

**BULLETIN**

**UNIVERSITY OF DEBRECEN**

**ACADEMIC YEAR 2014/2015**

**FACULTY OF PUBLIC HEALTH**

**BSc in Physiotherapy**

**COORDINATING CENTER FOR INTERNATIONAL EDUCATION**



# Table of Contents

INTRODUCTION.....	4
ORGANISATION STRUCTURE.....	10
ADMINISTRATIVE UNITS.....	13
DEPARTMENTS OF THE FACULTY OF PUBLIC HEALTH.....	14
FACULTY OF MEDICINE - DEPARTMENTS OF BASIC SCIENCES.....	19
FACULTY OF MEDICINE - CLINICAL DEPARTMENTS.....	28
UNIVERSITY CALENDAR.....	38
ACADEMIC PROGRAM FOR CREDIT SYSTEM.....	39
ACADEMIC PROGRAM FOR THE 1ST YEAR.....	52
ACADEMIC PROGRAM FOR THE 2ND YEAR.....	80
ACADEMIC PROGRAM FOR THE 3RD YEAR.....	109
ACADEMIC PROGRAM FOR THE 4TH YEAR.....	133
ELECTIVE COURSES.....	145
LIST OF TEXTBOOKS.....	164
TITLES OF THESES.....	172

# CHAPTER 1

## INTRODUCTION

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### MISSION STATEMENT OF THE UNIVERSITY OF DEBRECEN

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 21<sup>st</sup> century. Molecular medicine is opening up and new possibilities are available for the diagnosis, prevention, prediction and treatment of the diseases. One can witness such a progress in medical sciences that has never been seen before. Modern attitudes in health care should be enforced in practice, including therapeutical approaches that consider the explanation and possible prevention of diseases, and attempt to comprehend and take the human personality into consideration. These approaches demand the application of the most modern techniques in all fields of the medical education.

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

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

With respect to research, the faculty members 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 Center are determined to preserve this achievement. Special attention is given to facilitate and support the close co-operation of researchers representing basic science and clinical research, and/or interdisciplinary studies.

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

With respect to serving the community, all faculty members 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 21<sup>st</sup> 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 16<sup>th</sup> century Debrecen became the center of the Reformed Church in Hungary and later it was referred to as the "Calvinist Rome". The 17<sup>th</sup> 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 16<sup>th</sup> 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 23<sup>rd</sup>, 1918.

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

The special training of dentists began in 1976. As a further development the University Medical School established the Health College of Nyíregyháza in 1991. In 1993, as part of a nationwide program, the University was given the rights to issue scientific qualifications and new Ph.D. programs were also launched. Several new programs (e.g. the training of molecular biologists, pharmacists, general practitioners) were commenced in the '90s. The Faculty of Public Health was established in 1999, while the Faculty of Dentistry was founded in the academic year 2000/2001.

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

is being planned.

The Medical School of the University of Debrecen celebrated the 90<sup>th</sup> anniversary of its foundation in October 2008 with a highly successful international scientific conference.

## **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. General Medicine, Dentistry, Pharmacy, Public Health, Molecular Biology, etc.) study on a beautiful campus situated in the area called “Great Forest”.

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

The Act of Higher Education (1993) has restored the rights of the medical universities to award postgraduate degrees and residency, and permission was also given to license Physicians’ procedures. This kind of training required a new structure, a new administrative apparatus, and a suitable training center. The new residency programs were commenced in 1999.

The introduction of the credit system, starting in September 2003, has been mandatory in every Hungarian university, helping the quantitative and qualitative evaluation of the students’ achievements. Admission requirements for Hungarian students are defined at national level, and they are applicable for every student wishing to be enrolled into the 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.

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 (1<sup>st</sup> and 2<sup>nd</sup> year), pre-clinical subjects (3<sup>rd</sup> year) and clinical subjects (4<sup>th</sup> and 5<sup>th</sup> year) followed by the internship (6<sup>th</sup> 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 bachelor 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 6<sup>th</sup> 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 lead by more than 100 accredited, highly qualified coordinators and tutors.

#### **MEDICAL ACTIVITY AT THE UNIVERSITY OF DEBRECEN**

The University of Debrecen is not only the second largest medical school in Hungary, but it is also one of the largest Hungarian hospitals, consisting of 49 departments; including 18 different clinical departments with more than 1,800 beds serving 62,000 inpatients and 670,000 outpatients every year. 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 (including an adult hemodialysis center, open-heart surgery facilities, kidney transplantation unit, etc.).

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

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

#### **SCIENTIFIC RESEARCH AT THE UNIVERSITY OF DEBRECEN**

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

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**NEW FACILITIES AT THE UNIVERSITY OF DEBRECEN**

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

- New units have been developed to increase the quality of the medical care (Center for Nephrology, a newly constructed building serving the Cardiology and Heart Surgery Departments, a Kidney Transplantation Unit, a new building for the 3<sup>rd</sup> Department of Medicine).
- Up to date medical imaging equipments (including X-ray, MRI and PET) are now available for research and diagnostic purposes.
- The internationally acknowledged Gamma Radiosurgery Center of Debrecen allows the application of a unique method for the treatment of neurological diseases - even within one day.
- A Hungarian-Japanese Center for Electron Microscopy has been founded recently.
- The fiber optic cable computer network of the University is connected to the Internet World Academic Computer System via the metropolitan FDDI network. Students can use up to 30 terminals at the same time in the Education Center, in the Center for Educational Development, and in a number of other departments. There is a continuous development in this area with new Ethernet and ATM networks.
- A new computer center will be established for students, having 40 workstations connected to the Internet in one of the Students' Hostels. The access will be available free of charge for all students of the University of Debrecen
- A new linear accelerator has been purchased for patients requiring radiology treatment.
- New Life Science Building and Library have been built recently.
- A similar project, aimed at the construction of a new building for the Health College Faculty in Debrecen, has been initiated.
- A new building belonging to the Faculty of Dentistry has been built.
- In the frame of the “Augusta Program” – that was launched in 2005 – a center has been established dealing with cardiovascular and tumorous diseases. The primary goal of the program is to reduce the mortality of these severe disorders.
- A new PET/CT equipment started to operate in the University of Debrecen in May 2007. This high-tech equipment not only allows easier, earlier, and more precise diagnosis of various tumorous diseases, but it also helps in the early recognition of several neurological and cardiovascular disorders.
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**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 1<sup>st</sup> 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 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 graduated students in the BSc courses of health sciences. BSc students studying in English – similarly to those studying in Hungarian – will have the opportunity to join the Students' Scientific Association, the most important means to prepare students for future academic career.

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

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## CHAPTER 2

### ORGANISATION STRUCTURE

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## CHAPTER 3

### ADMINISTRATIVE UNITS

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	Ms. Katalin Györe (Admissions, BMC, Visa Issues)
	Ms. Márta Horváthné Győri
	Ms. Krisztina Németh
	Ms. Enikő Sallai (Tuition fee, Health Insurance)

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## CHAPTER 4

### DEPARTMENTS OF THE FACULTY OF PUBLIC HEALTH

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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.
Assistant Professor	Ms. Beáta Erika Nagy M.A., Ph.D.
	Ms. Margit Bóta M.A., Ph.D.
	Péter Kakuk M.A., Ph.D.
	Ms. Lili Kövér M.A.
Assistant Lecturer	Roland Tiszljár
	Sándor Kőműves M.A., Ph.D.
Junior Scientific Officer	Ádám Kárpáti B.Sc.
Psychologist	Ms. Beáta Kovács-Tóth M.A.
Invited Lecturer	Ms. Eszter Tiszljár - Szabó M.A.
	Bence Döbrössy M.A.
	Ms. Bernadett Bodor M.Sc.
Intern	Ms. Márta Erdei M.Sc.
	Ms. Bernadett Hidegh M.Sc.
	Ms. Katalin Merza M.A.
	Ms. Magdolna Barbócz M.Sc.
	Ms. Réka Cserepes M.A.
	Ms. Amanda Illés M.Sc.
	Ms. Éva Knapek M.Sc.
	Ms. Erika Nagy M.Sc.
	Gellért Raffai M.Sc.
	Ms. Margit Bóta M.A., Ph.D. (3rd year, Med. Psychology, Dentistry)
Academic Advisor	Péter Kakuk M.A., Ph.D. (4th year, Bioethics)
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Associate Professor	Tamás Bányász M.D., Ph.D. Tamás Bíró M.D., Ph.D., D.Sc. Péter Szűcs M.D., Ph.D.

FACULTY OF MEDICINE - DEPARTMENTS OF BASIC SCIENCES

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 Szentandrassy M.D., Ph.D.
Assistant Lecturer	Áron Kőszeghy 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 Gönczi M.Sc., Ph.D.
	Ms. Mónika Sztretye M.Sc., Ph.D.
Junior Research Fellow	Ms. Marietta Budai M.Sc.
	Dénes Nagy M.Sc.
	Tamás Oláh M.Sc., Ph.D.
OTKA Postdoctoral Fellow	János Fodor M.Sc., Ph.D.
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	Norbert Balogh M.Sc.
	Ms. Dóra Bodnár M.Sc.
	Ms. Csilla Bordás M.Sc.
	Bence Hegyi M.D.
	Kornél Kistamás M.Sc.
	Ms. Adrienn Kovács M.Sc.
	Ms. Zsuzsanna Nagy M.Sc.
	Ms. Edina Orosz M.Sc.
	Ferenc Ruzsnavszky M.D.
	Imre Lőrinc Szabó M.D.
	Ms. Adrienn Tóth M.Sc.
	Ms. Krisztina Vácz M.D.
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## CHAPTER 6

### FACULTY OF MEDICINE - CLINICAL DEPARTMENTS

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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.

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Zsolt Kőszegi M.D., Ph.D.

Assistant Professor

Ms. Judit Barta M.D., Ph.D.

Ms. Annamária Bódi M.D., Ph.D.

Attila Borbély M.D., Ph.D.

Tibor Fülöp M.D., Ph.D.

Tibor Szűk M.D., Ph.D.

Cardiologist

László Balogh M.D.

Ms. Orsolya Bene M.D.

Marcel Clemens M.D., Ph.D.

Ms. Andrea Daragó M.D.

Ms. Zita Hertelendi M.D., Ph.D.

---

FACULTY OF MEDICINE - CLINICAL DEPARTMENTS

	Attila Kertész M.D., Ph.D.
	Csaba Kun M.D.
	Andrij Leny M.D.
	László. Nagy M.D.
	Ms. Andrea Péter M.D.
	Ms. Ildikó Rác 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.
	Rudolf Kolozsvári M.D., Ph.D.
	Ms. Erzsébet Lizanecz M.D., Ph.D.
	Sándor Sipka M.D., Ph.D.
Resident	Ms. Ágnes Balogh M.D., Ph.D.
	Dániel Czuriga M.D., Ph.D.
	Miklós Fagyas M.D., Ph.D.
	Ms. Emese Gyöngyvér Kovács M.D., Ph.D.
	Bertalan Kracsó M.D.
	Ms. Ágnes Orsolya Rác M.D.
	Ms. Andrea Szegedi M.D., Ph.D., D.Sc.

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Assistant Professor

Zoltán Vincze M.D., Ph.D.

Invited Lecturer

István Lunczer M.D.

Gergely Nagy M.D.

Tamás Ötvös M.D.

Gábor Seres M.D.

Ms. Dóra Ujvárosy M.D.

**Division of Geriatry**

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Clinical Doctor	Ms. Adrienn Szabó M.D.

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	Ms. Gabriella Szűcs M.D., Ph.D.
Assistant Professor	Ms. Szilvia Szamosi M.D., Ph.D.
	Ms. Andrea Váncsa M.D., Ph.D.
Assistant Lecturer	Ms. Edit Végh M.D.
Clinical Specialist	Ms. Nóra Bodnár M.D.
Registrar	Ms. Katalin Gulyás M.D.
	Ms. Ágnes Horváth M.D.
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Professor Emeritus	Ferenc Mechler M.D., Ph.D., D.Sc.
Associate Professor	Ms. Tünde Csépany 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. Eszter Hidas M.D., Ph.D.
	Bertalan Vámosi M.D.
Assistant Lecturer	Ms. Krisztina Csapó M.D.
	Ms. Klára Fekete M.D., Ph.D.
	Norbert Kozák M.D.
	Zsolt Mezei M.D.
Clinical Assistant	Ms. Anita Frenzl M.D.

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FACULTY OF MEDICINE - CLINICAL DEPARTMENTS

	Ms. Edina Kovács M.D.
	Ms. Katalin Réka Kovács (M.D.)
	Ms. Szilvia Puskás M.D., Ph.D.
Candidate Clinical Assistant	Ms. Rita Szepesi M.D. Szabolcs Farkas M.D., Ph.D.
Resident	Ms. Katalin Szabó M.D. Gergely Hofgárt M.D.
	Ms. Orsolya Kárász M.D.
	Ms. Kitti Bernadett Kovács M.D.
PhD Student	Ms. Lilla Rác M.D. Ms. Aletta Harmann M.D. Ms. Csilla Vér

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Associate Professor	Attila Jakab M.D., Ph.D. Tamás Szilveszter Kovács M.D., Ph.D. Tamás Major M.D., Ph.D. Péter Szeverényi M.D., Ph.D.
Assistant Professor	Ms. Olga Török M.D., Ph.D. László Birinyi 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.
Assistant Lecturer	Ms. Szilvia Vad M.D., Ph.D. Ms. Tünde Bartha M.D. Péter Daragó M.D. Tamás Deli M.D., Ph.D. István Fekete M.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.	Ágnes Farkas M.D.
		Bence Kozma M.D.
		Rudolf Lampé M.D., Ph.D.
Candidate Clinical Assistant		Balázs Erdődi M.D.
		László Orosz M.D.
Psychologist	Ms.	Zsuzsa Török M.A., Ph.D.
Academic Advisor (IV. Year, Physiotherapy)		Tamás Szilveszter Kovács M.D., Ph.D.
Academic Advisor (VI. year)		Tamás Major M.D., Ph.D.

### DEPARTMENT OF ORTHOPEDIC SURGERY

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		Kálmán Szepesi M.D., Ph.D., D.Sc.
Assistant Professor		Zoltán Jónás M.D.
Assistant Lecturer		Tamás Bazsó M.D.
		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.
Resident		Gyula Gyórfi M.D.

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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.
Associate Professor, Head of Division of General Pediatrics		Gábor Mogyorósy M.D., Ph.D.

