M.D.
		Gergely Huszanyik M.D.

	Dávid Kovács M.D.
	Csaba Körei M.D.
	Zoltán Mikó M.D.
	Márton József Séber M.D.
Consultant	István Szarukán M.D.
Academic Advisor	Ferenc Urbán M.D.

CHAPTER 7
UNIVERSITY CALENDAR

OPENING CEREMONY:6th September, 2015

1st SEMESTER

Year 2015/16	Course	Examination Period
BSc in Public Health BSc in Physiotherapy MSc in Public Health MSc in Complex Rehabilitation	September 7 - December 18, 2015 (15 weeks)	December 21, 2015 - February 5, 2016 (7 weeks)

2nd SEMESTER

Year	Course	Examination Period
BSc in Public Health BSc in Physiotherapy MSc in Public Health MSc in Complex Rehabilitation	February 8 - May 20, 2016 (15 weeks)	May 23 - July 8, 2016 (7 weeks)

Orientation meeting (planned): 4th September , 2015. 10.00 am

CHAPTER 8
ACADEMIC PROGRAM FOR CREDIT SYSTEM

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

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

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

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

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

The general principles of the credit system are the following:

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

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

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

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

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

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

The diploma work is worth 20 credits.

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

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

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

Compulsory courses												
1. year												
Subjects	Neptun code	1st semester					2nd semester					Prerequisites of taking the subject
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Anatomy I	**NPHYS_MOR_01**	42	15	15	ESE	5						None
Anatomy II	**NPHYS_MOR_02**						53	15	7	ESE	5	Anatomy I
Basic Microbiology	**NPHYS_MBI_01**	30			ESE	2						None
Basics of informatics	**NPHYS_INF_01**	10		50	AW5	3						None
Basics of Physiotherapy	**NPHYS_BPT_01**	30		30	ESE	4						None
Basics of Psychology	**NPHYS_PSY_01**	30			ESE	2						None
Basics of Sociology	**NPHYS_SOC_01**	15			ESE	1						None
Bioethics	**NPHYS_ETHN_01**	15			ESE	1						None
Biomechanics	**NPHYS_BIMN_02**						20	10		ESE	2	Biophysics
Biophysics	**NPHYS_BIOFN_01**	12	20		ESE	2						None
Cell Biology	**NPHYS_CEL_02**						30			ESE	2	None
Communication Skills	**NPHYS_COM_02**						10		20	AW5	2	None
Economics	**NPHYS_ECO_02**						15			ESE	1	None
First Aid	**NPHYS_FAN_01**	12		18	ESE	1						None
General Principles in Health Care and Nursing	**NPHYS_APO_01**	15		15	ESE	2						None
BiologyGenetics and Molecular	**NPHYS_GEN_02**						30			ESE	2	None
Health Care Law	**NPHYS_HCL_02**						30			ESE	2	None
Hungarian Language I	**NPHYS_HUN_01**			30	SIGN	0						None
Hungarian Language II	**NPHYS_HUN_02**								30	SIGN	0	Hungarian language I.
Introduction to Management	**NPHYS_MAN_02**						15			ESE	1	None

Compulsory courses														Prerequisites of taking the subject
1. year (continued)														
Subjects	Neptun code	1st semester						2nd semester						
		L	S	P	Exam	Crd.		L	S	P	Exam	Crd.		
Kinesiology I	**NPHYS_KINI_02**							30	30	60	ESE	8		Anatomy I, Basics of Physiotherapy
Medical Latin	**NPHYS_LAT_01**			30	AW5	2								None
Philosophy	**NPHYS_PHI_01**		15		ESE	1								None
Physical Education I	**NPHYS_PHE_01**			30	SIGN	0								None
Physical education II	**NPHYS_PHE_02**									30	SIGN	0		None

Compulsory 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.	
Applied Training Methods	**NPHYS_APM_04**						15		15	AW5	2	Physiology, Cardiorespiratory and Exercise 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_RES_03**	30			ESE	2						Basics of Informatics
Biochemistry	**NPHYS_BCH_04**						10	5		ESE	1	Basic Biochemistry
Cardiorespiratory and Exercise Physiology	**NPHYS_CEPN_03**	15	5	12	ESE	2						Anatomy II
Dietetics	**NPHYS_DIE_04**						15		15	AW5	2	General Principles of Patient Care and Nursing, Physiology
Electro-, balneo-, hydro-, and climatotherapy	**NPHYS_EBH_04**						15		15	ESE	2	Biophysics, Cardiorespiratory and Exercise Physiology, Neurophysiology
Gerontology	**NPHYS_GER_03**	30			ESE	2						Basics of Sociology
Hungarian Language III	**NPHYS_HUN_03**			30	SIGN	0						Hungarian Language II
Internal Medicine for Physiotherapists I	**NPHYS_IMEN_04**						30	15		ESE	3	Physiology, Introduction to Clinical Medicine
Internal Medicine for Physiotherapists II	**NPHYS_RPN_04**						15	20	10	ESE	2	Cardiorespiratory and Exercise Physiology, Introduction to Clinical Medicine
Introduction to Clinical Medicine	**NPHYS_ICMN_03**	30		15	ESE	3						General Principles in Health Care and Nursing, Anatomy II

Compulsory courses												Prerequisites of taking the subject
2. year (continued)												
Subjects	Neptun code	1st semester					2nd semester					
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Kinesiology	**NPHYS_KCE_04**									FE	0	Kinesiology I and II
PracticeKinesiology Clinical	**NPHYS_KCP_04**								80	SIGN	0	Kinesiology II
Kinesiology II	**NPHYS_KINN_03**	30	15	120	ESE	10						Kinesiology I
Mobilization-Manual Techniques I	**NPHYS_MMT_04**						10	15	90	AW5	7	Kinesiology II, Neurophysiology
Neurophysiology	**NPHYS_NPHN_03**	15	10	3	ESE	2						Anatomy II
Pathology	**NPHYS_PATN_04**						30			ESE	2	Cardiorespiratory and Exercise Physiology, Neurophysiology
Physiology	**NPHYS_PHYN_03**	30	15		ESE	3						Anatomy II
Professional Hungarian Language I	**NPHYS_PHL_04**								45	AW5	2	Hungarian Language III, Kinesiology II
Radiology and Diagnostic Imaging	**NPHYS_RAD_04**								15	AW5	1	Biophysics, Anatomy II
Respiratory Rehabilitation Clinical Practice	**NPHYS_RCP_04**								80	SIGN	0	Internal Medicine for Physiotherapists II

Compulsory courses												Prerequisites of taking the subject
3. year												
Subjects	Neptun code	1st semester					2nd semester					
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Cardiovascular Clinical Practice	**NPHYS_CCP_06**								80	SIGN	0	Internal Medicine for Physiotherapists III
Infant Care and Paediatrics Clinical Practice	**NPHYS_IPP_06**								80	SIGN	0	Infant Care and Paediatrics for Physiotherapists I
Infant Care and Paediatrics for Physiotherapists I	**NPHYS_PEDN_06**						30		30	ESE	4	Mobilization-Manual Techniques II
Internal Medicine for Physiotherapists III	**NPHYS_IMIII_05**	15	15	30	ESE	3						Internal Medicine for Physiotherapists II
Mobilization-Manual Techniques II	**NPHYS_MMTN_05**			90	AW5	5						Mobilization-Manual Techniques I
Neurology for physiotherapists I	**NPHYS_NEUI_06**						45	15	15	ESE	5	Pathology, Mobilization-Manual Techniques II
Obstetrics and Gynaecology for Physiotherapists	**NPHYS_OGPN_05**	30		45	ESE	4						Kinesiology II, Internal Medicine for Physiotherapists I
Orthopaedics for Physiotherapists	**NPHYS_ORP_05**	10	20		ESE	2						Biomechanics, Mobilization-Manual Techniques I
Pharmacology	**NPHYS_PHA_05**	30			ESE	2						Biochemistry, Physiology
Physiotherapy of the Movement System I - PT in Orthopaedics and Traumatology	**NPHYS_PMS_06**						45	30	30	ESE	7	Mobilization-Manual Techniques II, Orthopaedics for Physiotherapists, Traumatology and Intensive Therapy for Physiotherapists I
Preventive Medicine and Public Health I	**NPHYS_PMH_05**	44		16	ESE	4						Basic Microbiology, Internal Medicine for Physiotherapists I

Compulsory courses												Prerequisites of taking the subject
3. year (continued)												
Subjects	Neptun code	1st semester					2nd semester					
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Preventive Medicine and Public Health II	**NPHYS_PMH_06**						40	20		ESE	4	Preventive Medicine and Public Health I
Professional and Scientific Orientation	**NPHYS_ORIN_06**								15	AW5	1	Basics of Research Methodology
Professional Hungarian Language II	**NPHYS_PHLN_05**			45	AW5	2						Professional Hungarian language I
Professional Hungarian Language III	**NPHYS_PHLN_06**								45	AW5	2	Professional Hungarian Language II
Psychiatry I	**NPHYS_PSYN_06**						15			ESE	1	Internal Medicine for Physiotherapists I, Kinesiology II
Rheumatology for Physiotherapists I	**NPHYS_RHEU_05**	20	10		ESE	2						Internal Medicine for Physiotherapists I
Rheumatology for Physiotherapists II	**NPHYS_RHEU_06**						30	15	15	ESE	3	Rheumatology for Physiotherapists I, Mobilization-Manual Techniques II
Thesis I	**NPHYS_THEN_06**									AW5	4	Basics of Research Methodology, Mobilization-Manual Techniques II
Traumatology and Intensive Therapy for Physiotherapists I	**NPHYS_TRAU_05**	30			ESE	2						Mobilization-Manual Techniques I

Compulsory courses												Prerequisites of taking the subject
3. year												
Subjects	Neptun code	1st semester					2nd semester					
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Cardiovascular Clinical Practice	**NPHYS_CCP_06**								80	SIGN	0	Internal Medicine for Physiotherapists III
Infant Care and Paediatrics Clinical Practice	**NPHYS_IPP_06**								80	SIGN	0	Infant Care and Paediatrics for Physiotherapists I
Infant Care and Paediatrics for Physiotherapists I	**NPHYS_PEDN_06**						30		30	ESE	4	Mobilization-Manual Techniques II
Internal Medicine for Physiotherapists III	**NPHYS_IMIII_05**	15	15	30	ESE	3						Internal Medicine for Physiotherapists II
Mobilization-Manual Techniques II	**NPHYS_MMTN_05**			90	AW5	5						Mobilization-Manual Techniques I
Neurology for physiotherapists I	**NPHYS_NEUI_06**						45	15	15	ESE	5	Pathology, Mobilization-Manual Techniques II
Obstetrics and Gynaecology for Physiotherapists	**NPHYS_OGPN_05**	30		45	ESE	4						Kinesiology II, Internal Medicine for Physiotherapists I
Orthopaedics for Physiotherapists	**NPHYS_ORP_05**	10	20		ESE	2						Biomechanics, Mobilization-Manual Techniques I
Pharmacology	**NPHYS_PHA_05**	30			ESE	2						Biochemistry, Physiology
Physiotherapy of the Movement System I - PT in Orthopaedics and Traumatology	**NPHYS_PMS_06**						45	30	30	ESE	7	Mobilization-Manual Techniques II, Orthopaedics for Physiotherapists, Traumatology and Intensive Therapy for Physiotherapists I
Preventive Medicine and Public Health I	**NPHYS_PMH_05**	44		16	ESE	4						Basic Microbiology, Internal Medicine for Physiotherapists I

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.	
Rheumatology Clinical Practice	**NPHYS_RHPN_08**								120	AW5	4	Rheumatology for Physiotherapists II
Rheumatology for Physiotherapists III	**NPHYS_RHEU_07**			30	SIGN	0						Rheumatology for Physiotherapists II
Thesis II	**NPHYS_THEN_07**				AW5	7						Thesis I
Thesis III	**NPHYS_THEN_08**									AW5	9	Thesis II
Traumatology and Intensive Therapy for Physiotherapists II	**NPHYS_TRAU_07**	15		15	ESE	2						Physiology, Internal Medicine for Physiotherapists III, Mobilization-Manual Techniques I
Traumatology Clinical Practice	**NPHYS_TRPN_08**								120	AW5	4	Physiotherapy of the Movement System II – PT in Orthopaedics and Traumatology

Required elective courses												Prerequisites of taking the subject
1. year												
Subjects	Neptun code	1st semester					2nd semester					
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Health Psychology	**NPHYS_HPS_02**						15			ESE	1	Basics of Psychology
Special Methods in Physiotherapy III - Education of Spine Patients	**NPHYS_ESP_04**								30	AW5	2	Kinesiology II
Special Methods in Physiotherapy VIII - Complementary and Alternative Medicine	**NPHYS_CAM_02**						15			AW5	1	None
Special Subaquatic Therapy I - Introduction to Subaquatic Therapy	**NPHYS_SAT_02**						10		20	AW5	2	Basics of Physiotherapy
Sports Physiotherapy and Medicine I - Measurement and Improvement of Physical Abilities	**NPHYS_MIM_02**						15		15	AW5	2	Basics of Physiotherapy
Sports Physiotherapy and Sports Medicine VIII - Step Training	**NPHYS_STT_04**								15	AW5	1	Kinesiology II, Cardiorespiratory and Exercise Physiology
Tools in Physiotherapy I - Gymnastic Equipments	**NPHYS_GEQ_02**								30	AW5	2	Basics of Physiotherapy

Required elective courses												Prerequisites of taking the subject
2. year												
Subjects	Neptun code	1st semester					2nd semester					
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Health Sociology	**NPHYS_HSCN_04**						30			ESE	2	Basics of Sociology
Immunology	**NPHYS_IME_03**	30			ESE	2						Cell Biology
Library Informatics	**NPHYS_LIN_03**	10	14		ESE	1						Basics of Informatics
Special Methods in Physiotherapy I - Aesthetic Body Forming Gymnastics	**NPHYS_ABF_04**								30	AW5	2	Kinesiology II
Sports Physiotherapy and Sports Medicine V - Pulse Control	**NPHYS_PCR_03**	15		15	ESE	2						Anatomy II
Tools in Physiotherapy II - Balls	**NPHYS_BPT_03**			30	AW5	2						Kinesiology I
Tools in Physiotherapy VII - Wii	**NPHYS_WII_04**								15	AW5	1	Kinesiology II, Cardiorespiratory and Exercise Physiology

Required elective courses												Prerequisites of taking the subject
3. year												
Subjects	Neptun code	1st semester					2nd semester					
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Special Methods in Physiotherapy II - Autostretching	**NPHYS_AST_05**			15	AW5	1						Mobilization-Manual Techniques I
Special Methods in Physiotherapy IV - Lymphdrainage	**NPHYS_LYD_05**	10		20	AW5	2						Internal Medicine for Physiotherapists I
Sports Physiotherapy and Medicine III - Sports Physiotherapy	**NPHYS_SPT_06**						15		15	AW5	2	Traumatology and Intensive Therapy for Physiotherapists I
Sports Physiotherapy and Sports Medicine IX - Pilates	**NPHYS_PIL_05**			15	AW5	1						Mobilisation-Manual Techniques I
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**						15			AW5	1	Orthopaedics for Physiotherapists, Rheumatology for Physiotherapists I, Traumatology and Intensive Therapy for Physiotherapists I
Tools in Physiotherapy V - Sling Suspension Frame	**NPHYS_SSF_06**								15	AW5	1	Orthopaedics for Physiotherapists, Rheumatology for Physiotherapists I, Traumatology for Physiotherapists I

Required elective courses												Prerequisites of taking the subject
4. year												
Subjects	Neptun code	1st semester					2nd semester					
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	
Psychosomatics	**NPHYS_PSS_07**	15			ESE	1						Internal Medicine for Physiotherapists 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 I
Sports Physiotherapy and Sports Medicine IV - Taping Techniques	**NPHYS_TTS_07**			15	AW5	1						Rheumatology for Physiotherapists II, Physiotherapy of Movement System - PT in Orthopedics and Traumatology I

CHAPTER 9
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

Requirements: 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.

Rules of examinations:

*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: **BASICS OF PSYCHOLOGY**
Year, Semester: 1st year/1st 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.

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

1st week:
Lecture: The emergence of bioethics; the basic features of this discipline

2nd week:
Lecture: The nature of ethical decision making in clinical context

3rd week:
Lecture: The principles of modern bioethics

4th week:
Lecture: Paternalism and anti-paternalism in modern bioethics

5th week:
Lecture: Patients' rights (in Hungary and in other countries)

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

7th week:
Lecture: The Hippocratic tradition in health care ethics

8th week:
Lecture: End-of-life decisions

9th week:
Lecture: Basic questions in contemporary research ethics

10th week:
Lecture: Ethics of new biotechnologies

11th week:
Lecture: The ethical aspects of physiotherapeutic practice

12th week:
Lecture: Ethics and medical anthropology of disability

13th week:
Lecture: Ethics of nursing

14th week:
Lecture: Basic questions in public health ethics

15th week:
Lecture: Summary and consultation

Requirements

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

Subject: **PHILOSOPHY**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Seminar: **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 seminars is compulsory. The signature of Lecture Book will be refused if you are absent more than twice.

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 minimum requirement exam.