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FACULTY OF MEDICINE - CLINICAL DEPARTMENTS

Associate Professor, Head of Division of Pediatric Emergency Care	Béla Nagy M.D., Ph.D., D.Sc.
Associate Professor	István Csízy M.D., Ph.D.
	Ms. Ilona György M.D., Ph.D.
	Ms. Rita Káposzta M.D., Ph.D.
	Ms. Ilma Korponay-Szabó M.D., Ph.D.
	Gábor Mogyorósy 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. 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.
Clinical Assistant	Zsolt Bene M.D.
	Ms. Andrea Berkes M.D.
	Ms. Erika Biró M.D.
	Norbert Elek M.D.
	Imre Gáspár M.D.
	Ms. Éva Juhász M.D.
	Ms. Orsolya Kadenczki M.D.
	Ms. Ágnes Magyar M.D.
	Ms. Zsuzsa Mándi M.D.
	Ms. Orsolya Nagy M.D.
	Ms. Katalin Szakszon M.D.
	Sándor Szima M.D.
	Ms. Petra Varga M.D.
Resident	Károly Bakó M.D.
	Gergely Balázs M.D.
	Ms. Anita Brojnás 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. Sándor Kőmíves M.D.
	Ms. Erzsébet Ilona Lakatos M.D.
	Lajos Lantos M.D.

	Ms. Edina Mák M.D.
	Ms. Mariann Márki M.D.
	Ms. Katalin Nagy M.D.
	Ms. Petronella Orosz M.D.
	Ms. Tímea Rózsa M.D.
	Ms. Vanda Soltész M.D.
	Levente Szabó M.D.
	Ms. Anna Szöllös M.D.
	Ms. Krisztina Vasas M.D.
	Ms. Zsuzsa Zele M.D.
	Ms. Tímea Kincsó Zoltán M.D.
Psychologist	Ms. Erika Tizedes
Academic Advisor	Gábor Mogyorósy M.D., Ph.D.
	Tamás Szabó M.D., Ph.D.
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Psychologist	Ms. Andrea Burainé Bojtor M.Sc.
Physiotherapist	Ms. Andrea Györfiné Jánossy M.A.
	Ms. Zsanett Sipos M.A.
Physiotherapist and Ergotherapist	Ms. Zsófia Hőgye M.A.
Nutricionist	Ms. Réka Palotás M.A.
Specialist	Ms. Ágnes Bajusz-Leny M.D.
	Ms. Judit Horváth M.D.
	Ms. Éva Szabó M.D.
	Ms. Zsuzsanna Vekerdy-Nagy M.D., Ph.D.
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PhD Student	Ms. Adél Nagy M.D.
	Ms. Zsanett Sipos M.A.
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	Ms. Judit Balázs M.D.
	Ms. Edina Cserép M.D.
	Ms. Ildikó Kele M.D.
	Attila Kovács
	Ms. Erzsébet Magyar M.D.
	Csaba Mór E. M.D., Ph.D.
	Ms. Ágnes Süveges M.D.
	Ms. Katalin Tolvay M.D.
Resident	Ms. Anett Balázs M.D.
	Ms. Ágoston Gajdos M.D.
	Tibor Jáger M.D.
	Balázs Jeges M.D.
	Ms. Marietta Nagy M.D.
	Attila Nagy M.D.
	Ms. Bence Szerdahelyi M.D.
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	Ms. Emese Kulcsár M.A.
	Ms. Ella Molnár
	Ms. Andrea Ritz M.A.
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Trainee Specialist	Ms. Judit Dávid M.D.
	Zoltán Erdődi M.D.
	Attila Nagy M.D.
Resident	Attila Makai M.D.

Specialist	Ms. Regina Szűcs M.D.
	Ms. Andrea Fodor M.D.
	Tamás Kardos M.D.
	Ms. Melinda Lajtos M.D.
	Attila Lieber M.D.
	Ms. Angéla Mikáczó M.D.
	Ms. Csilla Ördög M.D.
	Ms. Zsuzsa Papp M.D.
	Ms. Anna Sárközi M.D.
	Attila Vaskó M.D.
József Vass M.D.	
Responsible for Educational Matters	Ms. Andrea Fodor M.D.

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Assistant Professor	Mózes Péter jr. M.D.
Assistant Lecturer	Ms. Judit Sikula M.D.
	Botond Karácsonyi M.D.
Registrar	Ms. Éva Pásztor M.D.
	Gábor Endes M.D.
Resident	Momi Shandeep Singh M.D.
	Ms. Judit Bánk M.D.
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### DEPARTMENT OF TRAUMATOLOGY AND HAND SURGERY

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Professor Emeritus	Zoltán Záborszky M.D., Ph.D.
Hon. Associate Professor	Géza Ács M.D.
Head Surgeon	István Frenzl M.D.
	Sándor Kiss M.D.

---

FACULTY OF MEDICINE - CLINICAL DEPARTMENTS

Chief Surgeons of the Kenézy Hospital	Ferenc Urbán M.D.	
	János Bagyó M.D.	
	József Balázs M.D.	
	Béla Barta M.D.	
	Zoltán Dézsi M.D.	
	Péter Horkay M.D.	
	Árpád Kiss M.D.	
	Bojko Lazarov Szeferinkin M.D.	
	László Molnár M.D.	
	Levente Molnár M.D.	
	András Nagy M.D.	
	Árpád Németh M.D.	
	Dániel Rezes M.D.	
	Zsigmond Varga M.D.	
Surgeons of the Kenézy Hospital	Árpád Barkaszi M.D.	
	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.	
	Zoltán Németi M.D.	
	Zoltán Domokos Pap M.D.	
	József Papp M.D.	
	Péter Berényi M.D.	
	Károly Elek M.D.	
Márton Árpád Fésüs M.D.		
Resident	László Gubik M.D.	
	Gergely Huszanyik M.D.	
	Dávid Kovács M.D.	
	Csaba Körei M.D.	
	Zoltán Mikó M.D.	
	Ms. Katalin Muraközy M.D.	
	István Szarukán M.D.	
	Consultant	Ferenc Urbán M.D.
	Academic Advisor	

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## CHAPTER 7

### UNIVERSITY CALENDAR

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#### UNIVERSITY CALENDAR FOR BSC IN PHYSIOTHERAPY PROGRAM ACADEMIC YEAR 2014/2015

**OPENING CEREMONY:** 7<sup>th</sup> September, 2014

#### 1<sup>st</sup> SEMESTER

**REGISTRATION WEEK:** 1<sup>st</sup> September - 5<sup>th</sup> September, 2014

Year	Course	Examination Period
1 <sup>st</sup> - 4 <sup>th</sup> year	8 <sup>th</sup> September - 19 <sup>th</sup> December, 2014 (15 weeks)	22 <sup>th</sup> December, 2014 - 6 <sup>th</sup> February, 2015 (7 weeks)

#### 2<sup>nd</sup> SEMESTER

**REGISTRATION WEEK:** 2<sup>nd</sup> February - 6<sup>th</sup> February, 2015

Year	Course	Examination Period
1 <sup>st</sup> - 4 <sup>th</sup> year	9 <sup>th</sup> February - 22 <sup>nd</sup> May, 2015 (15 weeks)	26 <sup>th</sup> May - 10 <sup>th</sup> July 2015 (7 weeks)

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## CHAPTER 8

# ACADEMIC PROGRAM FOR CREDIT SYSTEM

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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	1 <sup>st</sup> semester						2 <sup>nd</sup> 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_02	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					None
Communication Skills	NPHYS_COM_02						10		20	AW5					None
Economics	NPHYS_ECO_02						15			ESE					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
Genetics and Molecular Biology	NPHYS_GEN_02						30			ESE					None
Health Care Law	NPHYS_HCL_02						30			ESE					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	1 <sup>st</sup> semester					2 <sup>nd</sup> semester					Crtd.				
		L	S	P	Exam	Crtd.	L	S	P	Exam	Crtd.					
<b>Kinesiology I</b>	NPHYS_KINI_02										30	30	60	ESE	8	Anatomy I, Basics of Physiotherapy
<b>Medical Latin</b>	NPHYS_LAT_01			30	AW5	2										None
<b>Philosophy</b>	NPHYS_PHI_01		15		ESE	1										None
<b>Physical Education I</b>	NPHYS_PHE_01			30	SIGN	0										None
<b>Physical education II</b>	NPHYS_PHE_02												30	SIGN	0	None

Compulsory courses														
2. year														
Subjects	Neptun code	1 <sup>st</sup> semester						2 <sup>nd</sup> semester						
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.	Prerequisites of taking the subject		
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
Basics of research methodology	NPHYS_RES_03	30			ESE	2								Basics of Informatics
Biochemistry	NPHYS_BCH_04						10	5			1	ESE		Basic Biochemistry
Cardiorespiratory and Exercise Physiology	NPHYS_CEPN_03	15	5	12	ESE	2								Anatomy II
Dietetics	NPHYS_DIE_04						15				2	AW5		General Principles of Patient Care and Nursing, Physiology
Electro-, balneo-, hydro-, and climatotherapy	NPHYS_EBH_04						15				2	ESE		Biophysics, Cardiorespiratory and Exercise Physiology, Neurophysiology
Gerontology	NPHYS_GER_03	30			ESE	2								Basics of Sociology
Hungarian Language II/2.	NPHYS_HUN_04									30		AW5	1	Hungarian language II/1.
Hungarian Language III	NPHYS_HUN_03			30	SIGN	0								Hungarian Language II
Internal Medicine for Physiotherapists I	NPHYS_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	1 <sup>st</sup> semester						2 <sup>nd</sup> semester							
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.				
Kinesiology	NPHYS_KCE_04													0	Kinesiology I and II
Kinesiology Clinical Practice	NPHYS_KCP_04										80				Kinesiology II
Kinesiology II	NPHYS_KINN_03	30	15	120	ESE	10									Kinesiology I
Mobilization-Manual Techniques I	NPHYS_MMT_04										10	15	90	7	Kinesiology II, Neurophysiology
Neurophysiology	NPHYS_NPHN_03	15	10	3	ESE	2									Anatomy II
Pathology	NPHYS_PATN_04										30				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															
3. year															
Subjects	Neptun code	1 <sup>st</sup> semester						2 <sup>nd</sup> semester						Prerequisites of taking the subject	
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.				
Cardiovascular Clinical Practice	NPHYS_CCP_06							80	SIGN	0				0	Internal Medicine for Physiotherapists III
Infant Care and Paediatrics for Physiotherapists I	NPHYS_PEDN_06					30		30	ESE	4				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	ESE	5				5	Pathology, Mobilization-Manual Techniques II
Obstetrics and Gynaecology for Physiotherapists	NPHYS_OGP_05	30		45	ESE	3									Kinesiology II, Internal Medicine for Physiotherapists I
Orthopaedics for Physiotherapists I	NPHYS_ORP_05	10	20		ESE	2									Biomechanics, Mobilization-Manual Techniques I
Paediatrics Clinical Practice	NPHYS_IPP_06							80	SIGN	0				0	Infant Care and Paediatrics for Physiotherapists 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	ESE	7				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														
3. year (continued)														
Subjects	Neptun code	1 <sup>st</sup> semester						2 <sup>nd</sup> semester						Prerequisites of taking the subject
		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 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
Professional Orientation	NPHYS_ORIN_06									15	AW5	1		Basics of Research Methodology
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											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														
4. year														
Subjects	Neptun code	1 <sup>st</sup> semester						2 <sup>nd</sup> semester						
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.			
Health informatics	NPHYS_HINF_07	10		20	AW5	2								Basics of Informatics, Preventive Medicine and Public Health II
Infant Care and Paediatrics for Physiotherapists II	NPHYS_PEDN_07	15		10	ESE	1								Infant Care and Paediatrics for Physiotherapists I
Internal Medicine Clinical Practice	NPHYS_IMP_N_08									80	AW5	3		Internal Medicine for Physiotherapists III
Neurology Clinical Practice	NPHYS_NEPN_08									80	AW5	3		Neurology for Physiotherapists II
Neurology for physiotherapists II	NPHYS_NEUII_07	15	15	45	ESE	3								Neurology for Physiotherapists I
Orthopaedics Clinical Practice	NPHYS_ORPN_08										120	AW5	4	Physiotherapy of the Movement System (PT in Orthopaedics and Traumatology)
Physiotherapy of the Movement System II - PT in Orthopaedics and Traumatology	NPHYS_PMS_07			60	SIGN	0								Physiotherapy of the Movement System I - PT in Orthopaedics and Traumatology
Psychiatry II	NPHYS_PSYN_07	15		15	ESE	2								Psychiatry I
Rehabilitation	NPHYS_REHN_07	30	15	15	ESE	3								Rheumatology for Physiotherapists II, Physiotherapy of Movement System - PT in Orthopaedics and Traumatology
Rehabilitation Clinical Practice	NPHYS_REPN_08										80	AW5	3	Rehabilitation

Compulsory courses														Prerequisites of taking the subject
4. year (continued)														
Subjects	Neptun code	1 <sup>st</sup> semester						2 <sup>nd</sup> semester						
		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	1 <sup>st</sup> semester						2 <sup>nd</sup> semester								
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.					
Health Psychology	NPHYS_HPS_02							15		ESE	1			ESE	1	Basics of Psychology
Immunology	NPHYS_IME_02							30			2			ESE	2	None
Special Methods in Physiotherapy VIII - Complementer and Alternative Medicine	NPHYS_CAM_02							15			1			AW5	1	None
Special Subaquatic Therapy I - Introduction to Subaquatic Therapy	NPHYS_SAT_02							10			2			AW5	2	Basics of Physiotherapy
Sports Physiotherapy and Medicine I - Measurement and Improvement of Physical Abilities	NPHYS_MIM_02							15			2			AW5	2	Basics of Physiotherapy

Required elective courses															
2. year															
Subjects	Neptun code	1 <sup>st</sup> semester					2 <sup>nd</sup> semester					Prerequisites of taking the subject			
		L	S	P	Exam	Crd.	L	S	P	Exam	Crd.				
Health Sociology	NPHYS_HSCN_04						30		ESE				ESE	2	Basics of Sociology
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 I - Gymnastic Equipments	NPHYS_GEQ_02											30	AW5	2	Basics of Physiotherapy
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														
3. year														
Subjects	Neptun code	1 <sup>st</sup> semester						2 <sup>nd</sup> semester						Prerequisites of taking the subject
		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	None
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 - Orthotics-Prosthetics	NPHYS_OPR_06						15					AW5	1	Orthopaedics for Physiotherapists, Rheumatology for Physiotherapists I, Traumatology and Intensive Therapy for Physiotherapists I

Required elective courses														
4. year														
Subjects	Neptun code	1 <sup>st</sup> semester						2 <sup>nd</sup> semester						Prerequisites of taking the subject
		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 Physiotherapy 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: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **42**

Seminar: **15**

Practical: **15**

#### 1<sup>st</sup> 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

#### 2<sup>nd</sup> 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

#### 3<sup>rd</sup> 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

#### 4<sup>th</sup> week:

**Lecture:** Histology of the skeletal muscle. The muscles of the upper limb. Brachial plexus

**Practical:** The muscles of the upper limb.

#### 5<sup>th</sup> week:

**Lecture:** Innervation and blood vessels of the upper limb. Action of muscles of the shoulder and the arm.

**Practical:** Nerves and blood vessels of the upper limb

#### 6<sup>th</sup> 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

#### 7<sup>th</sup> 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)**

#### 8<sup>th</sup> week:

**Lecture:** Joints of the lower limb. Muscles of the lower limb

**Seminar:** Joints of the lower limb

#### 9<sup>th</sup> 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

#### 10<sup>th</sup> 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

#### 11<sup>th</sup> 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

#### 12<sup>th</sup> 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)****13<sup>th</sup> 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

**14<sup>th</sup> 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

**15<sup>th</sup> 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

**Department of Behavioural Sciences, Faculty of Public Health**

Subject: **BASICS OF PSYCHOLOGY**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

**1<sup>st</sup> week:**

**Lecture:** Introduction to psychology

**2<sup>nd</sup> week:**

**Lecture:** Theories of personality I

**3<sup>rd</sup> week:**

**Lecture:** Theories of personality II

**4<sup>th</sup> week:**

**Lecture:** Human development

**5<sup>th</sup> week:**

**Lecture:** The first year of life

**6<sup>th</sup> week:**

**Lecture:** The young child: from 1 to 4 years

**7<sup>th</sup> week:**

**Lecture:** The preschool child: from 4 to 6 years

**8<sup>th</sup> week:**

**Lecture:** The schoolchild: from 6 to 12 years

**9<sup>th</sup> week:**

**Lecture:** The adolescent: from 12 to 22 years

**10<sup>th</sup> week:**

**Lecture:** The young adult: from 22 to 40 years

**11<sup>th</sup> week:**

**Lecture:** The older adult: from 40 to 65 years

**12<sup>th</sup> week:**

**Lecture:** The ageing years: from 65 till death

**13<sup>th</sup> week:**

**Lecture:** Interpersonal behaviour. The psychology of social interaction I

**14<sup>th</sup> week:**

**Lecture:** Interpersonal behaviour. The psychology of social interaction II

**15<sup>th</sup> week:**

**Lecture:** The qualities of a 'good' physiotherapist from the patients' perspective

### Requirements

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

## Department of Behavioural Sciences, Faculty of Public Health

Subject: **BIOETHICS**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

**1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

**Lecture:** The nature of ethical decision making in clinical context

**3<sup>rd</sup> week:**

**Lecture:** The principles of modern bioethics

**4<sup>th</sup> week:**

**Lecture:** Paternalism and anti-paternalism in modern bioethics

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

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

**7<sup>th</sup> week:**

**Lecture:** The Hippocratic tradition in health care ethics

**8<sup>th</sup> week:**

**Lecture:** End-of-life decisions

**9<sup>th</sup> week:**

**Lecture:** Basic questions in contemporary research ethics

**10<sup>th</sup> week:**

**Lecture:** Ethics of new biotechnologies

**11<sup>th</sup> week:**

**Lecture:** The ethical aspects of physiotherapeutic practice

**12<sup>th</sup> week:**

**Lecture:** Ethics and medical anthropology of disability

**13<sup>th</sup> week:**

**Lecture:** Ethics of nursing

**14<sup>th</sup> week:**

**Lecture:** Basic questions in public health ethics

**15<sup>th</sup> 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.

## Department of Behavioural Sciences, Faculty of Public Health

Subject: **PHILOSOPHY**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Seminar: **15**

**1<sup>st</sup> week:**

**Lecture:** Introduction – Plato’s Metaphor of the Cave

**2<sup>nd</sup> week:**

**Lecture:** M. Heidegger: What is Metaphysics?

**3<sup>rd</sup> week:**

**Lecture:** What is Metaphysics?

**4<sup>th</sup> week:**

**Lecture:** R. Carnap: Overcoming Metaphysics through the Logical Analysis of Language

**5<sup>th</sup> week:**

**Lecture:** R. Carnap: Overcoming Metaphysics through the Logical Analysis of Language

**6<sup>th</sup> week:**

**Lecture:** Philosophical Problems of Health and Disease I

**7<sup>th</sup> 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 Biophysics and Cell Biology

Subject: **BIOPHYSICS**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **12**

Seminar: **20**

**1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

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

**3<sup>rd</sup> week:**

**Seminar:** (7-9) Biostatistics: Binomial, Poisson and normal distributions

**4<sup>th</sup> 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

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

**Lecture:** (1-2) Mechanics of solid bodies, biomechanics

**Seminar:** Midterm exam

**Self Control Test (Midterm Exam of Biostatistics)**

**7<sup>th</sup> week:**

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

**8<sup>th</sup> week:**

**Seminar:** (15-16) Biophysics: material of lectures 1 and 2

**9<sup>th</sup> week:**

**Lecture:** (5-6) Basics of electricity, medical applications

## CHAPTER 9

### 10<sup>th</sup> week:

**Lecture:** (7-8) Atomic physics, X-rays

### 11<sup>th</sup> week:

**Seminar:** (17-18) Biophysics: material of lectures 3 and 4

### 12<sup>th</sup> week:

**Lecture:** (9-10) Nuclear physics, radioactive isotopes and radiation

### 13<sup>th</sup> week:

**Lecture:** (11-12) Medical imaging methods

### 14<sup>th</sup> week:

**Seminar:** (19-20) Biophysics: material of lectures 5 and 6

### 15<sup>th</sup> 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.

## Department of Foreign Languages

Subject: **HUNGARIAN LANGUAGE I**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **30**

### 1<sup>st</sup> week:

**Practical:** Organization of the course

### 2<sup>nd</sup> week:

**Practical:** Introduction, the Hungarian alphabet, pronunciation rules

### 3<sup>rd</sup> week:

**Practical:** Ki vagy? (Who are you?) Personal pronouns

### 4<sup>th</sup> week:

**Practical:** Jó napot kívánok! (Greetings, formal and informal, basic situations)

### 5<sup>th</sup> week:

**Practical:** Számok (Numbers, phone numbers)

### 6<sup>th</sup> week:

**Practical:** Time expressions

### 7<sup>th</sup> week:

**Practical:** Pénz (Money, banknotes, ordinal numbers, how much? how many?)

### 8<sup>th</sup> week:

**Practical:** Revision. Mid-term test.

### 9<sup>th</sup> week:

**Practical:** Hogy vagy? (How are you?)

### 10<sup>th</sup> week:

**Practical:** Milyen nyelven beszélsz? (What language do you speak?, nationalities)

### 11<sup>th</sup> week:

**Practical:** Mit csinálsz? (What are you doing? verb conjugation)

### 12<sup>th</sup> week:

**Practical:** Hová mész ma este? (Where are you going tonight? Past, present, future, where ...to?)

**13<sup>th</sup> week:**

**Practical:** "Lenni" in past and future. Adverbs of place.

**14<sup>th</sup> week:**

**Practical:** Revision. End-term test.

**15<sup>th</sup> 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. The missed classes may only be made up in the same week. Maximally, two language classes may be made up with another group and students have to ask for written permission (via e-mail) 24 hours in advance from the teacher whose class they would like to attend for a makeup because of the limited seats available. 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.

The minimum requirement for the mid-term and the end-term tests is 50 % each. If a student does not score this much he/she has to repeat the test. 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 Foreign Languages

Subject: **MEDICAL LATIN**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **30**

**1<sup>st</sup> week:**

**Practical:** The Latin and Greek alphabet and pronunciation; Basic terminology of health sciences

**2<sup>nd</sup> week:**

**Practical:** Planes and directional terms in anatomical terminology; Latin adjectives

**3<sup>rd</sup> week:**

**Practical:** The parts of the body. Latin and Greek words and word roots.

**4<sup>th</sup> week:**

**Practical:** Genitive case and plural forms of Latin nouns.

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

**Practical:** Regions. Adjective formation.

**7<sup>th</sup> week:**

**Practical:** Revision. Mid-term test.

**8<sup>th</sup> week:**

**Practical:** Joints, movements.

**9<sup>th</sup> week:**

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

**10<sup>th</sup> week:**

**Practical:** Complex adjectives, prefixes.

**11<sup>th</sup> week:**

**Practical:** Muscles.

**12<sup>th</sup> week:**

**Practical:** Clinical terms of muscular system

**13<sup>th</sup> week:**

**Practical:** Cardiovascular system.

**14<sup>th</sup> week:**

**Practical:** Revision End-term test

**15<sup>th</sup> 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. The missed classes may be made up only in the same week. Maximally, two language classes may be made up with another group and students have to ask for written permission (via e-mail) 24 hours in advance from the teacher whose class they would like to attend for a makeup because of the limited seats available. 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.

The minimum requirement for the mid-term and the end-term tests is 50 % each. If a student does not score this much he/she has to repeat the test. 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: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

### 1<sup>st</sup> week:

**Lecture:** The microbial world, 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

### 2<sup>nd</sup> 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

### 3<sup>rd</sup> 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)

### 4<sup>th</sup> week:

**Lecture:** Overview of the major Gram positive

bacteria; Staphylococci, Streptococci, Bacillus, Clostridia; zoonosis; epidemiology and clinical findings; laboratory diagnosis

### 5<sup>th</sup> week:

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

### 6<sup>th</sup> week:

**Lecture:** Bacterial respiratory tract diseases, skin and soft tissue infections caused by bacteria; Mycobacterium tuberculosis, Corynebacterium diphtheriae, Bordetella pertussis, Streptococcus pneumoniae, Haemophilus influenzae, Legionella pneumophila, Mycoplasma pneumoniae, Staphylococcus aureus, Streptococcus pyogenes, Clostridium perfringens

### 7<sup>th</sup> week:

**Lecture:** Sexually transmitted bacterial diseases. Central nervous system diseases caused by bacteria; Neisseria gonorrhoeae, Treponema pallidum, Chlamydia trachomatis, Neisseria meningitidis,

## CHAPTER 9

Escherichia coli, Streptococcus pneumoniae, Streptococcus agalactiae, Listeria monocytogenes, Leptospira

### 8<sup>th</sup> week:

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

### 9<sup>th</sup> 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

### 10<sup>th</sup> 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

### 11<sup>th</sup> 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

### 12<sup>th</sup> 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

### 13<sup>th</sup> week:

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

### 14<sup>th</sup> week:

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

### 15<sup>th</sup> week:

**Lecture:** Consultation

## Requirements

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **BASICS OF PHYSIOTHERAPY**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

Practical: **30**

### 1<sup>st</sup> week:

**Lecture:** Introduction to physiotherapy

**Practical:** Making somebody aware stretching and relaxation. Warm-up exercises

### 2<sup>nd</sup> week:

**Lecture:** History of physiotherapy from the ancient times to the end of 20<sup>th</sup> century

**Practical:** Trunk exercises in a laying position

### 3<sup>rd</sup> 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

### 4<sup>th</sup> week:

**Lecture:** Main elements of the physiotherapy education. National and international professional organizations in physiotherapy

**Practical:** Practice of exercises

### 5<sup>th</sup> 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

<p><b>6<sup>th</sup> week:</b>  <b>Lecture:</b> Physical basis of the movement. Kinematics, equilibrium, performance  <b>Practical:</b> Exercises in sitting position</p> <p><b>7<sup>th</sup> week:</b>  <b>Lecture:</b> Biological basis of the movement. Active and passive elements of the movement system  <b>Practical:</b> Climbing positions, exercises in this position</p> <p><b>8<sup>th</sup> week:</b>  <b>Lecture:</b> Stimulus, reaction, regulation of the movement  <b>Practical:</b> Exercises in kneeling and semi-kneeling positions</p> <p><b>9<sup>th</sup> week:</b>  <b>Lecture:</b> Possibilities for the training of muscles. Performance, fatigue  <b>Practical:</b> Practice of exercises</p> <p><b>10<sup>th</sup> week:</b>  <b>Lecture:</b> Movements in the space. Planes, axes  <b>Practical:</b> Teaching the correct standing. Straight and round flexion of the trunk</p>	<p><b>11<sup>th</sup> week:</b>  <b>Lecture:</b> Orientation, kinesthesia  <b>Practical:</b> Exercises in a standing position</p> <p><b>12<sup>th</sup> week:</b>  <b>Lecture:</b> Applicable postures in the training programs  <b>Practical:</b> Exercises to prepare of walk, walking exercises</p> <p><b>13<sup>th</sup> week:</b>  <b>Lecture:</b> Principles of a general training in physiotherapy  <b>Practical:</b> Coordination exercises in different positions</p> <p><b>14<sup>th</sup> week:</b>  <b>Lecture:</b> Schematic representation of the movement  <b>Practical:</b> Assessment of practical knowledge</p> <p><b>15<sup>th</sup> week:</b>  <b>Lecture:</b> Summary, consultation  <b>Practical:</b> Assessment of practical knowledge</p>
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### 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).

## Department of Physiotherapy, Faculty of Public Health

Subject: **BASICS OF SOCIOLOGY**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

**1<sup>st</sup> week:**

**Lecture:** Introduction to sociology and to the module

**2<sup>nd</sup> week:**

**Lecture:** Definition of health; gender and health

**3<sup>rd</sup> week:**

**Lecture:** Social class and health; ethnicity and health

**4<sup>th</sup> week:**

**Lecture:** Families and changing family relationships

**5<sup>th</sup> week:****Lecture:** Social forces, health and illness**6<sup>th</sup> week:****Lecture:** The social distribution of illness**7<sup>th</sup> week:****Lecture:** The experience of illness, social contexts**8<sup>th</sup> week:****Lecture:** Disability and chronic illness**9<sup>th</sup> week:****Lecture:** Mental health and mental illness**10<sup>th</sup> week:****Lecture:** The profession of medicine**11<sup>th</sup> week:****Lecture:** Other health care providers**12<sup>th</sup> week:****Lecture:** Patients and practitioners**13<sup>th</sup> week:****Lecture:** Main scopes of social policy in general and in Hungary I**14<sup>th</sup> week:****Lecture:** Main scopes of social policy in general and in Hungary II**15<sup>th</sup> week:****Lecture:** Repetition, discussion**Requirements**

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **GENERAL PRINCIPLES IN HEALTH CARE AND NURSING**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

**1<sup>st</sup> week:****Lecture:** System of definitions and philosophy of nursing; nursing theories; nursing models**2<sup>nd</sup> week:****Lecture:** Basic human needs; assessment of the basic human needs; data collection; patient observation**3<sup>rd</sup> week:****Lecture:** The planning of the nursing; the goals and the implementation of the nursing plan; nursing protocols and standards**4<sup>th</sup> week:****Lecture:** Rules of the nursing documentation; ethical and legal aspects of nursing**5<sup>th</sup> 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**6<sup>th</sup> week:****Lecture:** Defecation and micturition; hygienic needs; needs of communication and information**7<sup>th</sup> week:****Lecture:** Higher needs; needs of the safety; the unconscious patient; postoperative nursing tasks; aseptic and hygienic environment**8<sup>th</sup> week:****Lecture:** How to take care of a dying patient**9<sup>th</sup> week:****Practical:** Scene of the nursing; structure of a hospital unit; observation of the patient; measurement of vital parameters**10<sup>th</sup> 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

**11<sup>th</sup> week:**

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

**12<sup>th</sup> week:**

**Practical:** Tools for collecting urine and faeces; the planning and evaluation of the safety for patient

**13<sup>th</sup> 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, Faculty of Public Health

Subject: **BASICS OF INFORMATICS**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **10**

Practical: **50**

**1<sup>st</sup> 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.

**2<sup>nd</sup> 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.

**3<sup>rd</sup> 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.

**4<sup>th</sup> 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)****5<sup>th</sup> 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, multiplication, root, square. References: relative, absolute, mixed. Charts.