Requirements

Attendance: Language class attendance is compulsory. The maximum percentage of allowable absences is 10 % which is a total of 2 out of the 15 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 final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students' behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a "minus" (-). If a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

Testing, evaluation: In each Hungarian language course, students must sit for 2 written language tests and a short minimal oral exam. A further minimum requirement is the knowledge of 200 words per semester announced on the first week. There is a (written or oral) word quiz in the first 5-

10 minutes of the class, every week. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam that includes all 200 words along with the oral exam. The results of word quizzes may modify the end-semester evaluation. The oral exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral exam results in failing the whole course. The result of the oral exam is added to the average of the mid-term and end-term tests.

Based on the final score the signature is refused below 60%. If the final score is below 60, the student once can take an oral remedial exam covering the whole semester's material.

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.

Course book: See the website of the department.
Website: Oral exam topics and vocabulary minimum lists are available from the website of the Department of Foreign Languages: http://ilekt.med.unideb.hu.

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

2nd week:
Practical: Planes and directional terms in anatomical terminology; Latin adjectives

3rd week:
Practical: The parts of the body. Latin and Greek words and word roots.

4th week:
Practical: Genitive case and plural forms of Latin nouns.

5th week:
Practical: The skeleton of human body; basic terms of osteology; names of bones; an etymological approach. Word formation: adjectiv suffixes.

6th week:
Practical: Regions. Adjective formation.

7thweek:
Practical: Revision. Mid-term test.

8th week:
Practical: Joints, movements.

9th week:
Practical: Clinical terms related to bones and joints; Greek equivalents of Latin word roots;

10th week:
Practical: Complex adjectives, prefixes.

11th week:
Practical: Muscles.

12th week:
Practical: Clinical terms of muscular system

13th week:
Practical: Cardiovascular system.

14th week:
Practical: RevisionEnd-term test

15th week:
Practical: Assessment and evaluation.

Requirements

Attendance: Language class attendance is compulsory. The maximum percentage of allowable absences is 10 % which is a total of 2 out of the 15 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 final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students' behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a "minus" (-). If a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

Testing, evaluation: In each Latin language course, students must sit for 2 written language tests. A further minimum requirement is the knowledge of 300 words per semester announced on the first week. There is a (written or oral) word quiz in the first 5-10 minutes of the class, every week. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam that includes all 300 words along with the oral exam. The results of word quizzes are added to the average score of the written tests.

Based on the final score the grades are given 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 whole semester's material.

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.

Website: Minimum vocabulary lists and further details are available on the website of the Department of Foreign Languages: http://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 end of semester examination cover the lectured topics.

Department of Physiotherapy

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

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

2nd week:
Lecture: History of physiotherapy from the ancient times to the end of 20th century
Practical: Trunk exercises in a laying position

3rd week:
Lecture: The spread and development of European trends in Hungary; the spread of physiotherapy in different clinical fields and its social trends
Practical: Limb exercises in a laying position

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

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

6th week:
Lecture: Physical basis of the movement. Kinematics, equilibrium, performance
Practical: Exercises in sitting position

7th week:
Lecture: Biological basis of the movement. Active and passive elements of the movement system
Practical: Climbing positions, exercises in this position

8th week:
Lecture: Stimulus, reaction, regulation of the movement
Practical: Exercises in kneeling and semi-kneeling positions

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

10th week:
Lecture: Movements in the space. Planes, axes
Practical: Teaching the correct standing. Straight and round flexion of the trunk

11th week:
Lecture: Orientation, kinesthesia
Practical: Exercises in a standing position

12th week:
Lecture: Applicable postures in the training programs
Practical: Exercises to prepare of walk, walking exercises

13th week:
Lecture: Principles of a general training in physiotherapy
Practical: Coordination exercises in different positions

14th week:
Lecture: Schematic representation of the movement
Practical: Assessment of practical knowledge

15th week:
Lecture: Summary, consultation
Practical: Assessment of practical knowledge

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. Attendance at practices is compulsory. If you miss more than 4 practical hours the signature of the Lecture Book may be refused. To fulfil the requirements in practice is a precondition of taking the ESE.

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).

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

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.

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 Preventive Medicine

Subject: **BASICS OF INFORMATICS**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **10**
Practical: **50**

1st week:
Lecture: (1-2) History of computers. Principles of computers' operation (data handling, measures, hardware, software). Components of PCs: hardware / software operating systems, applications - types, categories. Software licenses.
Practical: (1-2) Components of PCs: hardware - input, output, storage, memory/software - operating systems, applications. Install/uninstall: hardware and software.

2nd week:
Lecture: (3) Data files, types, connection between data storing files, operation with data files. Compressing files. Malicious softwares - virus, trojan, spyware, scareware, etc. (4) Concepts and function of operation systems, basics of Windows. Electronic data storage (concepts of data, file, directory, extensions)
Practical: (3-4) Data files, operation with data files: create, delete, modify, rename, move, copy. Compressing files. Basics of Windows.

3rd week:
Lecture: (5) Networks: concept, setting, function, operation, application. Internet. Webpages, search. E- mail - basics, warnings. (6) Internet. E-learning - MOODLE. Collaboration - GOOGLE DOCS. Time management - calendars, timetables. On-line communications - chat, Skype, video conference softwares. File sharing concepts, law, privacy.
Practical: (5) Networks (6) Internet.

4th week:
Lecture: (7) Selfcontrol test - theoretical part.
Practical: MS Excel. (7) Tables. Spreadsheet

softwares Columns, rows, cells, tables. Contents of a cell: data types, operations, functions. (8-9) Entering data. Data type. Properties of a table. Formatting a table - add/delete rows, columns, changing the borders, the shading, text color.
Self Control Test (THEORY)

5th week:
Lecture: (8) Design of sheets, data preparation. Entering data, import data, export data. Charts - types, properties, settings
Practical: (10) Entering data, import data, export data. Charts - types, properties, settings (11-12) Excel: Basic calculations - addition subtraction,division, mutiplication, root, square. References: relative, absolute, mixed. Charts.

6th week:
Practical: (13-14) Basic calculations - addition subtraction,division, mutiplication, root, square. References: relative, absolute, mixed. Charts. (15-16) Functions: SUM, AVERAGE, MIN, MAX, ABS, TODAY, PI. Embedded functions. Charts.

7th week:
Practical: (17-20) Functions: COUNT, COUNTA, COUNTIF, ROOT, SQUARE, IF, OR, AND, VLOOKUP, HLOOKUP. Embedded functions. Charts.

8th week:
Practical: (21) Repetition. (22-24) New functions: IF, OR, AND, VLOOKUP, HLOOKUP. Text functions. Embedded functions. Charts.

9th week:
Practical: (25-28) Repetition.Functions: practices based on previous functions. Solving complicated problems. Embedded functions. Charts.

10th week:
Practical: (29-32) Functions: practices. Solving complicated problems.

11th week:
Lecture: (9) MS Word. Text editors, document editor applications - freeware, commercial, online editors. Importing data. Saving the document - file types, extensions
Practical: (33) Selfcontrol test - Excel (34-35) Text editors. Importing data. Saving the document - file types, extensions. Importing data. Properties of a document. Repair: find and replace. The basic formattings a document - paragraphs and fonts.
Self Control Test (EXCEL)

12th week:
Practical: (36-37) The basic formattings a document - paragraphs and fonts. Changing the properties of the paragraphs and the fonts. Changing the layout. (38-39) Importing data. Inserting and positioning of a table, a picture. Page break, section break, header and footer, footnotes, table of contents, tabulator, equations.

13th week:
Lecture: MS Powerpoint. (10) Presentation softwares: freeware, commercial, online. Structure of a slideshow - the basics.
Practical: (40-41) Titles, subtitles, header, footer, table of contents. Footnotes. Corrections. Tabulator. Equations. (42) PowerPoint. Presentation softwares: freeware, commercial, online. Structure of a slideshow - the basics.

14th week:
Practical: (43) PowerPoint. Inserting pictures, changing properties (size, position, ratio). Inserting media, table, charts (44-46) Combined work: Excel - tables and calculations. Inserting the results into a Word file, and creating a Presentation.

15th week:
Practical: (47-48) Combined work: Excel - tables and calculations. Inserting the results into a Word file, and creating a Presentation. (49-50) Selfcontrol test
Self Control Test (WORD & POWERPOINT)

Requirements

Requirements to acknowledge the semester: The participation at practical and theoretical hours is compulsory. Not more than 6-hour absent is tolerated. The lesson can be substituted in the other group (if it is available) depending on the capacity of the computer room. The students have to use the computers and softwares installed in the computer room of the Faculty of Public Health. It is prohibited to use other electronic or communication devices in the computer lab. It is prohibited to install any softwares by the students.

*Exemption opportunity:*if the student submits acceptable certification of the completion of a course on basic informatics, and demonstrates the defined level of knowledge on computer usage on the first week of the semester, the student will be exempted from the contact hours and the mid-term exam(s) of the successfully fulfilled session(s) of the course.

*Mid-term assessments:*The students have to write test of each topics in the computer room of the Faculty of Public Health. The average of the grades is the final grade. If the grade is fail (1), the student must repeat the test - only one chance on the 15th week of the actual semester.

Division of Biophysics

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

1st week:
Seminar: (1-3) Biostatistics: Set theory, definition and properties of probability, conditional probability

2nd week:
Seminar: (4-6) Biostatistics: Medical applications of conditional probability (specificity, sensitivity, positive and negative predictive value), random variable, properties of distributions, binomial distribution

3rd week:
Seminar: (7-9) Biostatistics: Binomial, Poisson and normal distributions

4th week:
Seminar: (10-12) Biostatistics: Sampling, representative sample, unbiased estimation, central limit theory, sample statistics (mean, median, mode, standard deviation, standard error of the mean), theory of statistical tests

5th week:
Seminar: (13-14) Biostatistics: Statistical tests: the z-test, one-sample t-test

6th week:
Lecture: (1-2) Mechanics of solid bodies, biomechanics
Seminar: Midterm exam
Self Control Test (Midterm Exam of Biostatistics)

7th week:
Lecture: (3-4) Mechanics of fluids and gases, physics of circulation and respiration

8th week:
Seminar: (15-16) Biophysics: material of lectures 1 and 2

9th week:
Lecture: (5-6) Basics of electricity, medical applications

10th week:
Lecture: (7-8) Atomic physics, X-rays

11th week:
Seminar: (17-18) Biophysics: material of lectures 3 and 4

12th week:
Lecture: (9-10) Nuclear physics, radioactive isotopes and radiation

13th week:
Lecture: (11-12) Medical imaging methods

14th week:
Seminar: (19-20) Biophysics: material of lectures 5 and 6

15th week:
Seminar: Midterm exam
Self Control Test (Grade offering test of Biophysics)

Requirements

The course gives an introduction to the physical foundations of biomechanics and physiological processes, medical imaging techniques, diagnostic and therapeutic tools of medical physics. It explains the operation principles of some modern instruments used in diagnosis and therapy. The statistics module describes basic concepts of mathematical probability, distributions and statistical analysis methods.

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 from biostatistics problems. Students achieving at least 70% on the biostatistics test on week 12 will receive exemption from the biostatistics part of the final exam and get maximum points for this part. The same rules apply to repeated exams.

Division of Emergency Medicine

Subject: **FIRST AID**
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: **12**
Practical: **18**

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:
Lecture: Burning; first aid in burning diseases; shock. CPR training without equipment

6th week:
Practical: Examination of breathing and circulation; the chest-thrust; airway opening maneuvers; the

recovery position (Gábor maneuver)

7th week:
Practical: Practicing the chest compression
Practicing the ventilation

8th week:
Practical: CPR training without equipment

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

10th week:
Practical: Practical examination

11th 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

12th week:
Practical: Bandages for head, nose; ears, eyes; chin, body and extremities; practicing the bandages

13th 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

14th week:
Practical: Practice
Self Control Test

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.

Sport Center of University Debrecen

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

Practical: 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 Anatomy, Histology and Embryology

Subject: **ANATOMY II**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **53**
Seminar: **15**
Practical: **7**

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: (5) Epithelial tissue. (6) Connective tissue, adipose tissue. (7) Cardiac and smooth muscles. (8) Histology of blood vessels.

3rd week:
Lecture: (9) Blood. (10) Bone marrow and blood formation. (11) Histology of the lymphatic organs. (12) Cellular and molecular bases of the immunity
Seminar: (1-2) General embryology.

4th week:
Lecture: (13-14) Heart. (15) Circulatory system, the vascular system of the embryo
Seminar: (3-4) General histology

5th week:
Lecture: (16) The nasal cavity, the pharynx and the larynx, the mediastinum. (17) The trachea, lungs and pleura. (18) The histology of the respiratory system
Seminar: (5) The anatomy of the heart
Practical: (1) The anatomy of the heart
Self Control Test (Witten midterm exam of general embryology and histology.)

6th week:
Lecture: (19) The oral cavity, salivary glands, teeth. (20) The oesophagus, the stomach, small and large intestines. (21) The pancreas, the liver. (22) The kidney
Seminar: (6) The anatomy of the respiratory system
Practical: (2) The anatomy of the respiratory system.

7th week:
Lecture: (23) The urinary system. (24) Male genital organs. (25) Female genital organs, the menstrual cycle. (26) The perineum; the mammary gland
Seminar: (7) The anatomy of alimentary system
Practical: (3) The anatomy of alimentary system

8th week:
Lecture: (27) The development of the nervous system – neurohistogenesis. (28) The histology of the nervous system. (29) Axonal transport; degeneration and regeneration in the nervous system. (30) The chemical synapses
Seminar: (8) The anatomy the urogenital apparatus
Practical: (4) The anatomy the urogenital apparatus

9th week:
Lecture: (31) Parts of the nervous system, the ventricles. (32) The meninges, blood supply of the brain, the cerebrospinal fluid. (33) The structure and nerves of the spinal cord.
Self Control Test (Oral midterm exam (Cardiovascular, respiratory, alimentary and urogenital systems).)

10th week:
Lecture: (34) The structure of the brainstem, the nuclei of cranial nerves. (35) The diencephalon. (36) The forebrain. (37) The cerebellum
Seminar: (9) Structure of the spinal cord and spinal nerves
Practical: (5) Gross anatomy of the spinal cord

11th week:
Lecture: (38) General principles of the somatosensory system, the skin. (39) Somatovisceral sensory functions. (40) The somatomotor system. (41) Roles of the spinal cord in the coordination of movements, the motor unit
Seminar: (10) Structure of the brainstem and cranial nerves
Practical: (6) Gross anatomy of the brainstem and cerebellum

12th week:
Lecture: (42) The parts of the motor system. (43) The pyramidal pathways, roles of cerebellum in the coordination of movements. (44) The autonomic nervous system. (45) The limbic system
Seminar: (11-12) Structure of the diencephalon and cerebrum

13th week:
Lecture: (46) The monoaminergic system, neuroendocrine regulation. (47) The hypothalamo-hypophyseal system. (48) The endocrine glands. (49) The taste and olfactory systems
Seminar: (13-14) Motor functions of the nervous system

14th week:
Lecture: (50) The eye. (51) The visual system. (52) The auditory system. (53) The vestibular system
Seminar: (15) The sensory organs
Practical: (7) The sensory organs

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

Requirements

Prerequirement: Anatomy I

Requirements:
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	Grade
18-20	pass (2)
21-23	satisfactory (3)
24-26	good (4)
27-30	excellent (5)

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 least 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	Grade
6	pass (2)
7	satisfactory (3)
8	good (4)
9-10	excellent (5)

Department of Behavioural Sciences

Subject: **COMMUNICATION SKILLS**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **10**
Practical: **20**

1st week:
Lecture: Introduction to communication theory
Practical: Discussion of communication theory

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

3rd week:
Lecture: Verbal communication
Practical: Verbal communication

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

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

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

7th week:
Lecture: Communication and interpersonal awareness

Practical: Communication and interpersonal awareness

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

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

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

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

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

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

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

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

Requirements

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

Department of Foreign Languages

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

1st week:

st

Practical: Repetition and revision of 1 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 minimum requirement exam.

Requirements

Prerequisite: Hungarian Language I

Attendance: Language class attendance is compulsory. The maximum percentage of allowable absences is 10 % which is a total of 2 out of the 15 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 final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students' behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a "minus" (-). If a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

Testing, evaluation: In each Hungarian language course, students must sit for 2 written language tests and a short minimal oral exam. A further minimum requirement is the knowledge of 200 words per semester announced on the first week. There is a (written or oral) word quiz in the first 5-10 minutes of the class, every week. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam that includes all 200 words along with the oral exam. The results of word quizzes are added to the average score of the written tests. The oral exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral exam results in failing the whole course. The result of the oral exam is added to the average of the mid-term and end-term tests.

Based on the final score the signature is refused below 60%. If the final score is below 60, the student once can take an oral remedial exam covering the whole semester's material.

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.

Course book: See the website of the department.
Website: Oral exam topics and vocabulary minimum lists are available from the website of the Department of Foreign Languages: http://ilekt.med.unideb.hu.

Department of Health Management and Quality Assurance

Subject: **ECONOMICS**
Year, Semester: 1st year/2nd 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.

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

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

2nd week:
Lecture: The legal system, environment

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

4th week:
Lecture: Law and courts

5th week:
Lecture: Law in the medical workplace

6th week:
Lecture: Management of medical information

7th week:
Lecture: The medical record, informed consent

8th week:
Lecture: Physician-patient relationship, patients' rights

9th week:
Lecture: Physicians' rights and obligations

10th week:
Lecture: Professional liability and malpractice

11th week:
Lecture: Medical liability

12th week:
Lecture: Ethic in the health care workplace

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.