**6<sup>th</sup> week:**

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

**7<sup>th</sup> week:**

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

**8<sup>th</sup> week:**

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

**9<sup>th</sup> week:**

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

**10<sup>th</sup> week:**

**Practical:** (29-32) Functions: practices. Solving complicated problems.

**11<sup>th</sup> 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)****12<sup>th</sup> 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.

**13<sup>th</sup> 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.

**14<sup>th</sup> 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.

**15<sup>th</sup> 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 Emergency Medicine

Subject: **FIRST AID**

Year, Semester: 1<sup>st</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **12**

Practical: **18**

### 1<sup>st</sup> week:

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

### 2<sup>nd</sup> week:

**Lecture:** Unconsciousness; airway obstruction; airway opening maneuvers; Gábor maneuver

### 3<sup>rd</sup> week:

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

### 4<sup>th</sup> week:

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

### 5<sup>th</sup> week:

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

### 6<sup>th</sup> week:

**Practical:** Examination of breathing and circulation; the chest-thrust; airway opening maneuvers; the recovery position (Gábor maneuver)

### 7<sup>th</sup> week:

**Practical:** Practicing the chest compression  
Practicing the ventilation

### 8<sup>th</sup> week:

**Practical:** CPR training without equipment

### 9<sup>th</sup> week:

**Practical:** CPR training, two-rescuer method

### 10<sup>th</sup> week:

**Practical:** Practical examination

### 11<sup>th</sup> 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

### 12<sup>th</sup> week:

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

### 13<sup>th</sup> 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

### 14<sup>th</sup> week:

**Practical:** Practice  
**Self Control Test**

### 15<sup>th</sup> 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: 1<sup>st</sup> year/1<sup>st</sup> 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](mailto:nvkata@med.unideb.hu)

## Department of Anatomy, Histology and Embryology

Subject: **ANATOMY II**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **53**

Seminar: **15**

Practical: **7**

### 1<sup>st</sup> 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

### 2<sup>nd</sup> week:

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

### 3<sup>rd</sup> 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.

### 4<sup>th</sup> week:

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

### 5<sup>th</sup> 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.)**

### 6<sup>th</sup> 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.

### 7<sup>th</sup> 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

### 8<sup>th</sup> 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

**9<sup>th</sup> 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). )**

**10<sup>th</sup> 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

**11<sup>th</sup> 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

**12<sup>th</sup> 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

**13<sup>th</sup> 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

**14<sup>th</sup> 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

**15<sup>th</sup> week:**

**Self Control Test (Midterm oral exam of the neuroendocrine system and sensory organs. )**

### Requirements

*Prerequisite:* 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).

## CHAPTER 9

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, Faculty of Public Health

Subject: **COMMUNICATION SKILLS**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **10**

Practical: **20**

### **1<sup>st</sup> week:**

**Lecture:** Introduction to communication theory

**Practical:** Discussion of communication theory

### **2<sup>nd</sup> week:**

**Lecture:** Elements of communication;  
communicational channels

**Practical:** Elements of communication;  
communicational channels

### **3<sup>rd</sup> week:**

**Lecture:** Verbal communication

**Practical:** Verbal communication

### **4<sup>th</sup> week:**

**Lecture:** Non-verbal communication

**Seminar:** Non-verbal communication

**Practical:** Non-verbal communication

### **5<sup>th</sup> week:**

**Lecture:** Empathy and active listening

**Practical:** Empathy and active listening

### **6<sup>th</sup> week:**

**Lecture:** Different types of communication behavior  
(assertive, aggressive, passive)

**Practical:** Different types of communication behavior (assertive, aggressive, passive)

**7<sup>th</sup> week:**

**Lecture:** Communication and interpersonal awareness

**Practical:** Communication and interpersonal awareness

**8<sup>th</sup> week:**

**Lecture:** Communication with the elderly patients

**Practical:** Communication with the elderly patients

**9<sup>th</sup> week:**

**Lecture:** Communication with impaired persons I

**Practical:** Communication with impaired persons I

**10<sup>th</sup> week:**

**Lecture:** Communication with impaired persons II

**Practical:** Communication with impaired persons II

**11<sup>th</sup> week:**

**Lecture:** Communication with the 'difficult' patient

**Practical:** Film (part 1)

**12<sup>th</sup> week:**

**Lecture:** Communication with acute patients

**Practical:** Film (part 2)

**13<sup>th</sup> week:**

**Lecture:** Communication with children

**Practical:** Communication with different patients

**14<sup>th</sup> week:**

**Lecture:** Effective physiotherapist-patient communication

**Practical:** Presentations of the field practices

**15<sup>th</sup> 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 Biophysics and Cell Biology

Subject: **CELL BIOLOGY**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **30**

**1<sup>st</sup> week:**

**Lecture:** (1-2) Cell structure

**2<sup>nd</sup> week:**

**Lecture:** (3-4) Chemical Compounds of the Cell

**3<sup>rd</sup> week:**

**Lecture:** (5-6) Membranes, membrane transport

**4<sup>th</sup> week:**

**Lecture:** (7-8) Signal Transduction

**5<sup>th</sup> week:**

**Lecture:** (9-10) Vesicular Structures and Transport

**6<sup>th</sup> week:**

**Lecture:** Self control test 1

**Self Control Test (Topics in the lecture 1-10)**

**7<sup>th</sup> week:**

**Lecture:** (13-14) The Nucleus, DNA and Chromatin Structure

**8<sup>th</sup> week:**

**Lecture:** (15-16) Cytoskeleton, Motility

**9<sup>th</sup> week:**

**Lecture:** (17-18) Mitochondrion, Cell-Cell Contacts

**10<sup>th</sup> week:**

**Lecture:** (19-20) Ion Channels, Membrane Potential, Calcium homeostasis

**11<sup>th</sup> week:**

**Lecture:** (21-22) Cell Cycle, Meiosis, Mitosis

**12<sup>th</sup> week:**

**Lecture:** Self control test 2

**Self Control Test (Topics in the lecture 11-22)**

<p><b>13<sup>th</sup> week:</b>  <b>Lecture:</b> (25-26) Consultation</p> <p><b>14<sup>th</sup> week:</b>  <b>Lecture:</b> Pre-exam</p>	<p><b>Self Control Test (Pre-exam)</b></p> <p><b>15<sup>th</sup> week:</b>  <b>Lecture:</b> (29-30) Consultation</p>
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### 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 T is above 50%,  $D1=T+A$

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.

## Department of Foreign Languages

Subject: **HUNGARIAN LANGUAGE II**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **30**

**1<sup>st</sup> week:**

**Practical:** Repetition and revision of 1<sup>st</sup> semester topics

**2<sup>nd</sup> week:**

**Practical:** Mit kérsz? (What would you like? In a buffet)

**3<sup>rd</sup> week:**

**Practical:** Formal and informal style, Accusative suffixes

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

**Practical:** Tud, akar, szeret, szeretne (Can, want, like, would like)

**6<sup>th</sup> week:**

**Practical:** Word formation, infinitives

**7<sup>th</sup> week:**

**Practical:** Milyen idő van ma? (Weather)

**8<sup>th</sup> week:**

**Practical:** Revision. Mid-term test.

**9<sup>th</sup> week:**

**Practical:** Irregular verbs

**10<sup>th</sup> week:**

**Practical:** Postán, vasútállomáson (At the post office, train station)

**11<sup>th</sup> week:**

**Practical:** Mit eszünk ma este? (Food and cooking; negation)

**12<sup>th</sup> week:**

**Practical:** Tetszik a ruhád (Colors, possessive suffixes)

**13<sup>th</sup> week:**

**Practical:** Az emberi test. Milyen szeme van?

**14<sup>th</sup> week:**

**Practical:** Revision. End-term test.

**15<sup>th</sup> 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. The missed classes may only be made up in the same week. Maximally, two language classes may be made up with another group and students have to ask for written permission (via e-mail) 24 hours in advance from the teacher whose class they would like to attend for a makeup because of the limited seats available. 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

## CHAPTER 9

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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.

The minimum requirement for the mid-term and the end-term tests is 50 % each. If a student does not score this much he/she has to repeat the test. 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 Health Management and Quality Assurance, Faculty of Public Health

Subject: **ECONOMICS**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

### **1<sup>st</sup> week:**

**Lecture:** Subject, method and the short history of Economics

### **2<sup>nd</sup> week:**

**Lecture:** The concept of economic agents

### **3<sup>rd</sup> week:**

**Lecture:** National income

### **4<sup>th</sup> week:**

**Lecture:** The market mechanisms: the analysis of demand and supply

### **5<sup>th</sup> week:**

**Lecture:** Comparative static analysis

### **6<sup>th</sup> week:**

**Lecture:** The concept of the product-, money- and labour market

### **7<sup>th</sup> week:**

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

### **8<sup>th</sup> week:**

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

### **9<sup>th</sup> week:**

**Lecture:** The role of the Central Bank

### **10<sup>th</sup> week:**

**Lecture:** Development of banks and the financial system I

### **11<sup>th</sup> week:**

**Lecture:** Development of banks and the financial system II

### **12<sup>th</sup> week:**

**Lecture:** The functions of financial intermediary

<b>13<sup>th</sup> week:</b> <b>Lecture:</b> Current issues of the Hungarian economy I	<b>15<sup>th</sup> week:</b> <b>Lecture:</b> Consultation
<b>14<sup>th</sup> week:</b> <b>Lecture:</b> Current issues of the Hungarian economy II	

### Requirements

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

## Department of Health Management and Quality Assurance, Faculty of Public Health

Subject: **HEALTH CARE LAW**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **30**

<b>1<sup>st</sup> week:</b> <b>Lecture:</b> Systems of law, sources of law	<b>9<sup>th</sup> week:</b> <b>Lecture:</b> Physicians' rights and obligations
<b>2<sup>nd</sup> week:</b> <b>Lecture:</b> The legal system, environment	<b>10<sup>th</sup> week:</b> <b>Lecture:</b> Professional liability and malpractice
<b>3<sup>rd</sup> week:</b> <b>Lecture:</b> Human rights, the right to health	<b>11<sup>th</sup> week:</b> <b>Lecture:</b> Medical liability
<b>4<sup>th</sup> week:</b> <b>Lecture:</b> Law and courts	<b>12<sup>th</sup> week:</b> <b>Lecture:</b> Ethic in the health care workplace
<b>5<sup>th</sup> week:</b> <b>Lecture:</b> Law in the medical workplace	<b>13<sup>th</sup> week:</b> <b>Lecture:</b> Bioethics
<b>6<sup>th</sup> week:</b> <b>Lecture:</b> Management of medical information	<b>14<sup>th</sup> week:</b> <b>Lecture:</b> EU health strategies
<b>7<sup>th</sup> week:</b> <b>Lecture:</b> The medical record, informed consent	<b>15<sup>th</sup> week:</b> <b>Lecture:</b> Summary, consultation
<b>8<sup>th</sup> week:</b> <b>Lecture:</b> Physician-patient relationship, patients' rights	

### 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.

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## Department of Health Management and Quality Assurance, Faculty of Public Health

Subject: **INTRODUCTION TO MANAGEMENT**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

**1<sup>st</sup> week:**

**Lecture:** Introduction to management

**2<sup>nd</sup> week:**

**Lecture:** Strategic management

**3<sup>rd</sup> week:**

**Lecture:** Identifying values, setting and attaining goals

**4<sup>th</sup> week:**

**Lecture:** Time management issues

**5<sup>th</sup> week:**

**Lecture:** How to delegate

**6<sup>th</sup> week:**

**Lecture:** How to deal with conflict - conflict management issues

**7<sup>th</sup> week:**

**Lecture:** Basics of quality management

**8<sup>th</sup> week:**

**Lecture:** How to get your point across - the art of presentation

**9<sup>th</sup> week:**

**Lecture:** Management, leadership, and employee empowerment

**10<sup>th</sup> week:**

**Lecture:** Performance assessment

**11<sup>th</sup> week:**

**Lecture:** Motivating employees and building teams

**12<sup>th</sup> week:**

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

**13<sup>th</sup> week:**

**Lecture:** Labour law from the perspectives of management

**14<sup>th</sup> week:**

**Lecture:** Entrepreneurship and starting a small business

**15<sup>th</sup> 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: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **20**

Seminar: **10**

**1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

**Lecture:** Fracture and healing of bones. The

biomechanics of fracture healing. The function and morphology of skeletal muscle

**3<sup>rd</sup> week:**

**Lecture:** The definition and history of biomechanics

<p><b>4<sup>th</sup> week:</b> <b>Lecture:</b> Tissue mechanics. Static examination of bones</p> <p><b>5<sup>th</sup> week:</b> <b>Lecture:</b> The skeleton as a system of organs. Bone and aging</p> <p><b>6<sup>th</sup> week:</b> <b>Lecture:</b> Bone formation, bone development. The modeling and remodeling of bones. Laws of biomechanics</p> <p><b>7<sup>th</sup> week:</b> <b>Lecture:</b> Introduction to research projects based on biomechanical examination</p> <p><b>8<sup>th</sup> week:</b> <b>Lecture:</b> Introduction to research projects based on biomechanical measurement</p> <p><b>9<sup>th</sup> week:</b> <b>Lecture:</b> Practical demonstration in the biomechanical laboratory</p>	<p><b>10<sup>th</sup> week:</b> <b>Lecture:</b> Consultation</p> <p><b>11<sup>th</sup> week:</b> <b>Seminar:</b> Introduction to Moodle course.</p> <p><b>12<sup>th</sup> week:</b> <b>Seminar:</b> Medical application of metal foams. Searching the literature and description of products.</p> <p><b>13<sup>th</sup> week:</b> <b>Seminar:</b> The effect of spinal rod loosening. Searching the literature and description of products.</p> <p><b>14<sup>th</sup> week:</b> <b>Seminar:</b> Discussion of results in the searching the literature and products. Presentation of findings.</p> <p><b>15<sup>th</sup> week:</b> <b>Seminar:</b> Discussion of results in the searching the literature and products. Presentation of findings.</p>
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### Requirements

The prerequisite of subject is Biophysics.

The attendance of lectures is strongly suggested, the attendance of seminars is compulsory. If you have more than 4-hour absence at seminars, the signature will be refused.

#### *E-learning program:*

It is possible to join the e-learning program during this semester. This program provides an opportunity for students to deepen their understanding of Biomechanics. Depending on your performance on the e-learning program you may earn maximum 25% bonus points which will be added to the scores of the end-semester test. The bonus points are granted if the score of the end-semester test reaches or higher than the passing limit (50%). Further information about the e-learning program will be announced during the semester.

## Department of Physiotherapy, Faculty of Public Health

Subject: **KINESIOLOGY I**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **30**

Seminar: **30**

Practical: **60**

#### **1<sup>st</sup> 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

**2<sup>nd</sup> 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)

**3<sup>rd</sup> 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

**4<sup>th</sup> 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

**5<sup>th</sup> 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

**6<sup>th</sup> 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

**7<sup>th</sup> 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

**8<sup>th</sup> 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

**9<sup>th</sup> 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

**10<sup>th</sup> 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

**11<sup>th</sup> 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

**12<sup>th</sup> 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

**13<sup>th</sup> week:**

**Lecture:** Components of the shoulder complex: sterno-clavicular, acromio-clavicular, scapulo-thoracic and gleno-humeral joints

**Seminar:** Repetition

**Practical:** Examination: Repetition; Analysis: Repetition

**14<sup>th</sup> week:**

**Lecture:** Structure and function of the gleno-humeral joints. Static and dynamic stabilization

**Seminar:** Practice exam

**Practical:** Examination: Practice exam; Analysis: Practice exam

**15<sup>th</sup> 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 missed 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, Faculty of Public Health

Subject: **GENETICS AND MOLECULAR BIOLOGY**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **30**

**1<sup>st</sup> week:**

**Lecture:** Introduction to molecular genetics; structure of the DNA molecule; the genetic code

**2<sup>nd</sup> week:**

**Lecture:** DNA replication and recombination

## CHAPTER 9

### **3<sup>rd</sup> week:**

**Lecture:** Genes and alleles; Mendel's laws; genotype and phenotype

### **4<sup>th</sup> week:**

**Lecture:** the chromosomal basis of heredity. Human cytogenetics; chromosomes; chromosome alterations

### **5<sup>th</sup> week:**

**Lecture:** Transformation and transduction; molecular mechanisms of crossing over  
Summary lectures, consultation

### **Self Control Test**

### **6<sup>th</sup> week:**

**Lecture:** Molecular genetics of gene expression; molecular mechanism of gene regulation

### **7<sup>th</sup> week:**

**Lecture:** Mutations and DNA repair; the role of mutations in the development and progression of diseases

### **8<sup>th</sup> week:**

**Lecture:** Genetic polymorphisms; the role of genetic polymorphisms in the predisposition of different diseases

### **9<sup>th</sup> week:**

**Lecture:** Molecular evolution and population

genetics; the genetic basis of complex inheritance

### **Self Control Test**

### **10<sup>th</sup> week:**

**Lecture:** The genetic origin of cancer

### **Self Control Test**

### **11<sup>th</sup> week:**

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

### **12<sup>th</sup> week:**

**Lecture:** Nucleic acid manipulations I. Polymerase chain reaction

### **13<sup>th</sup> week:**

**Lecture:** New molecular biological techniques in the diagnosis of diseases; molecular targeted therapies

### **14<sup>th</sup> week:**

**Lecture:** The Human Genome Programme (overview, advantages and results)

### **Self Control Test**

### **15<sup>th</sup> 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.

## Sport Center of University Debrecen

Subject: **PHYSICAL EDUCATION II**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> 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](mailto:nvkata@med.unideb.hu)

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## CHAPTER 10

### ACADEMIC PROGRAM FOR THE 2ND YEAR

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#### Department of Biochemistry and Molecular Biology

Subject: **BASIC BIOCHEMISTRY**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

Seminar: **15**

**1<sup>st</sup> week:**

**Lecture:** Energy in biology. Oxidative phosphorylation. PDH complex. The citric acid cycle and its regulation. The mitochondrial genome.

**2<sup>nd</sup> week:**

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

**3<sup>rd</sup> week:**

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

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

**Lecture:** Lipid metabolism I. Introduction. Lipid metabolism during well feed stage. Synthesis of fatty acids. Synthesis of triacyl-glycerols and its regulation.

**6<sup>th</sup> 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.

**7<sup>th</sup> week:**

**Lecture:** Lipid metabolism III. Synthesis of sphingolipids and phospholipids. The mevalonate metabolic pathway. Synthesis of cholesterol. Excretion of cholesterol. Steroid hormones. Bile acids. Vitamin D.

**8<sup>th</sup> week:**

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

**9<sup>th</sup> week:**

**Lecture:** Lipid metabolism IV. Organization of lipid structures. Mixed micelles in the digestive tract. Lipoproteins in blood plasma. Cholesterol transport in the body. The LDL receptor and its gene. Biochemical explanation of elevated blood cholesterol level. Eicozanoids. Obesity.

**10<sup>th</sup> week:**

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

**11<sup>th</sup> week:**

**Lecture:** Amino acid metabolism II. The urea cycle and its regulation. Decarboxylation and carboxylation reactions in the amino acid metabolism. C1 transfer and transmethylation, related enzyme and vitamin deficiencies. Monooxygenation and dioxygenation

reactions. Fate of the carbon skeleton of amino acids: glucogenic and ketogenic amino acids. Examples: degradation of isoleucine and valine, phenylalanine and related enzyme deficiencies (PKU). Precursor functions: NO, creatine, polyamines, PAPS, carnitine, catecholamines. Synthesis.

**12<sup>th</sup> 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.

**13<sup>th</sup> week:**

**Lecture:** Nucleotides metabolism II. De novo synthesis of pyrimidine nucleotides. Regulation of pyrimidine nucleotide synthesis. Salvage pathways for the pyrimidines. Degradation of pyrimidine nucleotides. Nucleoside and nucleotide kinases. Synthesis of deoxythymidilate. Nucleotide coenzyme

synthesis (NAD, FAD, CoA). Anti tumour and anti viral action of base and nucleoside analogues.

**14<sup>th</sup> week:**

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

**15<sup>th</sup> week:**

**Lecture:** self-control test Week 9-14.

**Self Control Test (topics of 7-14th weeks)**

### Requirements

Prerequisite: Cell biology

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

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

## Department of Biochemistry and Molecular Biology

Subject: **BIOCHEMISTRY**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **10**

Seminar: **5**

**1<sup>st</sup> week:**

**Lecture:** Biochemistry of the liver. Biotransformation. Ethanol metabolism, biochemical consequences of ethanol consumption.

**Seminar:** Introduction, requirements, topics

**2<sup>nd</sup> 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

## CHAPTER 10

receptor and ferritin mRNA, IRE binding protein.

**Seminar:** Biochemistry of cell proliferation

### 3<sup>rd</sup> 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

### 4<sup>th</sup> 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

### 5<sup>th</sup> 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: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **30**

### 1<sup>st</sup> week:

**Lecture:** Introduction. Revision

**Practical:** Repetition. Pretest.

### 2<sup>nd</sup> week:

**Practical:** Bemutakozás (létige ismétlése)

### 3<sup>rd</sup> week:

**Practical:** Foglalkozások (igék, helyragok ismétlése)

### 4<sup>th</sup> week:

**Practical:** A családom (birtokos személyragok ismétlése)

### 5<sup>th</sup> week:

**Practical:** Emberek leírása (test, melléknevek)

### 6<sup>th</sup> week:

**Practical:** Emberek leírása (test, birtoklás ismétlése)

### 7<sup>th</sup> week:

**Practical:** Összehasonlítás

### 8<sup>th</sup> week:

**Practical:** Revision. Mid-term test

### 9<sup>th</sup> week:

**Practical:** Napirend

### 10<sup>th</sup> week:

**Practical:** Szabadidő, időjárás

### 11<sup>th</sup> week:

**Practical:** Hobbi, sport (gyakorítás)

**12<sup>th</sup> week:****Practical:** Mit csináltál tegnap?**13<sup>th</sup> week:****Practical:** Milyen volt a hétvégéd?**14<sup>th</sup> week:****Practical:** Revision. End-term test.**15<sup>th</sup> 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. The missed classes may only be made up in the same week. Maximally, two language classes may be made up with another group and students have to ask for written permission (via e-mail) 24 hours in advance from the teacher whose class they would like to attend for a makeup because of the limited seats available. 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.

The minimum requirement for the mid-term and the end-term tests is 50 % each. If a student does not score this much he/she has to repeat the test. 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 Internal Medicine

Subject: **INTRODUCTION TO CLINICAL MEDICINE**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

Practical: **15**

**1<sup>st</sup> week:**

**Lecture:** The history of nursing and medicine

**2<sup>nd</sup> week:**

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

**3<sup>rd</sup> week:**

**Lecture:** Symptoms of diseases. History taking: family history, previous diseases, present complaints

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

**Lecture:** Clinical laboratory: pathology, clinical microbiology, clinical bio-chemistry, haematology

**6<sup>th</sup> week:**

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

**7<sup>th</sup> week:**

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

**8<sup>th</sup> week:**

**Lecture:** Physical examination of the respiratory and cardiovascular system

**Practical:** History taking, case record; calculation of BMI

**9<sup>th</sup> 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

**10<sup>th</sup> week:**

**Lecture:** Physical examination of the locomotors system

**Practical:** Physical examination of the abdomen (gastro-intestinal system, liver and spleen) and the urogenital system

**11<sup>th</sup> week:**

**Lecture:** Physical examination of the nervous system

**Practical:** Physical examination of the locomotor system

**12<sup>th</sup> week:**

**Lecture:** Importance of medical consultation

**Practical:** Physical examination of the nervous system

**13<sup>th</sup> 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

**14<sup>th</sup> week:**

**Lecture:** Medical treatment and patients care, follow-up

**Practical:** Physical examination of the head, the neck, and the thyroid gland

**15<sup>th</sup> 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.

## Department of Physiology

Subject: **NEUROPHYSIOLOGY**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

Seminar: **10**

Practical: **3**

### 1<sup>st</sup> 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)

### 2<sup>nd</sup> week:

**Lecture:** Somatosensory function of CNS: psychological and psychophysical basic definitions; deep sensation; proprioception

**Seminar:** Function of the sensory cortex; disorders of sensory function

### 3<sup>rd</sup> 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

### 4<sup>th</sup> 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)

### 5<sup>th</sup> 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

### 6<sup>th</sup> 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

### 7<sup>th</sup> 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

### 8<sup>th</sup> 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 and practical hours. The signature of the Lecture Book may be refused for the semester if one has more than two absences from the seminars and practical hours.

The knowledge of the students will be tested 2 times during the semester using a written tests. The participation is compulsory. At the end of the semester, students take a written end-semester exam (ESE). However, if one's average score of the two mid-semester tests is above 55%, it is not compulsory to take the ESE, and a mark based on the average score will be offered.

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

If one is not satisfied with this result, (s)he may participate in ESE during the examination period.

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

*E-learning program:* It is possible to join the e-learning program during this semester. This program provides opportunity for students to deepen their understanding of Neurophysiology. Depending on your performance on the e-learning program you may earn maximum 10% bonus points which will be added to the average of midsemester tests. The bonus points are granted if the average of midsemesters test reaches or higher than the passing limit (55%) and none of the individual tests' results are less than 40%. Further information about the e-learning program will be announced during the first lecture.

## Department of Physiology

Subject: **PHYSIOLOGY**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

Seminar: **15**

### 1<sup>st</sup> 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

### 2<sup>nd</sup> 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

### 3<sup>rd</sup> 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

### 4<sup>th</sup> 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

### 5<sup>th</sup> 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

### 6<sup>th</sup> 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

### 7<sup>th</sup> 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

### 8<sup>th</sup> 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

**9<sup>th</sup> 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 and humoral regulation

**10<sup>th</sup> 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

**11<sup>th</sup> 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

**12<sup>th</sup> 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

**13<sup>th</sup> 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

**14<sup>th</sup> 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

**15<sup>th</sup> week:**

**Lecture:** Summary, consultation

**Seminar:** Consultation

### Requirements

Prerequisite: Anatomy II

*Signature of Lecture Book:* Attendance at lectures and seminars is compulsory. The signature of the Lecture Book may be refused for the semester in the cases of absences from more than two seminars. For continuous updates on all education-related matters, 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-semester tests reaches or higher than the passing limit (55%) and none of the individual tests' results are less than 40%. The mark based on the average score of mid-semester tests is calculated according to the following table: 0 – 54 % fail (1) 55 – 64 % pass (2) 65 – 74 % satisfactory (3) 75 – 84 % good (4) 85 – 100 % excellent (5) If one is not satisfied with this result, (s)he may participate in ESE during the examination period. A and B chances are written tests, C chance is oral presentation.

*E-learning program:* It is possible to join the e-learning program during this semester. This program provides opportunity for students to deepen their understanding of Physiology. Depending on your performance on the e-learning program you may earn maximum 10% bonus points which will be added to the average of mid-semester tests. The bonus points are granted if the average of mid-semester tests reaches or higher than the passing limit (55%) and none of the individual tests' results are less than 40%. Further information about the e-learning program will be announced during the first lecture.