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

1st week:
Lecture: Introduction to management

2nd week:
Lecture: Strategic management

3rd week:
Lecture: Identifying values, setting and attaining goals

4th week:
Lecture: Time management issues

5th week:
Lecture: How to delegate

6th week:
Lecture: How to deal with conflict - conflict management issues

7th week:
Lecture: Basics of quality management

8th week:
Lecture: How to get your point across - the art of presentation

9th week:
Lecture: Management, leadership, and employee empowerment

10th week:
Lecture: Performance assessment

11th week:
Lecture: Motivating employees and building teams

12th week:
Lecture: Human resource management: finding and keeping the best employees; dealing with employee-management issues and relationships

13th week:
Lecture: Labour law from the perspectives of management

14th week:
Lecture: Entrepreneurship and starting a small business

15th week:
Lecture: Consultation

Requirements

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

Department of Orthopedic Surgery

Subject: **BIOMECHANICS**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **20**
Seminar: **10**

1st week:
Lecture: The histological structure of bones, bone forming cells. Biomechanical examination, morphology and rheology of bones

2nd week:
Lecture: Fracture and healing of bones. The biomechanics of fracture healing. The function and morphology of skeletal muscle

3rd week:
Lecture: The definition and history of biomechanics

4th week:
Lecture: Tissue mechanics. Static examination of bones

5th week:
Lecture: The skeleton as a system of organs. Bone and aging

6th week:
Lecture: Bone formation, bone development. The modeling and remodelingof bones. Laws of biomechanics

7th week:
Lecture: Introduction to research projects based on biomechanical examination

8th week:
Lecture: Introduction to research projects based on biomechanical measurement

9th week:
Lecture: Practical demonstration in the biomechanical laboratory

10th week:
Lecture: Consultation

11th week:
Seminar: Introduction to Moodle course.

12th week:
Seminar: Medical application of metal foams. Searching the literature and description of products.

13th week:
Seminar: The effect of spinal rod loosening. Searching the literature and description of products.

14th week:
Seminar: Discussion of results in the searching the literature and products. Presentation of findings.

15th week:
Seminar: Discussion of results in the searching the literature and products. Presentation of findings.

Requirements

The prerequisite of subject is Biophysics.

The attendance at lectures is strongly suggested, the attendance at seminars is compulsory. If you have more than 4-hour absence at seminars (consultations) or do not show activity in the e-learning module, the signature will be refused.

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

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

- 0-54%: fail (1)
- 55-64%: pass (2)
- 65-74%: satisfactory (3)
- 75-84%: good (4)
- 85-100%: excellent (5)

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

Department of Physiotherapy

Subject: **KINESIOLOGY I**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **30**
Seminar: **30**
Practical: **60**

1st week:
Lecture: Kinematics, introduction to kinetics; description of motion, planes and axes; definition of forces, vectors, gravitational force. Introduction to statics and dynamics; muscle forces: total force vector, lever system, force components
Seminar: Review of the anatomy of the trunk muscles, general rules of physical exercises, body positions used in the physiotherapy.
Practical: Examination: Physiotherapeutic methods, principles and rules in the physiotherapy;Analysis: General rules of physical exercises, body positions used in the physiotherapy

2nd week:
Lecture: Materials in human joints; general properties of connective tissue; complexity of joint design and function; elements of muscle structure and function
Seminar: Movement terminology rudiments: elongation, isometric and isotonic muscle contractions, synergisms. Fundamentals in physical examination
Practical: Examination: SOAP NOTE. Instrumentation in physical examination; joint range of motion. Movement terminology;Analysis: elongation, isometric and isotonic muscle contractions, synergisms (practical examples)

3rd 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
Seminar: Examinations in pathological states, based on James Cyriax's theory
Practical: Examination: Assessment of active and passive range of motion. Physiological and pathological end feels; Analysis: 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: Structure and function of the sacral region: sacroiliac and symphysis pubis articulation
Seminar: Anamnesis and inspection of the pelvis
Practical: Examination: Physical examination of the pelvis; Analysis: Strengthening exercises of the truncal flexors launched from supine position, and on oblique desk

5th week:
Lecture: Structure and function of the lumbar region: typical lumbar vertebra, articulations, kinematics and kinetics
Seminar: Analysing movements of trunk flexors and extensors in different positions.
Practical: Examination: Examinations of pathological signs in the pelvic region;Analysis: Dictation exercises for trunk flexors in different positions by taking the principle of gradation into consideration: with and without instruments, in pairs

6th week:
Lecture: Effect of muscles on lumbar and sacral regions
Seminar: Anamnesis and inspection of the lumbar spine
Practical: Examination: Physical examination of the lumbar spine; Analysis: 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: Structure and function of the thoracic region: typical thoracic vertebra, articulations, kinematics and kinetics
Seminar: Analysing movements of trunk rotators and lateralflexores in different positions
Practical: Examination: Examinations of pathological signs in the lumbar region; differential diagnostics; Analysis: 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
Seminar: Repetition
Practical: Examination: Repetition; Analysis: Active exercises of the truncal extensors in different positions by taking the principle of gradation into consideration: with and without instruments, in pairs

9th week:
Lecture: Diaphragm, muscles associated with rib cage. Respiratory function
Seminar: Physical examination of the thoracic spine Anamnesis and inspection of the thoracic spine
Practical: Examination: Physical examination of the neck: amannaesis and inspection;Analysis: 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
Seminar: Physical examination of the thoracic spine
Practical: Examination: Examination of the thoracic spine in pathological conditions; Analysis: 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
Seminar: Physical examination of the neck: anamnaesis and inspection
Practical: Examination: Physical examination of the neck;Analysis: 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
Seminar: Examination of the neck in pathological states
Practical: Examination: Examination of the neck in pathological states;Analysis: Repetition

13th week:
Lecture: Components of the shoulder complex: sterno-clavicular, acromio-clavicular, scapulo-thoracic and gleno-humeral joints
Seminar: Repetition
Practical: Examination: Repetition; Analysis: Repetition

14th week:
Lecture: Structure and function of the gleno-humeral joints. Static and dynamic stabilization
Seminar: Practice exam
Practical: Examination: Practice exam; Analysis: Practice exam

15th week:
Lecture: Integrated function of the shoulder complex
Seminar: Practice exam
Practical: Examination: Practice exam; Analysis: Practice exam

Requirements

Prerequisite: Anatomy I, Basics of Physiotherapy

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

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: **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 overSummary 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.

Division of Cell Biology

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

1st week:
Lecture: (1-2) Cell structure

2nd week:
Lecture: (3-4) Chemical Compounds of the Cell

3rd week:
Lecture: (5-6) Membranes, membrane transport

4th week:
Lecture: (7-8) Signal Transduction

5th week:
Lecture: (9-10) Vesicular Structures and Transport

6th week:
Lecture: Self control test 1
Self Control Test (Topics in the lecture 1-10)

7th week:
Lecture: (13-14) The Nucleus, DNA and Chromatin Structure

8th week:
Lecture: (15-16) Cytoskeleton, Motility

9th week:
Lecture: (17-18) Mitochondrion, Cell-Cell Contacts

10th week:
Lecture: (19-20) Ion Channels, Membrane Potential, Calcium homeostasis

11th week:
Lecture: (21-22) Cell Cycle, Meiosis, Mitosis

12th week:
Lecture: Self control test 2
Self Control Test (Topics in the lecture 11-22)

13th week:
Lecture: (25-26) Consultation

14th week:
Lecture: Pre-exam
Self Control Test (Pre-exam)

15th week:
Lecture: (29-30) Consultation

Requirements

Attendance at lectures is highly recommended. Students participating at all the lectures receive 10 bonus points.
There will be two self-control tests during the semester. Exemption from the final exam or bonus points towards the final grade are offered based on the result of these tests. The first test covers the material in lectures up to this test; the second covers the remaining material (lectured about between the first and second tests. In addition, a pre-exam is offered, covering the whole material, at the end of the teaching period. A final grade is offered based on the result of this pre-exam. If the student accepts the offered grade, it is still possible to take an improvement exam later, in compliance with the University's regulations. All tests, pre-exams and exams are written. As per the regulations, C chances and final chances have an oral component as well that are conducted in the presence of a chairperson from another department. The oral audition is comprised of 3 short, simple questions that must be answered immediately and correctly. Failure to answer correctly any one of them results in an immediate "failed" evaluation of the exam.

All self-controls and exams consist of two parts. The first part is a test (T), the second is an Assay (A) part, which are evaluated jointly. Part T is a test series of simple and multiple choice, and True/False type questions. Part A is a series of mini-assays based on the key words provided during the semester. Part A is only evaluated if the score on part T is at least 50%. Self-control scores and exam scores are calculated along the scheme below (percentage results on the test and assay parts are denoted by T and A).

First self-control: if Tis above50%, D1=T+A
Second self-control: if T is above 50%, D2=T+A
Grade based on self-controls is offered according to the final score, which is calculated as F=(D1+D2)/4.
If this score does not convert to a passing, or better grade, we still offer bonus points: B=(D1+D2)/40.

Calculating the result of pre-exams and exams:
If T<50%, the result is a fail. Otherwise, a final score is calculated as F=(T+A)/2+B.
That is, the result of the written exam, which, from parts T and A can maximally yield (100+100)/2=100 points, are topped up with the bonus point gained during the two self-controls.
The final score F (whether offered from self-controls or gained in pre-exams or exams) is converted to a grade as follows:

Excellent (5): above 85
Good (4): between 75-84
Satisfactory (3): between 55-74
Pass (2): between 45-54
Fail (1): below 45.

In general, it is a good strategy to prepare for the self-controls, as it is possible to pass the course by preparing for half of the whole material at a time, and, even if a passing grade is not offered, bonuses are allocated that help improve the final grade either at the pre-exam or at the exams.

Sport Center of University Debrecen

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

Practical: 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

CHAPTER 10
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.

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. Gluconeogenesis.

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

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

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.

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

8th week:
Lecture: self-control test I. Week 1-7.
Self Control Test (topics of 1st-7th weeks)

9th week:
Lecture: Lipid metabolism IV. Lipoproteins in blood plasma. Cholesterol transport in the body. Biochemical explanation of elevated blood cholesterol level.

10th week:
Lecture: Amino acid metabolism I. 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. . Formation and elimination of ammonia in the body. Nitrogen transport between the tissues.

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. 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, carnitine, cathecolamines.

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.

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.

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. Carbohydrates and lipids. Pathological mechanisms in obesity. Vitamins: structure and biochemical functions. Relationship between the biochemical functions and the symptoms of deficiency.

15th week:
Lecture: self-control test Week 9-14.
Self Control Test (topics of 7-14th weeks)

Requirements

Requirements
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.
Attendance at the lectures is highly recommended. Attendance at seminars is obligatory.The signature of the Lecture Book is refused if a student is absent from more than 2 seminars. Seminars will be given by the lecturer (or his/her colleague) based on the previous week's lecture material. Additional possibilities for consultation are provided by the lecturer on Thursdays between 15 and 16 pm. in her office.
Lecture presentations with short explanations are available on the web page of the department: (http://bmbi.med.unideb.hu). (Downloads/educational in English/Physiotherapists/Basic Biochemistry/2014

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

1st week:
Lecture: Biochemistry of the liver. Biotransformation. Ethanol metabolism, biochemical consequences of ethanol consumption.
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 liver, biotransformation.

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

Prerequisite: Basic Biochemistry

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 seminar. 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
Number of teaching hours:
Practical: **30**

1st week:
Practical: Repetition. Pretest.

2nd week:
Practical: Bemutatkozás (létige ismétlése)

3rd week:
Practical: Foglalkozások (igék, helyragok ismétlése)

4th week:
Practical: A családom (birtokos személyragok ismétlése)

5th week:
Practical: Emberek leírása (test, melléknevek)

6th week:
Practical: Emberek leírása (test, birtoklás ismétlése)

7th week:
Practical: Összehasonlítás

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

9th week:
Practical: Napirend

10th week:
Practical: Szabadidő, időjárás

11th week:
Practical: Hobbi, sport (gyakoriság)

12th week:
Practical: Mit csináltál tegnap?

13th week:
Practical: Milyen volt a hétvégéd?

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

15th week:
Practical: Oral minimum exam. Evaluation.

Requirements

Prerequisite: Hungarian Language II

Attendance: Language class attendance is compulsory. The maximum percentage of allowable absences is 10 % which is a total of 2 out of the 15 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 final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students' behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a "minus" (-). If a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

Testing, evaluation: In each Hungarian language course, students must sit for 2 written language tests and a short minimal oral exam. A further minimum requirement is the knowledge of 200 words per semester announced on the first week. There is a (written or oral) word quiz in the first 5-

10 minutes of the class, every week. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam that includes all 200 words along with the oral exam. The results of word quizzes are added to the average score of the written tests. The oral exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral exam results in failing the whole course. The result of the oral exam is added to the average of the mid-term and end-term tests.

Based on the final score the signature is refused below 60%. If the final score is below 60, the student once can take an oral remedial exam covering the whole semester's material.

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.

Course book: See the website of the department.
Website: Oral exam topics and vocabulary minimum lists are available from the website of the Department of Foreign Languages: http://ilekt.med.unideb.hu.

Department of Physiology

Subject: **NEUROPHYSIOLOGY**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **15**
Seminar: **10**
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: Function of the sensory cortex; disorders of sensory function

3rd 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: Somatosensory function of CNS

4th week:
Lecture: Reflex control of posture, the vestibular apparatus as receptor structure; distribution of muscle tone
Seminar: Somatomotor function of CNS
Self Control Test (Elementary neural processes, Sensory function of CNS)

5th week:
Lecture: Role of the brainstem in the movement regulation; cortical mechanisms; role of the cerebellum in the coordination of movement; dysfunction of motoric system at various level of regulation
Seminar: Posture and coordination

6th week:
Lecture: Skeletal muscles as effectors: motor unit; electric properties of skeletal muscle;

characteristics of mechanical response; regulation of muscle tone; neuromuscular synaptic transmission; myasthenia gravis; dysfunctions of skeletal muscles with myogenic and neurogenic origin; denervation and inactivity atrophy

7th 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
Practical: Neurological examinations

8th week:
Lecture: Consultation
Self Control Test (Motor function of the CNS)

Requirements

Prerequisite: 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.

E-learning course is attached to the contact hours. You can collect scores in the e-learning module. At the end of the semester you take an end-semester exam (ESE) consisting of a written and an oral parts. The scores collected in the e-learning module will be taken into consideration in the evaluation of the test. The final grade will be the average results of the written and oral parts. Further information about the e-learning program will be announced during the first lecture.

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

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

Prerequisite: Anatomy II

Signature of Lecture Book: Attendance at lectures is strongly recommended and at seminars is compulsory. The signature of the Lecture Book may be refused for the semester in the cases of absences from more than two seminars. The repeaters are not exempted automatically from attending the seminars, you must apply for exam course if you have technical problems regarding the attending the seminars.

For continuous updates on all education-related maters, please check the departmental web-site (http://phys.dote.hu). The lectures of Physiology are listed at the web site of the Department of Physiology (http://phys.dote.hu)

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

Examination: The semester is closed by the end-semester (ESE) exam covering the topics of all lectures, seminars. It is not compulsory to take the ESE if the average of mid-semesters test reaches or higher than the passing limit (55%) and none of the individual tests' results are less than 40%. The mark based on the average score of mid-semester tests is calculated according to the following table: 0 – 54 % fail (1), 55 – 64 % pass (2), 65 – 74 % satisfactory (3), 75 – 84 % good (4), 85 – 100 % excellent (5). If one is not satisfied with this result, (s)he may participate in ESE during the examination period. A and B chances are written tests, C chance is oral exam.

Department of Physiotherapy

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

Topics: (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 tissuesBody fluid compartments, internal environment, homeostasis (4) Body fluid compartments; structure and permeability of the capillary wall; characteristics of the transcapillary transport processes (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; disturbancesStructure 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 respirationStructure 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 diarrhoeaStructure 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 uraemiaHormonal 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 adaptationStructure 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; 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 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).

Subject: **CARDIORESPIRATORY AND EXERCISE PHYSIOLOGY**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **15**
Seminar: **5**
Practical: **12**

8th week:
Lecture: Impulse generation and conduction in the heart in normal and pathological conditions; myogenic and neural regulation of cardiac output; factors affecting cardiac performance; role of Starling mechanism in pathologic conditions
Practical: Discussion of clinical relations (disorders of impulse generation and conduction); analysis of abnormal ECG records

9th week:
Lecture: Main features of coronary circulation; oxygen consumption and physical work. Aspects of cardiac performance; metabolic demand for physical activity
Practical: Analysis of abnormal ECG records

10th 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 sound; changes in cardiovascular parameters during physical activity, restoration

11th week:
Lecture: Regional circulation during physical activity, redistribution of cardiac output. Characteristics of circulation and changes in the flow during physical exercise in the skeletal muscle vessels
Practical: Case studies

12th week:
Lecture: Microcirculatory system, effects of physical exercise on its function; venous circulation, improvement the venous return by physical exercise
Seminar: Summary: neural and humoral factors acting on the precapillary vessels

13th week:
Lecture: Mechanical aspects of respiration; resistance of airways; static and dynamic respiratory parameters; factors affecting respiratory minute volume; effects of physical exercise on respiration
Practical: Obstructive and restrictive respiratory disorders, pathophysiology, analysis of respiratory parameters; analysis of respiratory parameters during physical activity

14th week:
Lecture: Alveolar gas exchange in normal and pathological conditions; chemical and neural regulation of respiration; energetic aspects of physical work; metabolic changes during physical activity; physical activity and thermoregulation
Seminar: Normal and pathological breathing patterns; long term adaptation of cardiorespiratory system to physical activity
Practical: Case studies

15th week:
Lecture: Consultation
Seminar: Evaluation of the e-learning activity.

Requirements

Prerequisite: 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.
E-learning course is attached to the contact hours. You can collect scores in the e-learning module. At the end of the semester you take an end-semester exam (ESE) consisting of a written and an oral parts. The scores collected in the e-learning module will be taken into consideration in the evaluation of the test. The final grade will be the average results of the written and oral parts. Further information about the e-learning program will be announced during the first lecture.

The selected topics in Cardiorespiratory and Exercise Physiology are constitutive parts of the comprehensive examination "Basics of Health Sciences".

Subject: **GERONTOLOGY**
Year, Semester: 2nd year/1st 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: Basics of Sociology

Attendance at lectures is highly recommended, 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.

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

4thweek:
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

Prerequisites: General Principles in Health Care and Nursing, Anatomy II

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.

Subject: **KINESIOLOGY II**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **30**
Seminar: **15**
Practical: **120**

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
Seminar: Review of the anatomy of the upper limb
Practical: Examination: Physical examination of the shoulder and the shoulder girdle; Analysis: Active exercises of the shoulder in different positions

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
Seminar: General rules of physical exercises on extremities
Practical: Examination: Examination of the shoulder in pathological cases; Analysis: Active exercises of the elbow 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
Seminar: Analysing movements of the muscles of the upper limb I
Practical: Examination: Physical examination of the elbow; Analysis: Active exercises of the wrist 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
Seminar: Analysing movements of the muscles of the upper limb II
Practical: Examination: Examination of the elbow in pathological states; Analysis: Active exercises of the hand and thumb in different

positions

5th week:
Lecture: Structure of the thumb
Practical: Examination: Physiological and pathological examination of the wrist and hand;Analysis: Repetition

6th week:
Lecture: Axes of the lower extremities
Seminar: Review of the anatomy of the lower limb
Practical: Examination: Physiological axes and their deviations: examination and differential diagnosis; Analysis: Active exercises of the hip in different positions

7th week:
Lecture: The ankle and foot complex: plantar arches – structure and function
Practical: Examination: Physiological examination of the ankle and plantar arches; Analysis: Active gait exercises

8th week:
Lecture: The ankle and foot complex: ankle, subtalar and transverse tarsal joints. Action of muscles
Practical: Examination: Examination of the ankle and plantar arches in pathological states; Analysis: Repetition

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

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

11th week:
Lecture: The ankle and foot complex: plantar arches – structure and function
Seminar: Analysing movements of the muscles of the lower limb I
Practical: Examination:Physical examination of the hip; Analysis: Active exercises of the hip in different positions

12th week:
Lecture: The ankle and foot complex: ankle, subtalar and transverse tarsal joints. Action of muscles
Seminar: Analysing movements of the muscles of the lower limb II
Practical: Examination: Hip joint pathology; Analysis: Active exercises of the hip in different positions

13th week:
Lecture: Static and dynamic posture. Analysis of standing posture
Practical: Examination: Examination of the posture and gait. Summary; Analysis: Summary of analysis of the upper limb and lower limb, consultation

14th week:
Lecture: Locomotion: kinematics, kinetics
Practical: Examination: Practical exam; Analysis: Practical exam

15th week:
Lecture: Pathological gaits
Practical: Examination: Practical exam; Analysis: Practical exam

Requirements

Prerequisite: Kinesiology I

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance at seminars and practices is compulsory. If you missed more than 2 seminars or 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. The oral exam is allowed only after passing the minimum requirement of a written exam. The limit is 60%.

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: Data sources

10th week:
Lecture: Measures of occurrence and association

11th week:
Lecture: Designing a scientific inquiry (study design)

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

Prerequisite: Basics of Informatics
Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. E-learning course completes the course material.
Examination: written

Department of Foreign Languages

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE I**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: **45**

1st week:
Practical: Revision

2nd week:
Practical: Pretest

3rd week:
Practical: 6. lecke Melyik a jobb?

4th week:
Practical: 6. lecke Melyik a jobb?

5th week:
Practical: 7. lecke Napirend

6th week:
Practical: 7. lecke Napirend

7th week:
Practical: Revision. Mid-term test

8th week:
Practical: 8. lecke Szabadidő
Self Control Test

9th week:
Practical: 8. lecke Szabadidő

10th week:
Practical: 9. lecke Hol voltál tegnap?

11th week:
Practical: 9. lecke Hol voltál tegnap?

12th week:
Practical: 10. lecke Mit csináltál tegnap?

13th week:
Practical: 10. lecke Mit csináltál tegnap?

14th week:
Practical: Revision. Endterm test
Self Control Test

15th week:
Practical: Assessment and evaluation

Requirements

Prerequisite: Hungarian Language III, Kinesiology II

Attendance: Language class attendance is compulsory. The maximum percentage of allowable absences is 10 % which is a total of 2 out of the 15 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 final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students' behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a "minus" (-). If a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

Testing, evaluation: In each Hungarian language course, students must sit for 2 written language tests and a short minimal oral exam. A further minimum requirement is the knowledge of 200 words per semester announced on the first week. There is a (written or oral) word quiz in the first 5-10 minutes of the class, every week. If a student has 5 or more failed or missed word quizzes he/she

has to take a vocabulary exam that includes all 200 words along with the oral exam. The results of word quizzes are added to the average score of the written tests.

The oral exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral exam results in failing the whole course. The result of the oral exam is added to the average of the mid-term and end-term tests.

Based on the final score the grades are given 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 whole semester's material.

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.

Course book: See the website of the department.
Website: Oral exam topics and vocabulary minimum lists are available from the website of the Department of Foreign Languages: http://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. Cerebrovascular disorders

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: Cardiorespiratory and Exercise Physiology, Neurophysiology

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

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: Physiology, Cardioresp. and Exercise 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.

Subject: **DIETETICS**
Year, Semester: 2nd year/2nd 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: General Principles of Patient Care and Nursing, Physiology

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.

Subject: **ELECTRO-, BALNEO-, HYDRO-, AND CLIMATOTHERAPY**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

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

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

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, Cardiorespiratory and Exercise Physiology, Neurophysiology

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. If you have an acceptable reason for the absence you may be allowed to take part at the practical hours of another group (if there is). 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.

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

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; thromboembolisms (arterial and venous). Sudden black-out; acute chest pain; sudden cardiac death. Reasons, symptoms and treatment of stroke; reasons; diagnostics and emergency supply of coma

5th week:
Lecture: Anaemias, polyglobulia polycythaemia; agranulocytosis; leukaemias; lymphomas; precancerous states; diagnostics and treatment in malignant diseases

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. Physical and instrumental examinatons in the respiratory diseases; infections of the upper airways; pneumonias; bronchitises

8th week:
Lecture: Lecture: Pulmonary tuberculosis; pulmonary tumours; pleural diseases; bronchial asthma; emphysema; respiratory insufficiency
Seminar: Cardiology I (physical and instrumental examinations in the cardiovascular diseases; disorders of the cardiac valves; diseases of the endocardium and pericardium; cardiac asthma; cor pulmonale)

9th week:
Lecture: Diseases of the oral cavity, the oesophagus and the stomach; intestinal diseases; Acute gastrointestinal bleeding; emergency interventions in acute gastrointestinal haemorrhage
Seminar: Cardiology II (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)

10th week:
Lecture: Parenchymal disorders in the liver; jaundices; hepatic inflammations; hepatic cirrhosis; abscess and tumours in the liver. Diseases of the gall bladder and hepatic ducts; gall stone; peritonitis; acute and chronic pancreatitis; pancretic tumours
Seminar: Reasons, diagnosis and treatment of hypertension; emergency supply in hypertension crisis; thromboembolisms (arterial and venous)

11th week:
Lecture: Bacterial infections of the urogenital system; renal diseases with immunopathogenic origin; glomerulonephritises. Acute and chronic renal insufficiency; dialysis
Seminar: Pulmonology (Physical and instrumental examinatons in the respiratory diseases; infections of the upper airways; pneumonias; bronchitises, pulmonary tuberculosis; pulmonary tumours; pleural diseases; bronchial asthma; emphysema; respiratory insufficiency)

12th week:
Lecture: Diseases of the thyroid gland; hyper- and hypothyroidism; tumours in the thyroid gland Diseases of the parathyroid gland; hyperparathyroidism; diseases of the adrenal medulla and cortex; pheochromocytoma; Addison disease
Seminar: Gastroenterology (Acute gastrointestinal bleeding; emergency interventions in acute gastrointestinal haemorrhage, Parenchymal disorders in the liver; jaundices; hepatic inflammations; hepatic cirrhosis)

13th week:
Lecture: Diabetes mellitus type 1 and type 2. Complications of diabetes mellitus; hyper- and hypoglycaemic coma; pathologic leanness and obesity; deficiency diseases (hypo- and avitaminoses)
Seminar: Nephrology, endocrinology (Bacterial infections of the urogenital system; Acute and chronic renal insufficiency; dialysis, Diseases of the thyroid gland; hyper- and hypothyroidism; diseases of the adrenal medulla and cortex)

14th week:
Lecture: Hematologic disorders, hemophilia, thrombophilia
Seminar: Diabetes mellitus type 1 and type 2. Complications of diabetes mellitus; hyper- and hypoglycaemic coma; pathologic leanness and obesity

15th week:
Lecture: Consultation

Seminar: Hematologic disorders (Anaemias; agranulocytosis; leukaemias; lymphomas; hemophilia) (1 hr)

Requirements

Prerequisite: Physiology, Introduction to Clinical Medicine.

The attendance at lectures is highly recommended, the attendance at seminars is compulsory. More than 4-hour absence at the seminars will lead to refuse of signature.

Subject: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS II**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **15**
Seminar: **20**
Practical: **10**

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

Prerequisite: Cardiorespiratory and Exercise Physiology, Introduction to Clinical Medicine

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 midterm 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.

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

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, 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.

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

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

Requirements

Prerequisite: Kinesiology II

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

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

Subject: **MOBILIZATION-MANUAL TECHNIQUES I**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: **10**
Seminar: **15**
Practical: **90**

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

2nd week:
Lecture: PNF: Basic procedures of the PNF. Specific treatment goals
Seminar: Massage: basic techniques in Swedish massage; special, complementary techniques; theoretical knowledge of Swedish massage treatment of the back, the neck-shoulder girdle region, chest and abdomen
Practical: (1) Massage: Swedish massage treatment of the back (2) Passive mobilization: passive mobilization of the neck (3) Stretching: demonstration of the stretching techniques; practice (4) PNF I: Examination of diagonal movements

3rd week:
Lecture: PNF: Fundamentals of the patterns, assessment, manual contact, resistant
Practical: (1) Massage: palpation of the muscles in the neck-shoulder girdle complex; qualitative evaluation of the muscular tone; Swedish massage treatment of the neck-shoulder girdle region (2) Passive mobilization: passive mobilization of the lumbar and thoracic spine (3) 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:
Lecture: Stretching: Definitions, theoretical elements of stretching

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:
Lecture: Passive mobilization: general purposes of the passive mobilization, theoretical elements of passive mobilization
Seminar: Massage: Theoretical knowledge of Swedish massage treatment of the lumbar-gluteal region and lower limb
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:
Seminar: 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
Practical: (1) Massage: examination of Head and MacKenzie zones (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:
Seminar: Massage: the aim and application fields of the segment massage, duration, techniques
Practical: (1) Massage: preceding examinations of the patients; structure of the segment massage; practising techniques (2) Passive mobilization: passive mobilization of the wrist and hand joints (3) 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 ischiocrural group (4) PNF I: leg patterns; flexion-abduction-internal rotation; extension-adduction-external rotation

10th week:
Seminar: Seminar: 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

Practical: (1) Massage: examination of patient, practising techniques of the connective tissue massage (2) Passive mobilization: passive mobilization of the ankle and toe joints (3) 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:
Seminar: Massage: theoretical knowledge of the connective tissue massage treatment of the pelvis, trunk, scapula, chest, upper limbs and lower limbs
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:
Seminar: Summary
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

Prerequisites: Kinesiology II, Neurophysiology

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.

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

Practical: 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

Prerequisite: Internal Medicine for Physiotherapists II

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.

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 Practice Lecture Book. 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.

Department of Radiology

Subject: **RADIOLOGY AND DIAGNOSTIC IMAGING**
Year, Semester: 2nd 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.

CHAPTER 11
ACADEMIC PROGRAM FOR THE 3RD YEAR

Department of Foreign Languages

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE II**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Practical: **45**

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.
Self Control 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
Self Control Test

15th week:
Practical: Assessment, evaluation

Requirements

Prerequisite. Professional Hungarian Language I

Attendance: Language class attendance is compulsory. The maximum percentage of allowable absences is 10 % which is a total of 2 out of the 15 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 final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students' behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a "minus" (-). If a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

Testing, evaluation: In each Hungarian language course, students must sit for 2 written language tests and a short minimal oral exam. A further minimum requirement is the knowledge of 200 words per semester announced on the first week. There is a (written or oral) word quiz in the first 5-10 minutes of the class, every week. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam that includes all 200 words along with the oral exam. The results of word quizzes are added to the average score of the written tests.

The oral exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral exam results in failing the whole course. The result of the oral exam is added to the average of the mid-term and end-term tests.

Based on the final score the grades are given 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 whole semester's material.

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.

Course book: See the website of the department.
Website: Oral exam topics and vocabulary minimum lists are available from the website of the Department of Foreign Languages: http://ilekt.med.unideb.hu.

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: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS III**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **15**
Seminar: **15**
Practical: **30**

1st week:
Lecture: Blood vessels, lymphatic circulation (repetition)
Seminar: Principles of examination
Practical: 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. Discussion
Practical: Functional examinations of the arteries and veins, special tests. Practice

3rd week:
Lecture: Acute and chronic diseases of the arteries

Seminar: Discussion of physiotherapeutic procedures
Practical: Physiotherapeutic treatment in arterial diseases (Fontaine stage I and II)

4th week:
Lecture: Role of the movement therapy in the treatment of arterial diseases
Seminar: Discussion of the lectured topics
Practical: Physiotherapeutic treatment of arterial diseases (Fontaine stage III and IV)

5th week:
Lecture: Diseases of the venous system
Seminar: Physiotherapy in the acute venous diseases. Discussion
Practical: Physiotherapy in the acute venous diseases. Practice

6th week:
Lecture: Role of the movement therapy in the treatment of venous diseases
Seminar: Methods of physiotherapy in the chronic 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 the lymphedema
Practical: Lymphdrainage

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. Discussion
Practical: Treatment of the tunnel syndromes by physiotherapeutic methods. Practice
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
Practical: Methods of physiotherapy

10th week:
Lecture: Cardiovascular rehabilitation: movement therapy in the acute stage
Seminar: Acute myocardial infarct. Physiotherapy in the postinfarct stage (early mobilization)
Practical: 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
Seminar: Principles of physiotherapy after myocardial infarct
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. Discussion
Practical: Pre- and postoperative movement therapy for heart-operated patients. Practice

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. Discussion
Practical: Physiotherapy for patients suffering from hypertension. Practice

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

15th week:
Lecture: Closing remarks

Seminar: Closing remarks
Practical: Practical examination

Self Control Test

Requirements

Prerequisite: Internal Medicine for Physiotherapists II

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.

A 15-hour clinical demonstration completes the practices.

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 joints and scapulo-thoracic functional attachment. 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 ankle and foot complex: traction and mobilization of the ankle, subtalar and transverse tarsal joints. Test and therapy(3) PNF II: Mat activities: gait training

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 hip complex: traction, sliding and mobilization.(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.

Subject: **OBSTETRICS AND GYNAECOLOGY FOR PHYSIOTHERAPISTS**
Year, Semester: 3rd year/1st 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

8th week:
Practical: (1) Complex training during pregnancy

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 I

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

The grade of ESe will be constructed on the basis of midterm assessments.

Subject: **ORTHOPAEDICS FOR PHYSIOTHERAPISTS**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **10**
Seminar: **20**

1st week:
Lecture: Frequency, pathology and diagnosis, conservative and operative treatment of congenital/developmental dysplasia, dislocation of the hip (DDH, CDH)

2nd week:
Lecture: Perthes' disease, transient synovitis of the hip joint. Slipped capital femoral epiphysis.Coxa vara

3rd week:
Lecture: Osteoarthritis of the hip. Aseptic necrosis of the femoral head. Replacement of the hip joint

4th week:
Lecture: Functional anatomy of the foot. Congenital deformities and diseases of the foot

5th week:
Lecture: Knee disorders. Knock knee and bow legs. Congenital, habitual and recurrent dislocation of the patella. Chondromalacia patellae. Osteoarthritis of the knee. Replacement of the knee joint

6th week:
Lecture: Diseases of the neck and upper extremities

7th week:
Lecture: Spondylolysis and spondylolisthesis. Congenital anomalies of the spine. Scheuermann's disease and its treatment. Degenerative changes of the spine. Spinal stenosis. Disc degeneration and prolapse. Sciatica. Ankylosing spondylitis

8th week:
Lecture: Bone infection. Acute and chronic osteomyelitis. Suppurative arthritis

9th week:
Lecture: Postural kyphosis. Scoliosis and its treatment

10th week:
Lecture: Bone tumours and tumour-like lesions
Seminar: Introduction to e-learning module. Requirements.