## Department of Physiotherapy, Faculty of Public Health

Subject: **BASICS OF HEALTH SCIENCES**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

### Topics:

Morphological and functional characterisation of the cells, types of tissues  
1. Definition of the cell, the tissue, the organ and the system of organs; the cell as a morphological and functional unit; structure of the cell membrane, characterisation of the transport processes

2. Epithelial tissue: morphological and functional characterisation

3. Connective tissue: fibers, matrix, cells; types of connective tissues; morphological and functional characterisation of muscle tissues  
Body fluid compartments, 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 the red blood cells, structure of haemoglobin, mechanism of the oxygen and carbon dioxide 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. ABO 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 fibrous 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 functional aspects), changes in aging; resistance and capacity vessels; development and characteristics of the pulse waves

20. Changes in the arterial blood pressure parallel to the cardiac cycle; pulse pressure, mean arterial pressure – definitions and significance; factors determining the mean arterial pressure; blood pressure measurement

21. Neural and humoral regulation of the arterial blood pressure; innervation of vessels; cerebral regions involved in the regulation of blood pressure and distribution; morphological basis of the reflex regulation

22. Hypertension, hypotonia, arteriosclerosis and its risk factors

23. Morphological characteristics of the veins; structure of the lymphatic system; characteristics of the venous and lymphatic circulation, abnormalities  
24. Cerebral circulation; production and circulation of the cerebrospinal fluid; blood-liquor and blood-brain barriers; regulation of cerebral circulation; disturbances  
Structure and function of the respiratory system

25. Structure of the respiratory system; mechanics of breathing (respiratory muscles, innervation, changes in the intrapulmonary and intrapleural pressures); lung volumes (tidal volume, vital capacity, residual volume); anatomical and functional dead spaces

26. Alveolar gas exchange (morphological background and mechanism); relationship of pulmonary circulation and breathing

27. Transport of respiratory gases; mechanism of the gas transport between the blood and the tissues (internal breathing)

28. Dynamic respiratory parameters; pathologic changes in the restrictive and the obstructive

<p>pulmonary diseases; determining factors of the airway resistance, abnormalities</p> <p>29. Cerebral regions taking part in the regulation of respiration, automatic and voluntary regulation of the respiration; pneumothorax, artificial respiration Structure and function of the gastrointestinal tract</p> <p>30. Morphological characterisation; blood supply, especially the portal circulation, enteric nervous system and gastrointestinal hormones</p> <p>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</p> <p>32. Morphological characterisation of the rectum; sphincters, innervation; haemorrhoidal veins, their functional significance; mechanism of defecation, active and passive incontinence</p> <p>33. Anatomy of the stomach, the pancreas and the small intestines; secretory function of the GI, regulation of the juice production</p> <p>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 cirrhosis, hepatic insufficiency</p> <p>35. Structure of the intestinal wall, circulation and absorption; obstipation and diarrhoea Structure and function of the excretory system, role of the kidney in the homeostasis</p> <p>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</p> <p>37. Renal Plasma Flow (RPF), Glomerular Filtration Rate (GFR), Filtration Fraction (FF) and Extraction Coefficient (E); the clearance principle</p> <p>38. Structure of the Malpighian corpuscle; mechanism of the glomerular ultrafiltration; composition of the ultrafiltrate; regulation of GFR</p> <p>39. Morphological characteristics of the renal tubules; characterisation of tubular transport processes (glucose transport, PAH transport), Na<sup>+</sup> and water reabsorption</p> <p>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</p> <p>41. Mechanism of the micturition; vegetative reflex arch and voluntary control; active and passive incontinence; renal insufficiency, azotaemia and uraemia Hormonal regulation</p>	<p>42. System of the endocrine glands; hypothalamo-hypophyseal system; definition of hormones, general characterisation of the hormonal effects at cellular level</p> <p>43. Structure and function of the thyroid gland; effects of thyroid hormones; hypo- and hyperfunction; hormonal regulation of growth (effects of the GH, thyroid hormones and sexual steroids); gigantism and nanism</p> <p>44. Endocrine pancreas; adrenal cortex and medulla; hormonal regulation of the blood glucose concentration; diabetes mellitus</p> <p>45. Hormone-producing cells in the ovary and testis; spermiogenesis, oogenesis; hormonal regulation of the sexual functions</p> <p>46. Relationships of the nervous system and the hormonal regulation; stress reactions and adaptation Structure and function of the movement system, neural control of the skeletal muscle function</p> <p>47. Bones: structure, types, accessory elements; connections of the bones; structure, types and movements of the joints</p> <p>48. Types of the cartilage; structure and function</p> <p>49. Bone tissue, ossification, growth, remodelling</p> <p>50. Bone as calcium store; hormonal regulation of the calcium balance; hormonal control of the growth in length (GH, thyroid hormones, sexual steroids)</p> <p>51. Structure and function of the skeletal muscles; neuromuscular junction; motor unit</p> <p>52. Types and connections of the vertebrae; curvatures and movements of the spinal column</p> <p>53. Bones, joints, muscles, vessels and nerves of the shoulder girdle</p> <p>54. Structure of the pelvis; structure and movements of the hip joint, hip muscles</p> <p>55. Bones, joints, muscles, blood supply and innervation of the lower extremities</p> <p>56. Bones and joints of the chest; respiratory muscles, respiratory movements</p> <p>57. Bones, joints and muscles of the trunk; mimic and masticatory muscles, their innervation</p> <p>58. Main parts of the nervous system; spinal cord and brain nerves</p> <p>59. Histology of the nervous system; degeneration and regeneration in the nervous system; chemical synapse</p> <p>60. Sensory function of the CNS; somato-visceral sensory system</p> <p>61. Hierarchy of the motor system; motor tracts, centres; pyramidal and extrapyramidal tracts – morphology and function</p> <p>62. Reflex and voluntary control of the movements; paralysis; extrapyramidal disorders</p> <p>63. Gross anatomy and fine structure of the cerebellum; role of the cerebellum in the regulation</p>
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of movements

64. Vestibular apparatus, role in the regulation of posture

65. Spinal cord reflexes (somatic and vegetative),

definition and regulation of the muscle tone

66. Structure and the function of the autonomic nervous system

### Requirements

Pre-requisite for taking comprehensive exam is to absolve the Physiology, Cardiorespiratory and Exercise Physiology and Neurophysiology subjects. It is recommended to take the examination at the end of the 3rd semester, but the date should not be later than the end of the 6th semester. The components of the comprehensive exam are the written and oral examinations. The written examination covers a complex assessment containing short essays, multiple choice questions and identification of charts. If the score is higher than 50%, the student will be exempted from the oral part of the examination, but there is a possibility to take it. The offered mark will be constructed as follows: < 50 % fail (1), 50 – 62% pass (2), 63 – 74% satisfactory (3), 75 – 87% good (4), 88 – 100% excellent (5).

## Department of Physiotherapy, Faculty of Public Health

Subject: **CARDIORESPIRATORY AND EXERCISE PHYSIOLOGY**Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**Seminar: **5**Practical: **12**

### 8<sup>th</sup> 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

### 9<sup>th</sup> 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

### 10<sup>th</sup> 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

### 11<sup>th</sup> 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

**Self Control Test (Heart, peripheral circulation )**

### 12<sup>th</sup> 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

### 13<sup>th</sup> 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

### 14<sup>th</sup> 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

**15<sup>th</sup> week:**

**Lecture:** Consultation

**Seminar:** Evaluation of the e-learning activity.

**Self Control Test (Respiration and Exercise Physiology)**

### Requirements

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

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

The knowledge of the students will be tested 2 times during the semester using a written tests. The participation is compulsory. At the end of the semester, students take a written end-semester exam (ESE).

However, if one's average score of the two mid-semester tests is above 55%, it is not compulsory to take the ESE, and a mark based on the average score will be offered.

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

If one is not satisfied with this result, (s)he may participate in ESE during the examination period.

The selected topics in Cardiorespiratory and Exercise Physiology are constitutive part of the final examination "Basic health care issues".

*E-learning program:* It is possible to join the e-learning program during this semester. This program provides opportunity for students to deepen their understanding of Cardiorespiratory and Exercise Physiology. Depending on your performance on the e-learning program you may earn maximum 10% bonus points which will be added to the average of midsemester tests. The bonus points are granted if the average of midsemesters test reaches or higher than the passing limit (55%) and none of the individual tests' results are less than 40%. Further information about the e-learning program will be announced during the first lecture.

## Department of Physiotherapy, Faculty of Public Health

Subject: **GERONTOLOGY**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

**1<sup>st</sup> week:**

**Lecture:** Basic terms of gerontology

**2<sup>nd</sup> week:**

**Lecture:** Gerontology in mirror of statistics I:  
Process of aging of individuals

**3<sup>rd</sup> week:**

**Lecture:** Gerontology in mirror of statistics II:  
Tendencies of mortality

**4<sup>th</sup> week:**

**Lecture:** Systemic approach of gerontology

**5<sup>th</sup> week:**

**Lecture:** Biogerontology: the basics

**6<sup>th</sup> week:**

**Lecture:** Biogerontology: aging theories

**7<sup>th</sup> week:**

**Lecture:** Biogerontology: experimental gerontology

**8<sup>th</sup> week:**

**Lecture:** Biogerontology: aging and diseases

**9<sup>th</sup> week:**

**Lecture:** Geriatrics: Physiological as well as pathological alterations due to aging I

**10<sup>th</sup> week:**

**Lecture:** Geriatrics: Physiological as well as pathological alterations due to aging II

**11<sup>th</sup> week:**

**Lecture:** Social gerontology: Gerontopsychology

**12<sup>th</sup> week:**

**Lecture:** Social gerontology: Aspects of the society regarding aging

**13<sup>th</sup> week:**

**Lecture:** Prevention and aging

**14<sup>th</sup> week:**

**Lecture:** Possibilities for the slowing down of the aging process

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **KINESIOLOGY II**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

Seminar: **15**

Practical: **120**

**1<sup>st</sup> 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

**2<sup>nd</sup> 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

**3<sup>rd</sup> 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

**4<sup>th</sup> 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

**5<sup>th</sup> week:**

**Lecture:** Structure of the thumb

**Practical:** Examination: Physiological and pathological examination of the wrist and

hand; Analysis: Repetition

**6<sup>th</sup> 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

**7<sup>th</sup> 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

**8<sup>th</sup> 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

**9<sup>th</sup> 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

**10<sup>th</sup> 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

**11<sup>th</sup> 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

**12<sup>th</sup> 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

**13<sup>th</sup> 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

**14<sup>th</sup> week:**

**Lecture:** Locomotion: kinematics, kinetics

**Practical:** Examination: Practical exam; Analysis: Practical exam

**15<sup>th</sup> 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, Faculty of Public Health

Subject: **BASICS OF RESEARCH METHODOLOGY**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

**1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

**Lecture:** Ethics of science

**3<sup>rd</sup> week:**

**Lecture:** Types of scientific research

**4<sup>th</sup> week:**

**Lecture:** Methods of quantitative research I

**5<sup>th</sup> week:**

**Lecture:** Methods of quantitative research II

**6<sup>th</sup> week:**

**Lecture:** Methods of qualitative research

**7<sup>th</sup> week:**

**Lecture:** Orientation in the scientific literature I

**8<sup>th</sup> week:**

**Lecture:** Orientation in the scientific literature II

**9<sup>th</sup> week:**

**Lecture:** Data sources

**10<sup>th</sup> week:**

**Lecture:** Measures of occurrence and association

**11<sup>th</sup> week:**

**Lecture:** Designing a scientific inquiry (study design)

**12<sup>th</sup> week:**

**Lecture:** Interpreting and publishing results

**13<sup>th</sup> week:**

**Lecture:** Rules of scientific publication

**14<sup>th</sup> week:**

**Lecture:** Presenting results

**15<sup>th</sup> 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.

Examination: written

## Department of Foreign Languages

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE I**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **45**

**1<sup>st</sup> week:**

**Practical:** Revision

**2<sup>nd</sup> week:**

**Practical:** Pretest

**3<sup>rd</sup> week:**

**Practical:** 6. lecke Melyik a jobb?

**4<sup>th</sup> week:**

**Practical:** 6. lecke Melyik a jobb?

**5<sup>th</sup> week:**

**Practical:** 7. lecke Napirend

**6<sup>th</sup> week:**

**Practical:** 7. lecke Napirend

**7<sup>th</sup> week:****Practical:** Revision. Mid-term test**8<sup>th</sup> week:****Practical:** 8. lecke Szabadidő**Self Control Test****9<sup>th</sup> week:****Practical:** 8. lecke Szabadidő**10<sup>th</sup> week:****Practical:** 9. lecke Hol voltál tegnap?**11<sup>th</sup> week:****Practical:** 9. lecke Hol voltál tegnap?**12<sup>th</sup> week:****Practical:** 10. lecke Mit csináltál tegnap?**13<sup>th</sup> week:****Practical:** 10. lecke Mit csináltál tegnap?**14<sup>th</sup> week:****Practical:** Revision. Endterm test**Self Control Test****15<sup>th</sup> 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. The missed classes may only be made up in the same week. Maximally, two language classes may be made up with another group and students have to ask for written permission (via e-mail) 24 hours in advance from the teacher whose class they would like to attend for a makeup because of the limited seats available. 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.

The minimum requirement for the mid-term and the end-term tests is 50 % each. If a student does not score this much he/she has to repeat the test. 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.