11th week:
Seminar: Most common orthopaedic diseases of the spine and hip joint. Basic concepts, anatomy, biomechanics. Video presentation – hip joint replacement, surgical correction of scoliosis. Presentation of the most commonly used prosthesis and implants. X-ray presentation. Discussion of the pectured topics.

12th week:
Seminar: Most common orthopaedic diseases of

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

13th week:
Seminar: Discussion of findings: The significance of limb lengthening after total hip replacement

14th week:
Seminar: Discussion of findings: The range of movement after total knee replacement

15th week:
Seminar: Consultation, closing remarks

Requirements

Prerequisites: Biomechanics, Mobilization-Manual Techniques I

The attendance at lectures is strongly suggested, the attendance at seminars is compulsory. If you have more than 4-hour absence at seminars (consultations) or do not show activity in the e-learning module, the signature will be refused.

E-learning program:

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

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

0-54%: fail (1)
55-64%: pass (2)
65-74%: satisfactory (3)
75-84%: good (4)
85-100%: excellent (5)

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

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS I**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **20**
Seminar: **10**

1st week:
Lecture: Introduction to rheumatology: classification of diseases; social and economic relations of the rheumatology; history taking and physical examinations

2nd week:
Lecture: Osteoarthritis, spondylosis, low back pain

3rd week:
Lecture: Soft tissue rheumatism, regional pain syndromes, compression syndromes

4th week:
Lecture: Metabolic bone diseases, osteoporosis

5th week:
Lecture: Crystal arthropathies

6th week:
Lecture: Rheumatoid arthritis: clinical symptoms, diagnosis, therapy

7th week:
Lecture: Juvenile idiopathic arthritis, Felty syndrome, Caplan syndrome

8th week:
Lecture: Spondyloarthropathies: ankylosing spondylitis, psoriatic arthritis

9th week:
Lecture: Infectious and reactive arthritides

10th week:
Lecture: Introduction to immuno-pathology and autoimmunity. Autoimmune diseases

11th week:
Seminar: Degenerative diseases

12th week:
Seminar: Bone diseases, gout

13th week:
Seminar: Arthritides

14th week:
Seminar: Therapy: anti-inflammatory drugs, immunosuppression

15th week:
Seminar: Summary, consultation

Requirements

Prerequisites: Internal Medicine for Physiotherapists I

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

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

1st week:
Lecture: (1) The place of traumatology in medicine. Epidemiology of injuries, significance to the national economy. Classification of injuries. Closed and open mechanical injuries. Progression of wound healing. Classification of wounds. Methods of wound care. (2) Closed and open soft tissue injuries. Contusion, compression skin necrosis, subcutaneous hematoma. Closed tendon and muscle injuries. Joint sprains and dislocations. Basic principles of plastic surgery. Methods of ligament replacement and bone grafting

2nd week:
Lecture: (3-4) Progression of bone healing (biological, biomechanical factors). Occurrence and recognition of fractures. Classification of closed and open fractures. Basic principles of conservative fracture treatment.Indications of osteosynthesis. The role of the AO (ASIF) in the treatment of operative treatment. Advantages and disadvantages of operative treatment. Biological osteosynthesis

3rd week:
Lecture: (5-6) Multiple and combined injuries.

Treatment tactics of serious injuries. Life-saving, first-aid, transport.Basic principles of clincal treatment of seriously injured patients. Traumatological hemorrhagic shock. Shock treatment. Point systems for determination of seriousness of patient condition

4th week:
Lecture: (7) Types of bleeding. Temporary stoppage of bleeding. Treatment of open and closed vessel injuries. Nerve injuries. Morphology and physiology of nerve regeneration. Basic principles of treatment of periferal nerve injuries. Injuries of the brachial plexus. Treatment of nerve damage (tunnel syndromes). (8) Specific injuries to growing bones and their principles of treatment. Common injury combinations and characteristic injuries in childhood. Early and late complications

5th week:
Lecture: (9) Craniocerebral injuries. Fractures of the skull. Recognition and treatment of intracranial bleeding. Maxillo-facial injuries. (10) Classification and diagnosis of spinal injuries. Fractures of the vertebrae with and without neurological damage. Conservative and operative fracture treatment. Physical therapy, follow-up and rehabilitation of spinal injuries

6th week:
Lecture: (11) Chest injuries. Rib fractures. Penetrating chest injuries. Pneumothorax, haemothorax. Lung contusion. Open injuries of the lungs. Injuries of the heart and pericardium. Cardiac tamponade. Chest drainage and thoracotomy. (12) Closed and open injuries of the abdominal cavity. Diagnosis and operative treatment of parenchymal organs. Rupture of the diaphragm. Thoracoabdominal injuries. Injuries of retroperitoneal organs. Urogenital injuries

7th week:
Lecture: (13) Fractures of the forearm and region of the elbow. Supracondylar fractures. Intraarticular fractures of the distal upper arm. Stable and unstable elbow dislocations. Fractures of the radial head and neck. Fractures of the olecranon. Fractures of the forearm diaphysis. Monteggia and Galeazzi fractures. (14) Soft-tissue injuries of the shoulder. Dislocations of the clavicle. Shoulder dislocations. Fractures of the clavicle, scapula and proximal part of the upper arm. Injuries of the rotator cuff. Adhesive and restrictive capsulitis. Chronic shoulder instability. Fractures of the humerus diaphysis

8th week:
Lecture: (15) Fractures of the distal forearm. Fracture in loco typico of the radius (Colles' fracture). Fractures of the distal radius. Fractures of the scaphoid bone. Perilunar dislocation. Fractures of the metacarpal bones and phalanges. Follow-up and physiotherapy of hand injuries. (16) Basic principles of hand surgery. Types of tendon and nerve injuries. Primary suture and secondary replacement. Carpal instability. Septic complications of hand injuries. Revascularization and replantation

9th week:
Lecture: (17-18) Pathomechanism and classification of pelvic fractures. Diagnostic tools. Conservative and operative treatment. Fractures of the acetabulum. Dislocation of the hip

10th week:
Lecture: (19) Causes of the occurrence of fractures of the femur neck, characteristics of fractures in older patients. Garden classification. Methods of operative treatment. Principles and possibilities of prosthesis implantation. Per- and subtrochanteric fractures. Diagnosis and operative treatment of these fractures. (20) Fractures of the distal femur. Characteristics of intraarticular fractures. Patellar fracture. Rupture of the quadriceps tendon

11th week:
Lecture: (21-22) Closed and open diaphysis fractures of the femur and lower leg. Methods of intramedullary stabilization. Plate osteosynthesis. External fixator.Classification, diagnosis and treatment of fractures of the tibial condyle

12th week:
Lecture: (23-24) Biomechanics of the knee.

Mechanisms of knee injuries. Meniscus injuries. Diagnosis and treatment of ligament injuries of the knee. Hemarthrosis. Osteochondritis dissecans. The role of arthroscopy in diagnosis and treatment

13th week:
Lecture: (25) Pilon fractures of the tibia. Ligament injuries of the ankle. Classification, diagnosis and treatment of ankle fractures. (26) Fractures of the talus and calcaneus. Subtalar dislocation. Fractures of the bones of the foot and metatarsals

14th week:
Lecture: (27-28) Recognition and treatment of posttraumatic pathological states. Compartment syndromes (especially of the lower leg). Immobility damage, fracture illness. Sudeck dystrophy. Delayed union and non-union (pseudoarthrosis). Post-traumatic arthritis. Wound infections. Purulent arthritis. Osteitis, osteomyelitis. Gas gangrene. Early recognition and treatment of infections

15th week:
Lecture: (29-30) Consultation

Requirements

Prerequisite: 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: **44**
Practical: **16**

1st week:
Lecture: (1) The history of public health and preventive medicine. Scope and methods of public health. (2) Organization of public health services. (3) Introduction to human ecology
Practical: (1-2) Physical and chemical examination of drinking water (laboratory demonstration)

2nd week:
Lecture: (4-5) Global environmental pollution I-II. (6) Air pollution
Practical: (3-4) Bacteriological and mycological examination of drinking water and food (laboratory demonstration)

3rd week:
Lecture: (7-8) Toxicology of persistent organic pollutants, pesticides and organic solvents. (9) Heavy metals in the human environment
Practical: (5-6) Environmental radiation controlling laboratory (visit)

4th week:
Lecture: (10) Water pollution. (11) Health hazards of ionizing radiation and radioactive substance. (12) Health effects of climate change
Practical: (7-8) Water quality control laboratory (visit)

5th week:
Lecture: (13) Scope of occupational health. (14) Introduction to occupational toxicology.(15) Chemical safety

6th week:
Lecture: (16-17) Occupational diseases I-II. (18) Public health nutrition, foodborne diseases
Practical: (9-10) Health effects of workplace-related exposures

7th week:
Lecture: (19) Nutritional deficiency diseases. (20) Overweight and obesity. Diet related diseases. (21) The role of diet in the pathogenesis of cardiovascular diseases and malignant neoplasm

8th week:
Lecture: (22) Bioterrorism and possible tools of prevention. (23) Health effect of noise.(24) The history, definition and scope of epidemiology

9th week:
Lecture: (25) Statistical methods used in the analysis of epidemiological studies. (26) Analyses based on aggregate statistics. (27) Frequency measures in epidemiology
Practical: (11-12) Biostatistical analyses

10th week:
Lecture: (28) Association measures in epidemiology. (29) Types of etiological studies. (30) Epidemiological study design

11th week:
Lecture: (31-32) Validity of etiological studies. Causal inference. (33) Interventional studies
Practical: (13-14) Types of epidemiological studies

12th week:
Lecture: (34) Clinical trials. (35) Conclusion of epidemiological studies. (36) Using epidemiological measures in practice
Practical: (15-16) Searching, interpreting and using scientific literature

13th week:
Lecture: (37-38) Introduction to quantitative medicine. (39) The concept and methods of health monitoring

14th week:
Lecture: (40) Monitoring morbidity of non-communicable diseases. (41) Monitoring morbidity of communicable diseases. (42) Priority setting in public health

15th week:
Lecture: (43) Morbidity registries. (44) Health observatories

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 seminars in a semester even if he/she has an acceptable excuse. The absences at seminars should be made up with another group (if there is) only in the same week (maximum 3 times during the semester). At the end of the semester students are required to take a written test which will cover the topics of all lectures and seminars of the first semester.

Department of Foreign Languages

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE III**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: **45**

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: Professional Hungarian Language II

Attendance: Language class attendance is compulsory. The maximum percentage of allowable absences is 10 % which is a total of 2 out of the 15 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 final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students' behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a "minus" (-). If a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

Testing, evaluation: In each Hungarian language course, students must sit for 2 written language tests and a short minimal oral exam. A further minimum requirement is the knowledge of 200 words per semester announced on the first week. There is a (written or oral) word quiz in the first 5-

10 minutes of the class, every week. If a student has 5 or more failed or missed word quizzes he/she has to take a vocabulary exam that includes all 200 words along with the oral exam. The results of word quizzes are added to the average score of the written tests.

The oral exam consists of a role-play randomly chosen from a list of situations announced in the beginning of the course. Failing the oral exam results in failing the whole course. The result of the oral exam is added to the average of the mid-term and end-term tests.

Based on the final score the grades are given 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 whole semester's material.

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.

Course book: See the website of the department.
Website: Oral exam topics and vocabulary minimum lists are available from the website of the Department of Foreign Languages: http://ilekt.med.unideb.hu.

Department of Physiotherapy

Subject: **CARDIOVASCULAR CLINICAL PRACTICE**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: **80**

Practical: 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

Prerequisite: Internal Medicine for Physiotherapists III

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.

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.

Subject: **INFANT CARE AND PAEDIATRICS CLINICAL PRACTICE**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: **80**

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

Requirements

Prerequisite: Infant Care and Paediatrics for Physiotherapists I

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

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

Subject: **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

Prerequisite: 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.

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS I**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **45**
Seminar: **15**
Practical: **15**

1st week:
Lecture: (C) Case history. The anatomical and physiological basis of neurology. Procedures in neurological diagnostics. (PT) Characteristics of the normal movements. Reasons of the impaired movement
Seminar: (PT) Characteristics of the normal movements

2nd week:
Lecture: (C) The signs of meningeal irritation. Cranial nerves. (PT) Central paresis and paralysis; stroke in the adult- and childhood; features, symptoms, complications.
Seminar: (PT) Discussion of the lectured topics

3rd week:
Lecture: (C) The structure and pathology of the motor system. (PT) Poststroke movement therapy, rehabilitation
Seminar: (PT) Principles of poststroke movement therapy

4th week:
Lecture: (C) The structure and pathology of the sensory system. (PT) Types of ataxia, principles of their movement therapy
Seminar: (PT) Principles of the movement therapy in ataxia

5th week:
Lecture: (C) Normal and abnormal reflexes, the structure and pathology of coordination. (PT) Central and peripheral cranial nerve disorders; physiotherapy of central and peripheral dizziness
Seminar: (PT) Improvement of balance, basic and complex exercises

6th week:
Lecture: (C) Cerebrovascular diseases. (PT) Muscular diseases, myopathies and myotonies.
Seminar: (PT) Characteristics of the movement therapy in muscular diseases

7th week:
Lecture: (C) Epilepsies. The typical pathological signs of cortical lobe lesions. (PT) Spinal Muscular Atrophy (SMA), Amyotrophic Lateral Sclerosis (ALS), Guillain-Barré syndrome, types of polyneuropathies
Seminar: (PT) Possibilities for the improvement of the voluntary and automatic movements

8th week:
Lecture: (C) Dementias. (PT) Extrapyramidal dysfunction, hyperkinesias.
Practical: (PT) Proprioceptive training

9th week:
Lecture: (C) Parkinson's disease and other

movement disorders. (PT) Examination and complex physiotherapy of the patient suffering from Parkinson's disease
Practical: (PT) Principles of the movement therapy in progressive muscular dystrophy

10th week:
Lecture: (C) Multiple sclerosis, infections of the central nervous system. (PT) Principles of the movement therapy of the multiple sclerosis and myasthenia gravis
Practical: (PT) Demonstration of the movement therapy for polyneuropathies with alcoholic, diabetic and autoimmune origine

11th week:
Lecture: (C) Sleep disturbances. (PT) Symptoms and principles of physiotherapy in peripheral pareses
Practical: (PT) Use of gymnastic equipments in order to facilitate or make more difficult the exercises. Individual and group training for patients with Parkinson's disease; demonstration and practice

12th week:
Lecture: (C) Tumours of the central and peripheral nervous system. (PT) Rehabilitation of the spine-injured patients.
Practical: (PT) Complex physiotherapy of the patients with multiple sclerosis; movement therapy of the patients with myasthenia gravis

13th week:
Lecture: (C) The pathology of spinal cord. (PT) Movement disorders with neuropsychiatric origin
Practical: (PT) Demonstration and practice of the facilitation techniques; improvement of the voluntary movements by coordination exercises. Individual demonstration of the facilitation techniques, some coordination and balance improving exercises.

14th week:
Lecture: (C) Injuries of the central nervous system. (PT) Movement therapy in apraxia, agnosia and dementia
Practical: (PT) Physiotherapy of central and peripheral facial paresis; demonstration and practice of the vestibular training.

15th week:
Lecture: (C) Consultation. (PT) Consultation
Seminar: (C, PT) Selfcontrol test
Practical: (PT) Endterm practice examination
Self Control Test (Theoretical knowledge)

Requirements

Prerequisites: Pathology, Mobilization-Manual Techniques II

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

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

Subject: **PHYSIOTHERAPY OF THE MOVEMENT SYSTEM I - PT IN ORTHOPAEDICS AND TRAUMATOLOGY**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **45**
Seminar: **30**
Practical: **30**

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 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: (O) General treatment methods in orthopaedic physiotherapy. (T) Patient examination; prae- and postoperative physiotherapy methods

2nd week:
Lecture: (O) 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
Practical: (O)Static changes of the spine: sacralisation, lumbalisation, spondylitis, spondylolystesis; targeted exercises. (T) Use of the wheelchair, solution of the life situations; relief of contracture

3rd 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
Practical: (O) Examinations; rules of exercises in the typical forms of the postural deformities. (T) Mobilization of the spinal column in every direction; treatment with conservative methods

4th week:
Lecture: (O) Etiology of the scoliosis; conservative and surgical treatments; kinesiological consequencies of scoliosis at different location; compensatory mechanisms
Seminar: (O) Targeted physiotherapy for the kyphotic spine. (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
Practical: (O) Targeted physiotherapy for the lordotic spine. (T) Individual training for shoulder-injured patients; load-free and loaded positions; use of instruments; paired exercises; conducted passive and active exercises

5th week:
Lecture: (O) 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
Practical: (O) Treatment of scoliosis at different location: special treatment in dorsal scoliosis. (T) Individual training for shoulder-injured patients; paired exercises; conducted passive and active exercises

6th week:
Lecture: (O) Disorders of the shoulder; habitual luxation of the shoulder. Complex physiotherapy in the brachial plexus laesion
Seminar: (O) Treatment of scoliosis at different location. (T) Group and individual training for shoulder-injured patients; load-free and loaded positions; use of instruments
Practical: (O) Special treatment in dorsal scoliosis. (T) Group and individual training for shoulder-injured patients;; use of instruments; paired exercises; conducted passive and active exercises

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)Treatment of scoliosis at different location: special treatment in lumbal scoliosis. (T) Group and individual training for elbow-injured patients
Practical: (O)Treatment of scoliosis at different location: Targetted exercises in lumbal scoliosis. (T) Requirements for the individual treatment; isometric and isotonic exercises for elbow-injured patients

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) Chest deformity: reasons, consequencies, physiotherapy. (T) Treatment of the hand injuries; semi-passive and passive methods; use of Carpenter and Brooks splints; treatment of peripheral nerve injuries
Practical: (O) Treatment of scoliosis at different location: special treatment in lumbar and dorsolumbar scoliosis. (T) Treatment of the hand injuriesuse of selective stimulus and diadynamic currents; role of the passive mobilization

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) Congenital and acquired disorders of the elbow complex. (T) Surgical treatment of the pelvic fractures; extension training, active training in the bed, graded mobilization
Practical: (O) Congenital and acquired disorders of the wrist complex. (T) Surgical treatment of the pelvic fractures; extension training, active training in the bed, graded mobilization

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) Aseptic bone necrosis; Scheuermann disease, Perthes syndrome: etiology, reason, consequence, and physio-therapy. (T) Conservative functional treatment of the hip fractures; positioning, expansion; processing the active training in the bed; education of the use of wrap
Practical: Physiotherapy in Scheuermann disease and Perthes syndrome. (T) Conservative functional treatment of the hip fractures; positioning, expansion; processing the active training in the bed; education of the use of wrap

11th week:
Lecture: (O) Congenital and acquired disorders of the hip complex, the knee, the ankle and the foot complex
Seminar: (O) Conservative functional treatment of the coxarthrosis and gonarthrosis. (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) Targetted exercises of the coxarthrosis and gonarthrosis. (T) Conservative functional treatment of the hip fractures; positioning, expansion; processing the active training in the bed; education of the use of wrap

12th week:
Lecture: (T) Ankle injuries; treatment; complementary treatment of complica-tions; physiotherapy in Achilles tendon rupture
Seminar: (O) Postoperative treatment after total hip endoprosthesis. (T) Knee injuries
Practical: (O) Complex rehabilitation program after total hip endoprosthesis. (T) Ankle injuries

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
Seminar: (O) Postoperative physiotherapy after total knee endoprosthesis. (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
Practical: (O) Complex rehabilitation program after total knee endoprosthesis. (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

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
Seminar: O) Pes planus general therapy. (T) Physiotherapy for the chest- and abdomen-injured patients; breathing exercises; improvement of circulation; general conditioning
Practical: (O) Pes planus exercise therapy. (T) Physiotherapy for the chest- and abdomen-injured patients; breathing exercises; improvement of circulation; general conditioning

15th week:
Lecture: (O, T) Consultation
Seminar: (O, T) Consultation
Practical: (O, T) Practice exams
Self Control Test

Requirements

Prerequisites: Mobilization-Manual Techniques II, Orthopaedics for Physiotherapists, Traumatology and Intensive Therapy for Physiotherapists I

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

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 grade during the examination period taking ESE.

Subject: **PROFESSIONAL AND SCIENTIFIC ORIENTATION**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: Features of the applied research work in the health sciences

2nd week:
Practical: Orientation in the scientific literature

3rd week:
Practical: Conventional methods for orientation in the scientific literature

4th week:
Practical: Use of the electronic data bases I

5th week:
Practical: Use of the electronic data bases II

6th week:
Practical: Selection of articles for individual presentation

7th week:
Practical: Analysis of an article in the group – basic research

8th week:
Practical: Analysis of an article in the group – applied research

9th week:
Practical: Analysis of a review in the group

10th week:
Practical: Techniques for presentation of the results

11th week:
Practical: Individual presentations of articles I

12th week:
Practical: Individual presentations of articles II

13th week:
Practical: Requirements of thesis work I

14th week:
Practical: Requirements of thesis work II

15th week:
Practical: Closing remarks

Requirements

Prerequisite: Basics of Research Methodology

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

Subject: **PSYCHIATRY I**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Meaning and role of the psychiatry; definition of disease in psychiatry; organic psychiatric disorders; psychotic psychiatric diseases

2nd week:
Lecture: Basics of human communication; distress disorders, depression, suicide.

3rd week:
Lecture: Personality disorders; addictions:

alcoholism and drug dependence; treatment of the psychiatric diseases

4th week:
Lecture: Psychosomatic diseases; eating disorders; psychotherapies, cognitive therapy, relaxation methods, movement therapy; other psychotherapeutic methods; sociotherapies, possibilities for rehabilitation

5th week:
Lecture: Emergency psychiatry.

6th week:
Lecture: Active and passive movement therapy in psychiatric disorders

7th week:
Lecture: Summary, consultation

Requirements

Prerequisites: Internal Medicine for Physiotherapists I, Kinesiology II

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

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS II**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **30**
Seminar: **15**
Practical: **15**

1st week:
Lecture: Physiotherapy in rheumatology
Seminar: Measurements and physiotherapeutical diagnosis
Practical: General physiotherapeutical methods, treatments and basics of the exercise therapy

2nd week:
Lecture: Model of the joint pain; consequences of the pain
Seminar: Diagnostics of the joint pain, Cyriax method
Practical: Treatment of the joint pain

3rd week:
Lecture: Seronegative spondylo-arthropathies, diagnostic criteria; ankylosing spondylitis, pathology, effects on the joints
Seminar: General rules of treatment in rheumatoid arthritis
Practical: Biomechanics in rheumatoid arthritis

4th week:
Lecture: Seronegative spondylo-arthropathies: Reiter-syndrome; reactive and psoriatic arthritis
Seminar: Rules of the joint protection and exercises: shoulder and elbow
Practical: Rules of the joint protection and exercises: wrist and hand

5th week:
Lecture: Arthrosis of the joints, symptoms, pain and consequences; arthrosis in the hip and the knee
Seminar: Rules of the joint protection and exercises: feet
Practical: Rules of the joint protection and exercises: knee and hip

6th week:
Lecture: Arthrosis in the cervical and lumbar regions; symptoms
Seminar: Complex functional treatment of the ankylosing spondylitis by the methods of physiotherapy
Practical: Targeted exercises of the ankylosing spondylitis by the methods of physiotherapy

7th week:
Lecture: Inflammatory diseases of the joints;

typical pain, instability, decreased motion; rheumatoid arthritis
Seminar: Physiotherapy of the Reiter syndrome, the reactive and psoriatic arthritis
Practical: Targeted exercises of the ankylosing spondylitis by the methods of physiotherapy

8th week:
Lecture: Rheumatoid arthritis in the upper extremities
Seminar: Examination and general physiotherapy in arthrosis
Practical: Basics of exercises aimed at arthrosis

9th week:
Lecture: Rheumatoid arthritis in the lower extremities
Seminar: Arthrosis in the lumbar regions; symptoms
Practical: Treatments, exercises and lifestyle in arthrosis

10th week:
Lecture: Soft tissue rheumatism in the upper extremities; pathology, diagnosis and treatment
Seminar: Differential diagnostics and physiotherapy
Practical: Treatment of periarthropathies

11th week:
Lecture: Soft tissue rheumatism in the lower extremities; pathology, diagnosis and treatment
Seminar: Differential diagnostics and physiotherapy
Practical: Treatment of periarthropathies

12th week:
Lecture: Osteoporosis: pathomechanism, changed posture and function; Primary, secondary and tertiary preventions
Seminar: Primary, secondary and tertiary preventions
Practical: Compressed vertebra fracture, early and late mobilisation

13th week:
Lecture: Fibromyalgia: pathomechanism, symptoms, diagnosis and treatment
Seminar: Complex physiotherapy of fibromyalgia
Practical: Joint protection and lifestyle in rheumatologic diseases
14th week:
Lecture: Joint prevention and lifestyle in rheumatologic diseases
Seminar: Dermatomyositis, SLE, polymyalgia rheumatica
Practical: Practice exam

15th week:
Lecture: Consultation
Seminar: Self Control Test
Practical: Practice exam
Self Control Test (Theoretical knowledge)

Requirements

Prerequisite: Rheumatology for Physiotherapists I, Mobilization-Manual Techniques II

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 seminars and practical hours.

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

Subject: **THESIS I**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:

Content: Selection of topic for thesis work, collection at least 5 relevant articles; making a study plan for scientific investigation

Requirements

Prerequisites: Basics of Research Methodology, Mobilisation-Manual Techniques II

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.

The course in the Neptun will be closed by a term mark.

Department of Preventive Medicine

Subject: **PREVENTIVE MEDICINE AND PUBLIC HEALTH II**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **40**
Seminar: **20**

1st week:
Lecture: (1) Preventive strategies. (2) Screening programmes. (3) Introduction to epidemiology and surveillance of communicable diseases
Seminar: (1-2) HFA database

2nd week:
Lecture: (4) Characteristics of infectious diseases. (5) Vaccines and immunization. (6) Sexually transmitted diseases
Seminar: (3-4) Outbreak investigation

3rd week:
Lecture: (7) Epidemiology of HIV/AIDS. (8) Epidemiology of hepatitis. (9) Epidemiology of nosocomial infections.

4th week:
Lecture: (10) Epidemiology and control of zoonoses. (11) Epidemiology and control of airborne infections. (12) Epidemiology and control of tuberculosis
Seminar: (5-6) Vaccination programmes

5th week:
Lecture: (13) Emerging and re-emerging infections. (14) Epidemiology of gastrointestinal infections. (15) Epidemiology of tropical diseases
Seminar: (7-8) Sterile Services Department (visit)

6th week:
Lecture: (16) Geographical pattern of infectious diseases. (17) Prion diseases. (18) Introduction to epidemiology of the non-communicable diseases

7th week:
Lecture: (19) Epidemiology and control of cardiovascular diseases. (20) Epidemiology of malignant diseases. (21) Epidemiology and control of metabolic, gastrointestinal and liver diseases

8th week:
Lecture: (22) Epidemiology of chronic respiratory diseases. (23) Epidemiology of mental disorders and behavioral problems. (24) Health staus in developing and developed

countries
Seminar: (7-8) Screening, monitoring and controlling diseases in primary care

9th week:
Lecture: (25) Health determinants. (26) Genetic susceptibility to chronic diseases at individual and population levels. (27) Lifestyle and health: the effects of personal factors on health
Seminar: (9-10) Concept and practice of health promotion

10th week:
Lecture: (28) Lifestyle and health: the effects of alcohol and drug use on health. (29) Environment and health: the effects of socio-economical factors on health. (30) Domestic violence
Seminar: (11-12) North Karelia Programme

11th week:
Lecture: (31) Health policy principles. (32) Needs, demands and use of health service
Seminar: (13-14) Public health and health care databases

12th week:
Lecture: (33-34) Basics of health economics. Health system financing
Seminar: (15-16) Intoduction to health policy

13th week:
Lecture: (35-36) Quality management and control in health care
Seminar: (17-18) Health system financing

14th week:
Lecture: (37-38) Improvment of clinical effectiveness
Seminar: (19-20) Assessing and improving quality of health services

15th week:
Lecture: (39-40) New challenges of preventive medicine and public health in the 21th century
Self Control Test (Interpretation of public health databases (HFA exam))

Requirements

Prerequisite: Preventive Medicine and Public Health I

Attendance at 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 12
ACADEMIC PROGRAM FOR THE 4TH YEAR

Department of Physiotherapyh

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.

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS II**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**
Seminar: **15**
Practical: **45**

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
Seminar: (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
Seminar: (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
Seminar: (B) Facilitation of the gait

8th week:
Seminar: (E) Aim and principles of the electrodiagnostic procedures, rules of processing; pain and electrotherapy
Practical: (B) Clinical demonstration.

9th week:
Seminar: (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
Practical: (B) Clinical demonstration.

10th week:
Seminar: (E) Physical and physiological bases of the low and middle frequency treatments
Practical: (B) Clinical demonstration.

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:
Seminar: (E) Complex evaluation of the electrodiagnostic findings; indirect electrodiagnostics
Practical: (B) Clinical demonstration.

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.

Subject: **PHYSIOTHERAPY OF THE MOVEMENT SYSTEM II - PT IN ORTHOPAEDICS AND TRAUMATOLOGY**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Practical: **60**

1st week:
Practical: (T) Patient examination

2nd week:
Practical: (O) Patient examination

3rd week:
Practical: (T) Relief of contracture (demonstration)

4th week:
Practical: (O) Examination and treatment of postural abnormalities.

5th week:
Practical: (T) Functional treatment of the shoulder region injuries

6th week:
Practical: (O) Treatment of scoliosis at different location

7th week:
Practical: (T) Group and individual training for shoulder-injured patients; use of instruments

8th week:
Practical: (O) Treatment of scoliosis at different location

9th week:
Practical: (T) Treatment of the hand injuries

10th week:
Practical: (O) Disorders of the wrist complex - case demonstrations

11th week:
Practical: (T) Conservative functional treatment of the hip fractures

12th week:
Practical: (O) Targeted exercises of the coxarthrosis and gonarthrosis

13th week:
Practical: (T) Conservative functional treatment of the hip fractures. Ankle injuries

14th week:
Practical: (O) Complex rehabilitation program after total hip and knee endoprosthesis

15th week:
Practical: (T) Physiotherapy for the chest- and abdomen-injured patients

Requirements

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

Attendance at demonstration practices is compulsory. Participation in the demonstration practices is a criterion for the certificate of completion (absolutorium). If you miss more than 4 hours in Orthopaedics and/or Traumatology practices, the signature of the Lecture Book will be refused.

Subject: **PSYCHIATRY II**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: Psychiatric rehabilitation; role of a physiotherapist in the psychiatry; communication with psychiatric patients

2nd week:
Lecture: Group training, structure of the rhythmic movement therapy

3rd week:
Lecture: Movement therapy for addiction patients; principles of the symptom-oriented movement therapy in distress syndromes

4th week:
Lecture: Psychiatric syndromes with disturbed body image and experience; disorders of body experience in psychotic diseases

5th week:
Lecture: Principles of symptom-oriented movement therapy in mood disorders; relaxation techniques

6th week:
Lecture: Communicative movement therapy; Alexander method; demonstration of the Feldeinkrais method and dance therapy

7th week:
Lecture: Infant psychiatric disorders; Attention Deficit Hyperactivity Disorder, (ADHD); psychiatric disorders in elderly persons

8th week:
Lecture: Midterm written exam
Practical: Significance of the physiotherapist′s personality; improvement of personality by game; communication exercises; games to improve communication skills
Self Control Test (Theoretical kknowledge)

9th week:
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:
Practical: Demonstration and practice of the movement therapy

11th week:
Practical: Demonstration of the exercises aimed to improve the body image; individual and group movement therapy possibilities for schizophrenia

12th week:
Practical: Demonstration and practice of the movement therapy applied in bipolar disorders

13th week:
Practical: Demonstration and practice of the communicative movement therapy; self expression through movement

14th week:
Practical: Movement therapy in the psychiatric

disorders of the children; movement therapy for ADHD; improvement of the physical and mental functions of dementia patients

15th week:
Practical: End-term practice examination

Requirements

Prerequisite: Psychiatry 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.

Subject: **REHABILITATION**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **30**
Seminar: **15**
Practical: **15**

1st week:
Lecture: Definition of rehabilitation; history, main fields of rehabilitation; ICF
Seminar: Meet with people with disabilities – free discussion

2nd week:
Lecture: Rehabilitation medicine: definitions, rehabilitation programs; basic features of the assessments
Seminar: Assessment of ADL, global functions

3rd week:
Lecture: Medical rehabilitation: therapy approaches; team work
Practical: Practice at the Department of Rehabilitation and Physical Medicine (OT)

4th week:
Lecture: Educational rehabilitation in childhood and for adults
Practical: Visit to a special school/ early intervention program

5th week:
Lecture: Main features of vocational rehabilitation
Practical: Visit to an integrated workplace

6th week:
Lecture: Social systems serving people with disabilities. Guiding international documents. Rights of people with disabilities
Practical: Visit to a daily care center

7th week:
Lecture: Psychological approach in rehabilitation; communication and communication disorders
Seminar: Discussion of the lectured topics

8th week:
Lecture: Medical rehabilitation of persons with cardiac diseases; secondary prevention
Seminar: Cardiac training programs

9th week:
Lecture: Main fields of neurological rehabilitation: TBI, SCI, post-stroke rehabilitation
Seminar: PT methods in rehabilitation

10th week:
Lecture: Rehabilitation for people with chronic neuro-musculosceletal conditions
Seminar: Orthoses, mobility devices and care tools

11th week:
Lecture: Paediatric rehabilitation
Practical: Visit to the Paediatric Rehabilitation Center

12th week:
Lecture: Special rehabilitation needs of elderly people (OP, fractures, etc.) and persons after amputation
Practical: Practice in Kenézy Hospital Rehabilitation Unit (Prosthetics included)

13th week:
Lecture: Pulmonary rehabilitation
Practical: Practice in Rehabilitation Unit of Department of Pulmonology

14th week:
Lecture: Psychiatrical rehabilitation
Practical: Visit of the psychiatrical rehabilitation program at Department of Psychiatry

15th week:
Lecture: Role of non-governmental organisations in rehabilitation
Seminar: Repetition, summary
Practical: Consultation

Requirements

Prerequisites: Rheumatology for Physiotherapists II, Physiotherapy of the Movement System I - PT in Orthopaedics and Traumatology

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 at the seminars or practical hours.