## CHAPTER 10

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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: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **30**

### 1<sup>st</sup> week:

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

### 2<sup>nd</sup> week:

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

### 3<sup>rd</sup> week:

**Lecture:** Inflammation: general properties of inflammatory reactions

### 4<sup>th</sup> week:

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

### 5<sup>th</sup> week:

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

### 6<sup>th</sup> week:

**Lecture:** Fluid and haemodynamic disorders. Haemorrhage, thrombosis

### 7<sup>th</sup> week:

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

### 8<sup>th</sup> week:

**Lecture:** Immune pathology I

### 9<sup>th</sup> week:

**Lecture:** Immune pathology II

### 10<sup>th</sup> week:

**Lecture:** Pathology of neoplasia; molecular oncology

### 11<sup>th</sup> week:

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

### 12<sup>th</sup> week:

**Lecture:** Genetic and environmental aspects of disease processes

### 13<sup>th</sup> week:

**Lecture:** Pathology of infectious diseases

### 14<sup>th</sup> week:

**Lecture:** Diseases of bones and joints

### 15<sup>th</sup> 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, Faculty of Public Health

Subject: **APPLIED TRAINING METHODS**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

### 1<sup>st</sup> 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

### 2<sup>nd</sup> week:

**Lecture:** Basics of exercise physiology (repetition)

**Practical:** Types of training, planning of training programme

### 3<sup>rd</sup> week:

**Lecture:** Age-dependent characteristics of the endurance

**Practical:** Physical abilities; possibilities for improvement

### 4<sup>th</sup> week:

**Lecture:** Effect of physical load on circulation

**Practical:** Endurance training, methods and criteria of strength endurance

### 5<sup>th</sup> week:

**Lecture:** Effect of physical load on respiration

**Practical:** Static and dynamic strength endurance

### 6<sup>th</sup> week:

**Lecture:** Energetic aspects of the muscle function

**Practical:** Speed endurance training, basic definitions and methods

### 7<sup>th</sup> week:

**Lecture:** Characteristics of the muscle function

**Practical:** Rules and methods for the improvement of flexibility

### 8<sup>th</sup> week:

**Lecture:** Types of the muscle contraction

**Practical:** Improvement of the skills and

coordination

### 9<sup>th</sup> week:

**Lecture:** Effect of physical load on the movement system

**Practical:** Types and characteristics of the endurance training

### 10<sup>th</sup> week:

**Lecture:** Muscle fatigue

**Practical:** Endurance improving methods

### 11<sup>th</sup> week:

**Lecture:** Methods for improvement of strength and endurance

**Practical:** Training theories and their adaptation to rehabilitation

### 12<sup>th</sup> week:

**Lecture:** Features of the endurance training programmes

**Practical:** Repetition, practice

### 13<sup>th</sup> week:

**Lecture:** Planning criteria of trainings

**Practical:** Repetition, practice

### 14<sup>th</sup> week:

**Lecture:** Changes in physiological parameters on the effect of physical exercise in the trained and untrained persons

**Practical:** Practical examination

### 15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **DIETETICS**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

### 1<sup>st</sup> 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)

### 2<sup>nd</sup> week:

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

### 3<sup>rd</sup> week:

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

### 4<sup>th</sup> week:

**Lecture:** Diet in pregnancy and lactation (3 hours)

### 5<sup>th</sup> week:

**Lecture:** Consultation (2 hours)

**Self Control Test**

### 6<sup>th</sup> week:

**Practical:** Calculation of the energy and nutrient

content of foods (2 hours)

### 7<sup>th</sup> week:

**Practical:** Kitchen technologies for health prevention (2 hours)

### 8<sup>th</sup> week:

**Practical:** Construction and evaluation of a health protective diet (2 hours)

### 9<sup>th</sup> week:

**Practical:** Possibilities of roboration, practical application (2 hours)

### 10<sup>th</sup> week:

**Practical:** Diet in obesity and diabetes mellitus (2 hours)

### 11<sup>th</sup> week:

**Practical:** Dietetic treatment of osteoporosis (2 hours)

### 12<sup>th</sup> week:

**Practical:** Patient health education (2 hours)

### 13<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

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

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

### 1<sup>st</sup> week:

**Lecture:** Definition, classification and history of physiotherapy. Physical and biological bases of electrotherapy

**Practical:** Technical conditions of physical therapy; security considerations

### 2<sup>nd</sup> 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 physiotherapeutic interventions; low frequency devices

### 3<sup>rd</sup> 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

### 4<sup>th</sup> week:

**Lecture:** Special Galvan treatments (Kowarschik, Bourgnon, Bergonier, Riesz methods)

**Practical:** Special Galvan treatments

### 5<sup>th</sup> week:

**Lecture:** Iontophoresis, mode of action, types and dosage of the iontophoresis, indications and contra-indications, Riesz methods

**Practical:** Iontophoretic treatments

**Self Control Test**

### 6<sup>th</sup> week:

**Lecture:** Lidocain iontophoresis, indications and contraindications; malpractice and side effects. Transcutaneous Electrical Nerve Stimulation (TENS)

**Practical:** Lidocain iontophoresis, indications and contraindications, TENS treatments

### 7<sup>th</sup> 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

### 8<sup>th</sup> 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

### 9<sup>th</sup> 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

### 10<sup>th</sup> week:

**Lecture:** Hydro-, and thermotherapy

**Practical:** Visit in the hydrotherapy unit of the SPA  
**Self Control Test**

### 11<sup>th</sup> week:

**Lecture:** Balneotherapy, mudpacks, effects of medicinal waters

**Practical:** Visit in Spa

### 12<sup>th</sup> week:

**Lecture:** Weight bathing; carbondioxide bath therapy, hydro-massage

**Practical:** Visit in the hydrotherapy unit of the Spa

### 13<sup>th</sup> week:

**Lecture:** Selective stimulus current treatment

**Practical:** Selective stimulus current treatment: demonstration and practice

### 14<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS I**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **30**

Seminar: **15**

### 1<sup>st</sup> week:

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

### 2<sup>nd</sup> 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

### 3<sup>rd</sup> 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

### 4<sup>th</sup> 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

### 5<sup>th</sup> week:

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

### 6<sup>th</sup> week:

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

### 7<sup>th</sup> week:

**Lecture:** Physical and laboratory examinations in the infectious diseases; viral and bacterial infections. Physical and instrumental examinations in the respiratory diseases; infections of the upper airways; pneumonias; bronchitises

### 8<sup>th</sup> 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)

**9<sup>th</sup> 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)

**10<sup>th</sup> 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; pancreatic tumours

**Seminar:** Reasons, diagnosis and treatment of hypertension; emergency supply in hypertension crisis; thromboembolisms (arterial and venous)

**11<sup>th</sup> 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 examinations in the respiratory diseases; infections of the upper airways; pneumonias; bronchitises, pulmonary tuberculosis; pulmonary tumours; pleural diseases; bronchial asthma; emphysema; respiratory insufficiency)

**12<sup>th</sup> 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)

**13<sup>th</sup> 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)

**14<sup>th</sup> 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

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS II**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

Seminar: **20**

Practical: **10**

### 1<sup>st</sup> week:

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

**Practical:** Examination of patients, process of examination

### 2<sup>nd</sup> week:

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

**Practical:** Examination of patients, process of examination

### 3<sup>rd</sup> week:

**Lecture:** Classification of pulmonary diseases

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

### 4<sup>th</sup> week:

**Lecture:** Restrictive pulmonary diseases I (pneumonia)

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

### 5<sup>th</sup> week:

**Lecture:** Restrictive pulmonary diseases II (pleuritis)

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

### 6<sup>th</sup> 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**

### 7<sup>th</sup> week:

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

**Practical:** Manual mobilization of the chest (demonstration)

### 8<sup>th</sup> week:

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

**Practical:** Manual mobilization of the chest (practice)

### 9<sup>th</sup> week:

**Lecture:** Mucoviscidosis (cystic fibrosis)

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

### 10<sup>th</sup> week:

**Lecture:** Surgical interventions on the chest

**Practical:** Pre- and postoperative treatments of the patients

### 11<sup>th</sup> week:

**Lecture:** Respiratory insufficiency

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

### 12<sup>th</sup> week:

**Lecture:** Pulmonary manifestation of cardiovascular diseases

**Practical:** Training programme for patients with pulmonary diseases (principles)

### 13<sup>th</sup> week:

**Lecture:** Complex rehabilitation in COPD

**Practical:** Summary of the movement program in COPD

### 14<sup>th</sup> week:

**Lecture:** Repetition

**Practical:** Practice

### 15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **KINESIOLOGY**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> 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.
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### Requirements

Pre-requisite for taking comprehensive exam is to absolve the Kinesiology I and II subjects.

It is recommended to take the examination at the end of the 4th semester, but the date should not be later than the end of the 6th semester. The components of the comprehensive exam are the written and oral examinations. To pass the written part is an obligatory condition to take the oral examination.

## Department of Physiotherapy, Faculty of Public Health

Subject: **KINESIOLOGY CLINICAL PRACTICE**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> 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 Certification of Clinical Practices. The students are required to know: the observation and palpation of the movement system; measurement methods of the active and passive, isotonic and isometric movements; the most frequent special and functional tests in the examination of the movement system; the evaluation of subjective and objective findings, discover the origin of dysfunctions.

## Department of Physiotherapy, Faculty of Public Health

Subject: **MOBILIZATION-MANUAL TECHNIQUES I**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **10**

Seminar: **15**

Practical: **90**

### 1<sup>st</sup> 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

### 2<sup>nd</sup> 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

### 3<sup>rd</sup> 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 trapezius muscle, levator muscle of the scapula (4) PNF I: scapula patterns: anterior elevation, posterior depression, anterior

depression, posterior elevation

### 4<sup>th</sup> 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 major muscles (4) PNF I: pelvis patterns: anterior elevation, posterior depression, anterior depression, posterior elevation

### 5<sup>th</sup> 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 major and minor pectoral muscles (4) PNF I: arm patterns; flexion-abduction-external rotation; extension-adduction-internal rotation

### 6<sup>th</sup> 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

**7<sup>th</sup> 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

**8<sup>th</sup> 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

**9<sup>th</sup> 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

**10<sup>th</sup> 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

**11<sup>th</sup> 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

**12<sup>th</sup> 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

**13<sup>th</sup> 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

**14<sup>th</sup> week:**

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

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **RADIOLOGY AND DIAGNOSTIC IMAGING**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **15**

**1<sup>st</sup> week:**

**Practical:** Introduction the X-ray laboratory

**2<sup>nd</sup> week:**

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

**3<sup>rd</sup> week:**

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

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

**Practical:** Radiology of traumatology

**7<sup>th</sup> week:**

**Practical:** Radiological diagnostics of spinal degenerative disorders; tumors and inflammation of spinal column and spinal canal

**8<sup>th</sup> week:**

**Practical:** Practice exam

### Requirements

Prerequisites: Biophysics, Anatomy II.

Attendance at practices is compulsory, more than 4-hour absence results in the refused signature in the Lecture Book.

## Department of Physiotherapy, Faculty of Public Health

Subject: **RESPIRATORY REHABILITATION CLINICAL PRACTICE**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> 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 Certification of Clinical Practices. The students are required to know the examination of patients; to observe the respiration, to process the expectoration; to evaluate the cardiorespiratory reactions to physical exercise, and to perform the movement training programme under the control of supervisor.

## CHAPTER 11

### ACADEMIC PROGRAM FOR THE 3RD YEAR

#### Department of Foreign Languages

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE II**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **45**

**1<sup>st</sup> week:**

**Practical:** Pretest.

**2<sup>nd</sup> week:**

**Practical:** Revision: Verb conjugation overview.

**3<sup>rd</sup> week:**

**Practical:** Body parts and movements of the upper extremities

**4<sup>th</sup> week:**

**Practical:** Body parts and movements of the lower extremities

**5<sup>th</sup> week:**

**Practical:** History taking – Personal data

**6<sup>th</sup> week:**

**Practical:** Taking social history

**7<sup>th</sup> week:**

**Practical:** Revision.

**8<sup>th</sup> week:**

**Practical:** Mid-term test.

**Self Control Test**

**9<sup>th</sup> week:**

**Practical:** Complaints, pain

**10<sup>th</sup> week:**

**Practical:** Diseases

**11<sup>th</sup> week:**

**Practical:** Giving advice

**12<sup>th</sup> week:**

**Practical:** Patient/client-related instructions

**13<sup>th</sup> week:**

**Practical:** Revision

**14<sup>th</sup> week:**

**Practical:** End-term test

**Self Control Test**

**15<sup>th</sup> 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. The missed classes may only be made up in the same week. Maximally, two language classes may be made up with another group and students have to ask for written permission (via e-mail) 24 hours in advance from the teacher whose class they would like to attend for a makeup because of the limited seats available. 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

## CHAPTER 11

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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.

The minimum requirement for the mid-term and the end-term tests is 50 % each. If a student does not score this much he/she has to repeat the test. 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: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

### 1<sup>st</sup> week:

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

### 2<sup>nd</sup> week:

**Lecture:** Introduction to general pharmacology: pharmacokinetics and pharmacodynamics

### 3<sup>rd</sup> week:

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

### 4<sup>th</sup> week:

**Lecture:** Noradrenergic transmission and other peripheral mediators

### 5<sup>th</sup> week:

**Lecture:** The heart. Drugs that affect cardiac function

### 6<sup>th</sup> week:

**Lecture:** The vascular system. Atherosclerosis and lipoprotein metabolism

### 7<sup>th</sup> week:

**Lecture:** Respiratory pharmacology. The kidney

### 8<sup>th</sup> week:

**Lecture:** Drugs used in the treatment of infections

### 9<sup>th</sup> week:

**Lecture:** Pharmacology of gastrointestinal system.

Blood sugar and diabetes mellitus	drugs, CNS stimulants and psychotomimetic drugs)
<b>10<sup>th</sup> week:</b> <b>Lecture:</b> Endocrine drugs	<b>13<sup>th</sup> week:</b> <b>Lecture:</b> Analgesic drugs, local anaesthetics, anti-inflammatory drugs
<b>11<sup>th</sup> week:</b> <b>Lecture:</b> Pharmacology of CNS drugs (transmitters and modulators, neurodegenerative disorders, general anaesthetic agents, anxiolytic and hypnotic drugs)	<b>14<sup>th</sup> week:</b> <b>Lecture:</b> Muscle relaxants
<b>12<sup>th</sup> week:</b> <b>Lecture:</b> Pharmacology of CNS Drugs (antipsychotic drugs, drugs used in affective disorders, antiepileptic	<b>15<sup>th</sup> week:</b> <b>Lecture:</b> 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, Faculty of Public Health

Subject: **INTERNAL MEDICINE FOR PHYSIOTHERAPISTS III**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

Seminar: **15**

Practical: **30**

#### 1<sup>st</sup> week:

**Lecture:** Blood vessels, lymphatic circulation (repetition)

**Seminar:** Principles of examination

**Practical:** Examination of patients suffering from peripheral circulatory disorders

#### 2<sup>nd</sup> 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

#### 3<sup>rd</sup> 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)

#### 4<sup>th</sup> 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)

#### 5<sup>th</sup> week:

**Lecture:** Diseases of the venous system

**Seminar:** Physiotherapy in the acute venous diseases. Discussion

**Practical:** Physiotherapy in the acute venous diseases. Practice

#### 6<sup>th</sup> 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

#### 7<sup>th</sup> week:

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

**Seminar:** Physiotherapy of the lymphedema

**Practical:** Lymphdrainage

#### 8<sup>th</sup> 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**

**9<sup>th</sup> 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

**10<sup>th</sup> 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)

**11<sup>th</sup> 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

**12<sup>th</sup> 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

**13<sup>th</sup> 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

**14<sup>th</sup> 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

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **MOBILIZATION-MANUAL TECHNIQUES II**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **90**

**1<sup>st</sup> 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

**2<sup>nd</sup> 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

**3<sup>rd</sup> week:**

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

**4<sup>th</sup> 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

**5<sup>th</sup> 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

**6<sup>th</sup> 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

**7<sup>th</sup> 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

**8<sup>th</sup> 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

**9<sup>th</sup> 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

**10<sup>th</sup> 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

**11<sup>th</sup> 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

**12<sup>th</sup> 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

**13<sup>th</sup> 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

**14<sup>th</sup> week:**

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

**15<sup>th</sup> week:**

**Practical:** (1) Soft tissue mobilization: Practice examination(2) Joint mobilization: Practice examination(3) PNF II: Practice examination

## Requirements

Prerequisite: Mobilization-Manual Techniques I

Attendance at practices is compulsory. If you missed more than 2 practices per modules, the signature may be refused.. Examination: The term mark consists of 2 components in each module: (1) theoretical and (2) practical knowledge will be assessed at the end of the semester.