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS III**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Demonstration of examination

2nd week:
Practical: Treatment of the joint pain

3rd week:
Practical: Symptoms and treatment of the rheumatoid arthritis

4th week:
Practical: Exercises with joint protection

5th week:
Practical: Arthrosis of the joints, symptoms, pain and complications

6th week:
Practical: Complex functional treatment of the ankylosing spondylitis

7th week:
Practical: Targeted exercises of the ankylosing spondylitis by the methods of physiotherapy

8th week:
Practical: Examination and general physiotherapy in arthrosis

9th week:
Practical: Treatments, exercises in arthrosis

10th week:
Practical: Soft tissue rheumatism, diagnostics and treatment

11th week:
Practical: Treatment of periarthropathies

12th week:
Practical: Osteoporosis, functional treatment

13th week:
Practical: Fibromyalgia: symptoms, diagnostics and treatment

14th week:
Practical: Polymyositis and dermatomyositis

15th week:
Practical: Case studies

Requirements

Prerequisite: Rheumatology for Physiotherapists II

Attendance at demonstration practices is compulsory. Participation in the demonstration practices is a criterion for the certificate of completion (absolutorium). If you miss more than 4 hours in Orthopaedics and/or Traumatology practices, the signature of the Lecture Book will be refused.

Subject: **THESIS II**
Year, Semester: 4th year/1st semester
Number of teaching hours:

Content: data collection, analysis of data, constructing the figures and writing the Methods.

Requirements

Prerequisite: Thesis I

The aim of the course is to help the process of scientific work. Content: data collection, analysis of data, constructing the figures and writing the Methods.

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, Mobilization-Manual Techniques 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 4-hour absences from the practical hours.

Department of Preventive Medicine

Subject: **HEALTH INFORMATICS**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: **10**
Practical: **20**

1st 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

2nd week:
Lecture: Data in the health care; classification: taxonomy, nosology; code systems; ICD, WHO, SNOMED… data sources: measurements, diagnostic sources, digital signal processing, digital image and sound processing

3rd week:
Lecture: Data management: information systems, databases, network management, data flow

4th week:
Lecture: Physical and logical techniques and solutions of the protection of IT systems; the issues of privacy, legal and ethical rules; basics of cryptography

5th week:
Lecture: Comparison of the health care systems in different countries: administration, coding, finance, data management; standards

6th 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.

7th 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

8th week:
Practical: Database management systems. Comparison of spreadsheet and database management applications MS Excel – MS Access.

9th week:
Practical: MS Excel – Pivot table, queries, reports, charts.

10th week:
Practical: MS Access (field types, defining keys; table design, layout, interconnection, import/export data, converting data), reports, queries

11th week:
Practical: Decision making; geographic information system (GIS) visualization methods

12th week:
Practical: Application of GIS in health care; communication between systems, applications.

13th week:
Practical: Collaboration work – fiel sharing and online office applications, sharing data, sharing information, work in groups.

14th week:
Practical: Information sources and databases in the public health practice

15th week:
Practical: Practice exam.

Requirements

Prerequisites: Basics of Informatics, Preventive Medicine and Public Health II

Attendance at lectures is strogly recommended, the attendance at practical hours is compulsory. If you miss more than 4 hours the signature will be refused.

Department of Physiotherapy

Subject: **INTERNAL MEDICINE CLINICAL PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **80**

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

Requirements

Prerequisite: Internal Medicine for Physiotherapists III

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

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

Subject: **NEUROLOGY CLINICAL PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **80**

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

Requirements

Prerequisite: Neurology for Physiotherapists II

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

communication skills (with patients and health care professionals), keeping the ethical standards of the profession.

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

Subject: **ORTHOPAEDICS CLINICAL PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **120**

Content: 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 II - PT in Orthopaedics and Traumatology

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

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

Subject: **REHABILITATION CLINICAL PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **80**

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

Requirements

Prerequisite: Rehabilitation

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

Subject: **RHEUMATOLOGY CLINICAL PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **120**

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

Requirements

Prerequisite: Rheumatology for Physiotherapists II

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

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

Subject: **THESIS III**
Year, Semester: 4th year/2nd semester
Number of teaching hours:

Content: Analysis and discussion of the results on the basis of scientific literature, wrinting the Thesis

Requirements

Prerequisite: Thesis II

Evaluation and discussion of the results, writing the Thesis.

Subject: **TRAUMATOLOGY CLINICAL PRACTICE**
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: **120**

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

Requirements

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

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

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

CHAPTER 13
ELECTIVE COURSES

Department of Behavioural Sciences

Subject: **HEALTH PSYCHOLOGY**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Health psychology: the field and its subfields (clinical, preventive/ promoting, community, and critical health psychology)

2nd week:
Lecture: Framing health psychology: kindred disciplines of medical and clinical psychology, medical anthropology, behavioural medicine

3rd week:
Lecture: Health behaviour: definition and conditions of appearance

4th week:
Lecture: Comparative analysis of lay and professional mental representations of health

5th week:
Lecture: Personality and health, hardiness and health

6th week:
Lecture: Coping: theories, forms, effects

7th week:
Lecture: Doctor-patient communication: role of health beliefs, locus of control

8th week:
Lecture: Satisfaction, compliance, adherence: comparative analysis

9th week:
Lecture: Forms and mechanisms of preventive behavioural acts

10th week:
Lecture: Health behaviour: gender- and age-differences

11th week:
Lecture: Stress: comparative/interdisciplinary theories

12th week:
Lecture: Health belief and health behaviour: interactive mechanisms

13th week:
Lecture: Health psychology of pain

14th week:
Lecture: Interactive analyses of case studies

15th week:
Lecture: Consultation

Requirements

Prerequisite: Basics of Psychology
Attendance at lectures is strongly recommended.

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

1st week:
Lecture: Population health and its relation with structural inequalities. Measuring social inequalities. Application of SED

2nd week:
Lecture: Population and health. Sociological interpretation of health. Testing health models and health behaviour. Lifecourse analysis, sociological diagnosis

3rd week:
Lecture: Sociocultural background of health promotion. International and national health promotion programs. Role of civil organizations in health promotion

4th week:
Lecture: he social equilibrium of health and disease; bio-psycho-social interpretation of disequilibrium. Patterns of jealth-, risk-, and disease behaviour through case studies

5th week:
Lecture: Sick role and sick behaviour. Perception and coping with disease. Sociographic investigation of the sick role and lifecourse of disease

6th week:
Lecture: Sociocultural models of health care professions/jobs. Job orientation and prestige of health care professions

7th week:
Lecture: Health risks and their consequences in minority populations. Investigation of prejudice, discrimination and equal opportunity

8th week:
Lecture: Risks for health and health care of social deviances. Costs of deviant behaviour. Estimating hidden morbidity

9th week:
Lecture: Organizational sociology of health care

10th week:
Lecture: Health care secularization and medicalization

11th week:
Lecture: Economic sociology of health care. Inequalities in health needs, demands and capacities

12th week:
Lecture: Sociocultural motivation for the use of health services

13th week:
Lecture: Economic sociology of health care. Financing health services. Public, trust-based and private primary care

14th week:
Lecture: Evaluation of health care. Health technology assessment and cost-efficiency. Evaluation of health care. Quality of life. Self-perceived health status by lifestyle, quality of life and health expectations

15th week:
Lecture: International protocols for investigating quality of life.Evaluation of health care. Patient satisfaction and worker satisfaction

Requirements

Prerequisite: Basics of Sociology

The attendance at lectures is strongly recommended.

Department of Immunology

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

1st week:
Lecture: Tissues/organs of the immune system.

2nd week:
Lecture: Immune cells. Innate and adaptive arms of the immune system.

3rd week:
Lecture: Innate immune system; recognition and elimination of pathogens.

4th week:
Lecture: Antigen presentation.

5th week:
Lecture: Immunoglobulins; structure and functions.

6th week:
Lecture: B cells; activation and effector functions.

7th week:
Lecture: T cells; types and functions.

8th week:
Lecture: The collaborations between innate and adaptive immunity. Antibody types and functions.

9th week:
Lecture: Memory. Passive and active immunization.

10th week:
Lecture: The organization of the immune system.

11th week:
Lecture: Hypersensitivity reactions.

12th week:
Lecture: Autoimmunity. Immunological aspects in geriatrics. Rheumatology.

13th week:
Lecture: Inflammation. Anti-inflammatory agents. Biological therapy.

14th week:
Lecture: Modulation of the immune system with diet and exercise.

15th week:
Lecture: Consultation.

Requirements

Prerequisite: Cell Biology

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 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

Prerequisite: Internal Medicine for Physiotherapists I

Attendance at lectures is strongly recommended.

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

Prerequisite: Kinesiology II

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

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY II - AUTOSTRETCHING**
Year, Semester: 3rd 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.

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY III - EDUCATION OF SPINE PATIENTS**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Practical: **30**

1st week:
Practical: Overview of the structure and function of the spine according to the physiotherapeutic point of view.

2nd week:
Practical: Analysis of the spine movements on the morphological background.

3rd week:
Practical: Relationships of posture and the gravity line. Dynamic stabilizers in standing position. Muscle chains.

4th week:
Practical: Synergestic functions of the trunk and limbs in different planes.

5th week:
Practical: Standard examination methods of the spine.

6th week:
Practical: Special tests for functional examination I. Thoracolumbar part.

7th week:
Practical: Special tests for functional examination II. Lumbo-pelvic-hip complex.

8th week:
Practical: Special tests for functional examination III. Cervicodorsal part.

9th week:
Practical: Spine education in the pre-school age.

10th week:
Practical: Spine education in the elementary school.

11th week:
Practical: Spine education at the workplace.

12th week:
Practical: Student project presentation.

13th week:
Practical: Student project presentation.

14th week:
Practical: Repetition, consultation and preparation for the 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 from the practical hours.

The term mark will be constructed on the basis of a written exam.

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY IV – LYMPHDRAINAGE**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: **10**
Practical: **20**

1st week:
Lecture: Morphology and physiology of lymphatic circulation, insufficiency

2nd week:
Lecture: Main types, stages and characteristics of lymphedema

3rd week:
Lecture: Reasons of lymphedema, symptoms, early and late consequences. Complex treatment of the lymphedema

4th week:
Lecture: Basis of the lymphatic drainage. Structure and processing of the lymphatic drainage

5th week:
Lecture: Indications and contraindications of the lymphatic drainage

6th week:
Lecture: Complications of the lymphatic drainage
Practical: Patient examination. Demonstration 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, indications and contraindications
Practical: Practical relations of the bandage treatment

11th week:
Practical: Demonstration of bandage (upper limb)

12th week:
Practical: Demonstration of bandage (lower limb)

13th week:
Practical: Repetition, practice

14th week:
Practical: Repetition, practice

15th week:
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 4-hour absences from the practical hours.

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY VIII - COMPLEMENTARY AND ALTERNATIVE MEDICINE**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Definition and history of the complementary and alternative medicine (CAM). Relevance and role of CAM in the modern medicine

2nd week:
Lecture: Legal regulations of CAM in Hungary and Europe. Classification of CAM; „Mind-body" Medicine

3rd week:
Lecture: Natural, bio-based products. Alternative medical system, energy medicine

4th week:
Lecture: Manipulative and body-centered methods. Traditional Chinese medicine

5th week:
Lecture: Definition and relevance of evidence based CAM. Acupuncture

6th week:
Lecture: Manual therapy (osteopathy, chiropractic). Massage, relaxation

7th week:
Lecture: Integrative medicine. Role and efficiency of integrative medicine in different countries of European Union

Requirements

Prerequisite: Basics of Physiotherapy
Attendance at lecture is highly recommended. The term mark (AW5) will be calculated on the basis of a written examination according to the scale as follows:
0-59%: fail (1)
60-69%: pass (2)
70-79%: satisfactory (3)
80-89%: good (4)
90-100%: excellent (5)

Subject: **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 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.

Subject: **SPECIAL SUBAQUATIC THERAPY I - INTRODUCTION TO SUBAQUATIC THERAPY**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: **10**
Practical: **20**

1st week:
Lecture: Relationship of the humans and water

2nd week:
Lecture: Physical and chemical effects of the water on the human organism

3rd week:
Lecture: Orientation in the subaqual space

4th week:
Lecture: Analysis of the spinal column movements, adaptation of the movements to the effects of the subaqual surroundings

5th week:
Lecture: 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: relaxation and strengthening of the truncal muscles in the subaquatic space. 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:
Practical: Movements in the water: analysis of the gait in water

12th week:
Practical: Movements in the water: mobilization of the spinal column. Movements in the water: improvement of the coordination

13th week:
Practical: Fitness exercises in the water

14th week:
Practical: End-term examination

15th week:
Practical: End-term examination

Requirements

Prrequisite: Basics of Physiotherapy
Attendance at lectures is highly recommended, 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.

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

Prerequisite: Basics of Physiotherapy

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.

Subject: **SPORTS PHYSIOTHERAPY AND MEDICINE III - SPORTS PHYSIOTHERAPY**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: Principles of sports physiotherapy
Practical: Adaptation in sports

2nd week:
Lecture: Physiotherapy methods in sports physiotherapy
Practical: Strengthening of muscles in the sports activity

3rd week:
Lecture: Physiotherapy methods in sports physiotherapy II
Practical: Athletic training, improvement of the speediness and endurance

4th week:
Lecture: Types and treatment of sports injuries
Practical: Warm up and stretching in different branches of sports

5th week:
Lecture: Upper limb injuries and their rehabilitation
Practical: Proprioceptive training in the sports

6th week:
Lecture: Lower limb injuries and their rehabilitation I
Practical: Principles of sports massage, physicotherapy in the sports

7th week:
Lecture: Lower limb injuries and their rehabilitation II
Practical: Fixations and tapes in the sports

8th week:
Lecture: Trunk, pelvis, neck and head injuries and their rehabilitation
Practical: Measurement of the results in rehabilitation, instrumental investigations

9th week:
Lecture: Incidence of sports injuries in different sport branches I
Practical: Source and mechanism of injuries during sports activity I

10th week:
Lecture: Incidence of sports injuries in different sport branches II
Practical: Source and mechanism of injuries during sports activity II

11th week:
Lecture: Typical injuries of the women, children and elderly peoples, characteristics of their rehabilitation
Practical: Functional training tools

12th week:
Lecture: Physiotherapeutic relations of the sports internal medicine diseases
Practical: Diet of the sportsmen

13th week:
Lecture: Role of prevention in the sport
Practical: Return to the sport, role of the team work

14th week:
Lecture: Sports rehabilitation from medical point of view, treatment of the acute injuries
Practical: Possibilities for disabled peoples

15th week:
Lecture: Consultation
Practical: Practice exam

Requirements

Prerequisite: Traumatology and Intensive Therapy for Physiotherapists I

The attendance at lectures is strongly recommended, the attendance at practices is compulsory. If you have more than 2 absences at the practical hours the signature will be refused.

Subject: **SPORTS PHYSIOTHERAPY AND SPORTS MEDICINE IV - TAPING TECHNIQUES**
Year, Semester: 4th year/1st semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: Theoretical background, effects, precautions and requirements of kinematic taping

2nd week:
Practical: The shoulder complex: examination and differential diagnostics

3rd week:
Practical: The upper extremities: examination and differential diagnostics

4th week:
Practical: Applied techniques for shoulder complex and upper extremities: introduction and practice

5th week:
Practical: The pelvico-hip complex and lower extremities: examination and differential diagnostics

6th week:
Practical: Applied techniques for pelvico-hip complex and lower extremities: introduction and practice

7th week:
Practical: The spine: examination and differential diagnostics. Applied techniques for spine: introduction and practice

8th week:
Practical: Practice exam

Requirements

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

Attendance at practical hours is compulsory. If you miss more than 4 hours, the signature will be refused.

Subject: **SPORTS PHYSIOTHERAPY AND SPORTS MEDICINE IX – PILATES**
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: History of Pilates Method

2nd week:
Practical: Principles of Pilates

3rd week:
Practical: Spine, core and body alignment

4th week:
Practical: Muscle movement and matwork

5th week:
Practical: Abdominal work for movement and stabilization

6th week:
Practical: Strong back

7th week:
Practical: Stretching with Pilates drills

8th week:
Practical: Matwork

9th week:
Practical: Matwork with small equipments

10th week:
Practical: Pilates in sports rehabilitation

11th week:
Practical: Matwork

12th week:
Practical: Pilates Maschines

13th week:
Practical: Chiball class

14th week:
Practical: Spirals class

15th week:
Practical: Self control test
Self Control Test

Requirements

Prerequisites: Mobilization-manual Techniques I

Attendance at practical hours is compulsory. If you have more than 2 absences the signature will be refused.

Subject: **SPORTS PHYSIOTHERAPY AND SPORTS MEDICINE V - PULSE CONTROL**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **15**
Practical: **15**

1st week:
Lecture: Introduction
Practical: Using the heart rate monitor

2nd week:
Lecture: Determining individual heart rate parameters
Practical: Fitness tests

3rd week:
Lecture: Training and energy system
Practical: Cardiomachines

4th week:
Lecture: Training methods I
Practical: Runing with heart rate monitors

5th week:
Lecture: Indoor-cycling trainings
Practical: Spinning® class

6th week:
Lecture: Polar own zone method
Practical: Training with dumbells

7th week:
Lecture: Methods for calculating heart rate ranges
Practical: Outdoor sports

8th week:
Lecture: Training methods II
Practical: Circuit training

9th week:
Lecture: Heart rate variability
Practical: Cardio GX system

10th week:
Lecture: Training methods III
Practical: Interval training

11th week:
Lecture: Types of aerobic classes
Practical: Aerobic class

12th week:
Lecture: Training methods IV
Practical: Swimming

13th week:
Lecture: The Johnny G. Spinning® programme
Practical: High Intensity Spinning® class

14th week:
Lecture: Heart rate training in the sports rehabilitation
Practical: Fitness gym

15th week:
Lecture: Selfcontrol test
Practical: Selfcontrol test

Requirements

Prerequisite: Anatomy II
The attendance of lectures is highly recommended, the attendance at practices is compulsory. If you have more than 4-hour absences, the signature will be refused.

Subject: **SPORTS PHYSIOTHERAPY AND SPORTS MEDICINE VIII - STEP TRAINING**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: The aim of the step aerobics type training. Role and significance in physiotherapy. Theoretical introduction and technical basis of step aerobics. Advantages and disadvantages, possibilities for application of linear type structural class and choreography. Low-impact, high-impact steps, mixed-impact classes, basis and possibilities of OwnZone training on step stairs.

2nd week:
Practical: Theoretical introduction, technical basis and practical application of STEP BASIC type low-impact linear and choreographed structural class.

3rd week:
Practical: Interval training on step stairs. Theoretical introduction, technical basis and practical application of POWER STEP type, mixed-impact, choreographed structural class.

4th week:
Practical: Improvement of conditional skills by strenghtening exercises on step stairs. Harmony

between choreography, strenghtening and stretching.

5th week:
Practical: Cross training. Harmonic balance of fitness aerobics, step aerobics and strenghtening.

6th week:
Practical: Theoretical introduction, technical basis and practical application of STEP-DANCE type low-impact linear and choreographed structural class. Step – double: exercises in pairs – choreography onto two step stairs.

7th week:
Practical: Improvement of conditional and coordinational skills by playful form on „step stairs in cycle".

Requirements

Prerequisites: Kinesiology II, Cardiorespiratory and Exercise Physiology

The attendance at practices is compulsory. If you have more than 4-hour absence the signature may be refused.

Subject: **TOOLS IN PHYSIOTHERAPY I - GYMNASTIC EQUIPMENTS**
Year, Semester: 1st 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: Basics of Physiotherapy

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

Subject: **TOOLS IN PHYSIOTHERAPY II – BALLS**
Year, Semester: 2nd year/1st 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 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.

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.

Subject: **TOOLS IN PHYSIOTHERAPY IV – ORTHETICS-PROSTHETICS**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: **15**

1st week:
Lecture: Definition of the medical aids; history; classification

2nd week:
Lecture: Role of the medical aids in the rehabilitation; general characterization

3rd week:
Lecture: Role of physiotherapists in the patient education; development of tools

4th week:
Lecture: Upper limb ortheses, problems and possibilities

5th week:
Lecture: Lower limb ortheses

6th week:
Lecture: Lower limb prosthetics

7th week:
Lecture: Cervical spine ortheses, trunk corsets

8th week:
Lecture: Pelvic belts

9th week:
Lecture: Movement improving tools

10th week:
Lecture: Medical shoes

11th week:
Lecture: Compression stockings; incontinence management products

12th week:
Lecture: Anti-decubitus tools

13th week:
Lecture: Hygienic tools, medical aids for better quality of life

14th week:
Lecture: Hygienic tools, medical aids for better quality of life

15th week:
Lecture: Consultation

Requirements

Prerequisites: Orthopaedics for Physiotherapists, Rheumatology for Physiotherapists I, Traumatology and Intensive Therapy for Physiotherapists I

Attendance at lectures is strongly recommended.

Subject: **TOOLS IN PHYSIOTHERAPY V - SLING SUSPENSION FRAME**
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: The history of the therapy. Presentation of Sling suspension therapy. The different types of suspension device. Description of basic principles

2nd week:
Practical: The limbs suspension, mobilization in unencumbered position. Three- dimensional fixation. The role of resistance

3rd week:
Practical: Mobilization techniques in suspended position. The possibility of complex lower extremity rehabilitation. Arthrosis programme. Presentation of lower extremity exercises

4th week:
Practical: Mobilization of the cervical spine in suspended position. The triangle principle. Presentation of cervical spine exercises. Mobilization of the lumbal spine in suspended position. Presentation of lumbal spine exercises - stabilization and mobilization

5th week:
Practical: Chest mobilization in suspended position, breathing exercises. Treatment of shoulder problems in suspended position. Full body suspension

6th week:
Practical: Movement therapy for osteoporotic patients. Posture correction with sling suspension therapy. Scoliosis and spondylolysis ankylopoetica treatment in suspended position. Development of coordination and balance skills

7th week:
Practical: Prevention and wellness with sling suspension therapy.

8th week:
Practical: Practice Exam

Requirements

Prerequisites:Orthopaedics for Physiotherapists, Rheumatology for Physiotherapists I, Traumatology 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 from the practical hours.

Subject: **TOOLS IN PHYSIOTHERAPY VII – WII**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: **15**

1st week:
Practical: History and features of Wii. Wii Fit Plus and Wii Sport

2nd week:
Practical: The role of Wii in the rehabilitation. General viewpoints, goals, tasks. Overview of Wii games

3rd week:
Practical: Role of Wii in the neurology. Hemiparetic and SM patients and other neurological diseases. Practice of Wii games

4th week:
Practical: Role of Wii in the traumatology: patients with spinal cord injuries, paraplegia and other traumas. Practice of Wii games in the traumatology

5th week:
Practical: Use of Wii in case of sensory and intellectual disabilities and mental disorders. Practice of Wii games in the psychiatry

6th week:
Practical: Use of Wii in old age and childhood. Practice of Wii games

7th week:
Practical: Practice exam

Requirements

Prerequisites: Kinesiology II, Cardiorespiratory and Exercise Physiology

The attendance at practical hours is compulsory. If you miss more than 4 hours the signature will be refused.

Kenézy Life Sciences Library

Subject: **LIBRARY INFORMATICS**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: **10**
Seminar: **14**

1st week:
Lecture: (1-2) 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: (3-4) Role and structure of an academic library

3rd week:
Lecture: (5-6) Electronic library, digital library tools

4th week:
Lecture: (7-8) Process and structure of scholarly communication, primary stakeholders, new directions

5th week:
Lecture: (9-10) Evaluation of data sources in scholarly publishing, role and nature of bibliometric indicators

6th week:
Seminar: (1-2) 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: (3-4) Library catalogs: search methods and related online services

8th week:
Seminar: (5-6) Medline (PubMed) and other relevant bibliographic databases I

9th week:
Seminar: (7-8) Medline (PubMed) and other relevant bibliographic databases II

10th week:
Seminar: (9-10) Identify and acquire full-text electronic documents (EBSCO, ScienceDirect, Springer Link)

11th week:
Seminar: (11-12) Reference softwares (RefWorks): preparing bibliographies, managing bibiliographic data.

12th week:
Seminar: (13-14) Self control test
Self Control Test (Theoretical and practical knowledge)

Requirements

Prerequisite: Basics of Informatics

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

E-learning module is coupled to the course.

The grade for ESE will be calculated as the average of selfcontrol test and the scores awarded in the e-learning module. If the average is fail (1) you have to take an ESE in the examination period from the unsuccessful part(s) of the topics.

CHAPTER 14
LIST OF TEXTBOOKS

1st year
General Principles in Health Care and Nursing:

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. Mosby, 2012. ISBN: 0-3230-7933-4.

Jarvis, C.: Physical Examination and Health Assessment.6th. Saunders, 2011. ISBN: 1-4377-0151-5.

A.G. Perry, P.A. Potter, W. Ostendorf: Clinical Nursing Skills and Techniques. 8th. Mosby, 2013. ISBN: 0-3230-8383-8.

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.

Medical Latin:

Répás, L.: Basics of Medical Terminology. Répás László, 2012.

Répás, László - Bóta, Balázs: E-learning site for students of Medical terminology. URL: http://www.medi-lingua.hu

Basics of Physiotherapy:

Pagliarulo, M. A.: Introduction to Physical Therapy. 4th edition. Mosby Co, 2011. ISBN: 0-3230-7395-6.

Kissner C., L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Company, 2012. ISBN: 0-8036-2574-X.

Basic Microbiology:

Levinson, W.: Review of Medical Microbiology and Immunology. 12th edition. McGraw Hill, 2012. ISBN: 978-0071774345.

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.

Bioethics:

Walter Glannon: Biomedical Ethics. 1st. Oxford University Press, 2004. ISBN: 0-1951-4431-7.

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. ISBN: 0-1953-8022-3.

G. Gigerenzer: Reckoning With Risk. 1st edition. Penguin Books, 2003. ISBN: 0-140-29786-3.

Biophysics:

Wayne W. Daniel: Biostatistics. A foundation for Analysis in the Health Sciences. John Wiley & Sons, . ISBN: 0-471-16386-4.

Damjanovich S., J. Fidy, J. Szöllősi : Medical Biophysics. 1st edition. Medicina, 2009. ISBN: 978 963 226 249 9.

First Aid:

József Betlehem: First Things to Be Done in Emergencies – Providing First Aid for Health Professionals. Medicina Könyvkiadó Zrt. , 2012.

Kindersley D.: First Aid Manual. 10th edition. Dorling Kindersley Publishers Ltd, 2011. ISBN: 9781-4053-6214-6.

Van de Velde S, et al: European first aid guidelines. Resuscitation, 72:240-51.2007.

St. John Ambulance, St. Andrew's Ambulance Association, British Red Cross Society: First Aid Manual: The Step by Step Guide for Everyone. 9th edition. Penguin, 2009. ISBN: 1-405-33537-8.

József Betlehem: First Things to Be Done in Emergencies – Providing First Aid for Health Professionals. URL: http://www.tankonyvtar.hu/hu/tartalom/tamop425/0061_first-things-angol/adatok.html

Basics of informatics:

Handbooks of MS Office applications, Internet sources.

Basics of Sociology:

Weitz, R.: The Sociology of Health, Illness, and Health Care: A Critical Approach. 6th. Wadsworth Publishing, 2012. ISBN: 1-1118-2879-2.

Denny, E., Earle, S.: Sociology for Nurses. 2nd edition. Polity Press, 2009. ISBN: 0-7456-4625-5.

Basics of Psychology:

Groenman, N. H., Slevin, O. D., Buckenham, M.: Social and behavioral sciences for nurses. Nelson Thornes Ltd, 1992. ISBN: 1-8737-3203-1.

Genetics and Molecular Biology:

Hartl D. L.: Essential Genetics: A Genomics Perspective. 6th edition. Jones & Bartlett Publishers, 2014. ISBN: 978-1-4496-8688-8.

Cell Biology:

Alberts B., D. Bray, K. Hopkin, A. Johnson, J. Lewis, M. Raff, K. Roberts, P. Walter: Essential Cell Biology. 4rd edition. Garland Science, 2014. ISBN: 978-0-8153-4455-1.

Kinesiology I:

P.K. Levangie, C. C. Norkin: Joint Structure and Function. A Comprehensive Analysis. 5th edition. FA Davis Co, 2011. ISBN: 9780-8036-2362-0.

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 edition. Churchill Livingstone, 2008. ISBN: 0-7020-2959-9.

Hungarian Language II:

Marschalkó, Gabriella: Hungarolingua Basic Level 1. Debreceni Nyári Egyetem, 2011.

Biomechanics:

Nordin, M., Frankel, V. : Basic Biomechanics of the Musculoskeletal System. 4th edition. Lippincott Williams and Wilkins, 2012. ISBN: 1-6091-3335-8.

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.

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.

Economics:

Samuelson, P. A., Nordhaus, W. D.: Economics. McGraw-Hill, 2009. ISBN: 0-0735-1129-3.

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

Introduction to Management:

Morden, T: Principles of Management. Ashgate Pub Ltd, 2004. ISBN: 0-7546-1984-2.

Allen, D: Getting Things Done: The Art of Stress-Free Productivity. Penguin Books, 2002. ISBN: 0-1420-0028-0.

MGMT5: What's Inside: A Student Tested, Faculty-Approved Approach to Learning Principles of Management. Cengage Learning, 2012. ISBN: 1-1331-9090-1.

2nd year

Kinesiology II:

P.K. Levangie, C. C. Norkin: Joint Structure and Function. A Comprehensive Analysis. 5th edition. FA Davis Co, 2011. ISBN: 9780-8036-2362-0.

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 edition. 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.

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. 12th edition. Saunders, 2010. ISBN: 1-4160-4574-0.

Basic Biochemistry:

Devlin, T. M.: Textbook of Biochemistry with Clinical Correlations. 7th edition. John Wiley & Sons, 2010. ISBN: 0-470-28173-1.

Stryer, L. et al: Biochemistry. 6th edition. W. H. Freeman and Co., 2010.

Harvey, Ferrier: Biochemistry. 6th edition. Lippincott Williams and Wilkins, 2011.

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/publications/docs/Health_research_edited.pdf

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.

Neurophysiology:

A. Fonyó: Principles of Medical Physiology. Medicina Publishing House, Hungary, 2002. ISBN: 963-242-726-2.

R. Carpenter, B. Reddi: Neurophysiology: A Conceptual Approach. 5th. CRC Press, 2012. ISBN: 1-4441-3517-1.

R. Schmidt, T. Lee: Motor Control and Learning. A Behavioral Emphasis. 5th. Human Kinetics, 2011. ISBN: 0-7360-7961-0.

Hungarian Language III:

Győrffy Erzsébet, Ph.D.: Hogy s mint? I. . 2013.

Gerontology:

Robnett R. H., W. C. Chop: Gerontology for the Health Care Professional. 3rd edition. Jones & Bartlett Publishers, 2013. ISBN: 9781-2840-3887-3.

Sports Physiotherapy and Sports Medicine V - Pulse Control:

Friel J.: Total Heart Rate Training: Customize and Maximize Your Workout Using a Heart Rate Monitor. 1st. Ulysses Press, 2006. ISBN: 1-5697-5562-0.

Immunology:

Abbul K. Abbas, Andrew H. Lichtman, Shiv Pillai: Basic Immunology. Fourth Edition. Elsevier, . ISBN: 978-1-4557-0707-2.

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.

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CHAPTER 15
TITLES OF THESES

Department of Behavioural Sciences

1. Title: How does the body shape the mind? An interdisciplinary approach to the concept of embodiment
Tutor: Péter Molnár M.D., D.Sc.

Department of Family and Occupational Medicine

1. Title: The roles of physical activity in disease prevention
Tutor: Imre Rurik M.D., M.Sc., Ph.D., D.Sc.

Department of Preventive Medicine

1. Title: Improve the mental health of university students
Tutor: Karolina Kósa M.D., M.Sc., Ph.D.

Sport Center of University Debrecen

1. Title: Effects of Pilates exercises on the physical abilities
Tutor: Katalin Nagyné Varga M.Sc.

Department of Internal Medicine

1. Title: Effect of physical activity on physiological parameters elderly people
2. Title: Improvement of quality of life in polymyositis and dermatomyositis patients by physiotherapy
Tutor: Katalin Dankó M.D.,Ph.D.,D.Sc.

Department of Physiotherapy, Faculty of Public Health

1. Title: Study of the cardiorespiratory system
Tutor: Balázs Lukács M.Sc., Ph.D.

2. Title: Cardiorespiratory parameters of university students – survey
3. Title: Knowledge of medical students about physiotherapy – survey and improvement
4. Title: Regeneration of skeletal muscle fibres – effects of physical activity (review)
Tutor: Julianna Cseri M.D., Ph.D., C.Sc.

5. Title: Effects of physiotherapy on the changes in muscle mass and strength during a long-lasting steroid therapy
6. Title: Effects of physiotherapy on the muscle strength in myositis patients
7. Title: Possibilities of physiotherapy in the care of myositis patients
8. Title: Role of biological and physiotherapy in the treatment of rheumatoid arthritis
9. Title: Role of physiotherapy in myositis in the recovery phase
Tutor: Andrea Váncsa M.D., Ph.D.

10. Title: Improvement of proprioception by using instable instruments
11. Title: Role of physiotherapy in prevention
Tutor: Ilona Veres-Balajti M.Sc., Ph.D.

12. Title: Physiotherapy in ankylosing spondilitis
Tutor: Zsuzsanna Némethné Gyurcsik M.Sc., Ph.D.

16. Title: Importance of targeted physiotherapy exercises in gerontology
17. Title: Pelvic floor training in different ages
18. Title: Spine training exercises for improving physical activity in middle aged people
Tutor: Zsuzsa Lábiscsák-Erdélyi M.Sc.

Department of Orthopedic Surgery

1. Title: Treatment options in knee instability.
Tutor: Henrik Rybaltovszki M.D.

Department of Pediatrics

1. Title: Efficiency of Nordic Walking therapy in case of obese children regarding motivation for slimming
2. Title: Physiotherapy of diabetic children - prevention of hypoglycemia
Tutor: Enikő Felszeghy M.D.,Ph.D.

Department of Traumatology and Hand Surgery

1. Title: Shoulder replacement
Tutor: Ferenc Urbán M.D.

2. Title: Excersises of the physiotherapy in the postoperative treatment of the flexor tendon injuries
Tutor: István Frendl M.D.

3. Title: The operative treatment and physiotherapy of the adult distal humeral fractured patients in our department
Tutor: István Szarukán M.D.

4. Title: Physiotherapy after operation of the shoulder instability
Tutor: András Nagy M.D.