## Department of Physiotherapy, Faculty of Public Health

Subject: **OBSTETRICS AND GYNAECOLOGY FOR PHYSIOTHERAPISTS**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

Practical: **45**

### 1<sup>st</sup> 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

### 2<sup>nd</sup> week:

**Lecture:** Pathological pregnancy, abortion

**Practical:** (1) Relaxing methods I

### 3<sup>rd</sup> week:

**Lecture:** Process of the birth; life-threatening states in the obstetrics

**Practical:** (1) Relaxing methods II

### 4<sup>th</sup> week:

**Lecture:** Disorders of menstruation; family planning, contraception

**Practical:** (1) Pre- and postoperative physiotherapy in the gynaecology

### 5<sup>th</sup> week:

**Lecture:** Gynaecological inflammations; benign gynaecological tumours

**Practical:** (1) Prevention of incontinence by special exercises

### 6<sup>th</sup> week:

**Lecture:** Malignant tumours

**Practical:** (1) Training of perineal muscles in different body positions

### 7<sup>th</sup> week:

**Lecture:** Surgical interventions

**Practical:** (1) Training of perineal muscles in

different body positions

### 9<sup>th</sup> week:

**Lecture:** Significance of the physiotherapy in gynaecology; principles and structure of postoperative exercises

**Practical:** (1) Complex training during pregnancy

### 10<sup>th</sup> 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

### 11<sup>th</sup> week:

**Lecture:** Structure of the pregnancy training; alternative birth

**Practical:** (1) Physiotherapy in the menopause

### 12<sup>th</sup> week:

**Lecture:** Synchronization of the stage of pregnancy and the training; relax methods, significance of the stretching exercises

**Practical:** (1) Postmenopausal training

### 13<sup>th</sup> week:

**Lecture:** Exercises in the early postpartum period; structure of the baby-mother training

**Practical:** (2) Clinical demonstration: pre- and postoperative patient care

### 14<sup>th</sup> week:

**Lecture:** Osteoporosis; possibilities of the physiotherapists at the gynaecological departments

**Practical:** (2) Clinical demonstration: visit in the delivery room; puerperal patient care

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **ORTHOPAEDICS FOR PHYSIOTHERAPISTS I**Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **10**Seminar: **20****1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

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

**3<sup>rd</sup> week:**

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

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

**Lecture:** Diseases of the neck and upper extremities

**7<sup>th</sup> week:**

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

**8<sup>th</sup> week:**

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

**9<sup>th</sup> week:**

**Lecture:** Postural kyphosis. Scoliosis and its treatment

**10<sup>th</sup> week:**

**Lecture:** Bone tumours and tumour-like lesions

**Seminar:** Introduction to e-learning module. Requirements.

**11<sup>th</sup> week:**

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

**12<sup>th</sup> 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.

<b>13<sup>th</sup> week:</b> <b>Seminar:</b> Discussion of findings: The significance of limb lengthening after total hip replacement	movement after total knee replacement
<b>14<sup>th</sup> week:</b> <b>Seminar:</b> Discussion of findings: The range of	<b>15<sup>th</sup> week:</b> <b>Seminar:</b> Consultation, closing remarks

### Requirements

Prerequisites: Biomechanics, Mobilization-Manual Techniques I

The attendance of lectures is strongly suggested, the attendance of seminars is compulsory. If you have more than 2-hour absence at seminars, the signature will be refused.

#### *E-learning program:*

It is possible to join the e-learning program during this semester. This program provides an opportunity for students to deepen their understanding of Orthopaedics. Depending on your performance on the e-learning program you may earn maximum 25% bonus points which will be added to the scores of the end-semester test. The bonus points are granted if the score of the end-semester test reaches or higher than the passing limit (50%). Further information about the e-learning program will be announced during the semester.

## Department of Physiotherapy, Faculty of Public Health

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS I**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **20**

Seminar: **10**

#### 1<sup>st</sup> week:

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

#### 2<sup>nd</sup> week:

**Lecture:** Osteoarthritis, spondylosis, low back pain

#### 3<sup>rd</sup> week:

**Lecture:** Soft tissue rheumatism, regional pain syndromes, compression syndromes

#### 4<sup>th</sup> week:

**Lecture:** Metabolic bone diseases, osteoporosis

#### 5<sup>th</sup> week:

**Lecture:** Crystal arthropathies

#### 6<sup>th</sup> week:

**Lecture:** Rheumatoid arthritis: clinical symptoms, diagnosis, therapy

#### 7<sup>th</sup> week:

**Lecture:** Juvenile idiopathic arthritis, Felty syndrome, Caplan syndrome

#### 8<sup>th</sup> week:

**Lecture:** Spondyloarthropathies: ankylosing spondylitis, psoriatic arthritis

#### 9<sup>th</sup> week:

**Lecture:** Infectious and reactive arthritides

#### 10<sup>th</sup> week:

**Lecture:** Introduction to immuno-pathology and autoimmunity. Autoimmune diseases

#### 11<sup>th</sup> week:

**Seminar:** Degenerative diseases

#### 12<sup>th</sup> week:

**Seminar:** Bone diseases, gout

#### 13<sup>th</sup> week:

**Seminar:** Arthritides

#### 14<sup>th</sup> week:

**Seminar:** Therapy: anti-inflammatory drugs, immunosuppression

#### 15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **TRAUMATOLOGY AND INTENSIVE THERAPY FOR PHYSIOTHERAPISTS I**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

### 1<sup>st</sup> week:

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

### 2<sup>nd</sup> week:

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

### 3<sup>rd</sup> week:

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

### 4<sup>th</sup> week:

**Lecture:** (7) Types of bleeding. Temporary stoppage of bleeding. Treatment of open and closed vessel injuries. Nerve injuries. Morphology and physiology of nerve regeneration. Basic principles of treatment of peripheral nerve injuries. Injuries of the brachial plexus. Treatment of nerve damage (tunnel syndromes). (8) Specific injuries to growing bones

and their principles of treatment. Common injury combinations and characteristic injuries in childhood. Early and late complications

### 5<sup>th</sup> week:

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

### 6<sup>th</sup> week:

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

### 7<sup>th</sup> week:

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

**8<sup>th</sup> week:**

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

**9<sup>th</sup> week:**

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

**10<sup>th</sup> week:**

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

**11<sup>th</sup> week:**

**Lecture:** (21-22) Closed and open diaphysis fractures of the femur and lower leg. Methods of

intramedullary stabilization. Plate osteosynthesis. External fixator. Classification, diagnosis and treatment of fractures of the tibial condyle

**12<sup>th</sup> week:**

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

**13<sup>th</sup> week:**

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

**14<sup>th</sup> 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

**15<sup>th</sup> 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, Faculty of Public Health

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

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **44**

Practical: **16**

**1<sup>st</sup> 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)

**2<sup>nd</sup> 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)

**3<sup>rd</sup> 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)

**4<sup>th</sup> 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)

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

**Lecture:** (16-17) Occupational diseases I-II. (18) Public health nutrition, foodborne diseases

**Practical:** (9-10) Health effects of workplace-related exposures

**7<sup>th</sup> 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

**8<sup>th</sup> week:**

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

**9<sup>th</sup> 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

**10<sup>th</sup> week:**

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

**11<sup>th</sup> week:**

**Lecture:** (31-32) Validity of etiological studies. Causal inference. (33) Interventional studies

**Practical:** (13-14) Types of epidemiological studies

**12<sup>th</sup> 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

**13<sup>th</sup> week:**

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

**14<sup>th</sup> week:**

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

**15<sup>th</sup> 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: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **45**

**1<sup>st</sup> week:**

**Practical:** Pretest

**2<sup>nd</sup> week:**

**Practical:** The role of physical therapists

**3<sup>rd</sup> week:**

**Practical:** Communication with colleagues and patients

**4<sup>th</sup> week:**

**Practical:** Physical examination and assessment

**5<sup>th</sup> week:**

**Practical:** Functional diagnosis, documentation

**6<sup>th</sup> week:**

**Practical:** Application of physical therapy devices and equipment

**7<sup>th</sup> week:**

**Practical:** Revision.

**8<sup>th</sup> week:**

**Practical:** Mid-term test.

**9<sup>th</sup> week:**

**Practical:** Physical therapy for musculoskeletal conditions.

**10<sup>th</sup> week:**

**Practical:** Physical therapy for neuromuscular conditions

**11<sup>th</sup> week:**

**Practical:** Physical therapy in cardiovascular and pulmonary conditions

**12<sup>th</sup> week:**

**Practical:** Physical therapy for pediatric conditions and for older adults

**13<sup>th</sup> week:**

**Practical:** Revision

**14<sup>th</sup> week:**

**Practical:** End-term test

**15<sup>th</sup> 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. The missed classes may be made up only in the same week. Maximally, two language classes may be made up with another group and students have to ask for written permission (via e-mail) 24 hours in advance from the teacher whose class they would like to attend for a makeup because of the limited seats available. 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.

The minimum requirement for the mid-term and the end-term tests is 50 % each. If a student does not score this much he/she has to repeat the test. 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, Faculty of Public Health

Subject: **CARDIOVASCULAR CLINICAL PRACTICE**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **INFANT CARE AND PAEDIATRICS FOR PHYSIOTHERAPISTS I**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **30**

Practical: **30**

### 1<sup>st</sup> week:

**Lecture:** (C) Introduction to paediatrics. (PT) Embryonic development of the nervous system  
**Practical:** Adapted physical education; terrestrial sensory training for nursery school children

### 2<sup>nd</sup> 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

### 3<sup>rd</sup> week:

**Lecture:** (C) Psychomotor development and mental retardation; diseases of premature infants (bronchopulmonary dysplasia, BPD and retinopathy of prematurity, ROP). (PT) Normal psychomotor development, healthy development of the movement. (PT)  
**Practical:** Conductive pedagogy

### 4<sup>th</sup> 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

### 5<sup>th</sup> 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

### 6<sup>th</sup> week:

**Lecture:** (C) Diseases of the bones, joints and muscles. (PT) Further therapeutic tools for CP treatment (drug treatment, orthoses, surgical interventions, and complementary developments)  
**Practical:** Bobath method – demonstration

### 7<sup>th</sup> week:

**Lecture:** (C) Congenital heart defects, postoperative state. (PT) Complex rehabilitation of the congenital heart defects  
**Practical:** Movement therapy of the neuromuscular diseases

### 8<sup>th</sup> 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

### 9<sup>th</sup> 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

### 10<sup>th</sup> week:

**Lecture:** (C) Mucoviscidosis. (PT) Complex rehabilitation of myelo-meningocele  
**Practical:** Basal stimulation

### 11<sup>th</sup> week:

**Lecture:** (C) Haemophilia; bone tumours. (PT) Rehabilitation in the diseases affecting the joints (amelia, trauma, juvenile rheumatoid arthritis)  
**Practical:** Orthotics-prosthetics in childhood

### 12<sup>th</sup> week:

**Lecture:** (C) Diabetes mellitus. Obesity. (PT) Rehabilitation of peripheral nerve injuries  
**Practical:** Sensory integration therapy. Hydrotherapy

### 13<sup>th</sup> week:

**Lecture:** (C) Renal diseases. (PT) Complex rehabilitation of feeding disorders  
**Practical:** Orofacial training – therapy of feeding disorders

### 14<sup>th</sup> 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

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS I**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **45**

Seminar: **15**

Practical: **15**

#### 1<sup>st</sup> 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

#### 2<sup>nd</sup> 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

#### 3<sup>rd</sup> week:

**Lecture:** (C) The structure and pathology of the motor system. (PT) Poststroke movement therapy, rehabilitation

**Seminar:** (PT) Principles of poststroke movement therapy

#### 4<sup>th</sup> 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

#### 5<sup>th</sup> 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

#### 6<sup>th</sup> week:

**Lecture:** (C) Cerebrovascular diseases. (PT) Muscular diseases, myopathies and myotonies.

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

#### 7<sup>th</sup> 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

#### 8<sup>th</sup> week:

**Lecture:** (C) Dementias. (PT) Extrapyramidal dysfunction, hyperkinesias.

**Practical:** (PT) Proprioceptive training

#### 9<sup>th</sup> 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

**10<sup>th</sup> 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

**11<sup>th</sup> 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

**12<sup>th</sup> 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

**13<sup>th</sup> 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.

**14<sup>th</sup> 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.

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **PAEDIATRICS CLINICAL PRACTICE**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **PHYSIOTHERAPY OF THE MOVEMENT SYSTEM I - PT IN ORTHOPAEDICS AND TRAUMATOLOGY**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **45**

Seminar: **30**

Practical: **30**

### 1<sup>st</sup> 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

### 2<sup>nd</sup> 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 view 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

### 3<sup>rd</sup> 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

### 4<sup>th</sup> week:

**Lecture:** (O) Etiology of the scoliosis; conservative and surgical treatments; kinesiological consequences 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

### 5<sup>th</sup> 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

#### 6<sup>th</sup> 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

#### 7<sup>th</sup> 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

#### 8<sup>th</sup> 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, consequences, 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 injuries use of selective stimulus and diadynamic currents; role of the passive mobilization

#### 9<sup>th</sup> 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

#### 10<sup>th</sup> 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

#### 11<sup>th</sup> 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

#### 12<sup>th</sup> week:

**Lecture:** (T) Ankle injuries; treatment; complementary treatment of complications; physiotherapy in Achilles tendon rupture

**Seminar:** (O) Postoperative after total hip

endoprosthesis. (T) Knee injuries

**Practical:** (O) Complex rehabilitation program after total hip endoprosthesis. (T) Ankle injuries

**13<sup>th</sup> 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

**14<sup>th</sup> week:**

**Lecture:** (T) Post amputation training; stub care,

prevention of contractures; phantom training; gait teaching; prostheses on the upper and lower limbs; multiple traumatism; 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

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **PROFESSIONAL ORIENTATION**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **15**

**1<sup>st</sup> week:**

**Practical:** Features of the applied research work in the health sciences

**2<sup>nd</sup> week:**

**Practical:** Orientation in the scientific literature

**3<sup>rd</sup> week:**

**Practical:** Conventional methods for orientation in the scientific literature

**4<sup>th</sup> week:**

**Practical:** Use of the electronic data bases I

**5<sup>th</sup> week:**

**Practical:** Use of the electronic data bases II

**6<sup>th</sup> week:**

**Practical:** Selection of articles for individual presentation

**7<sup>th</sup> week:**

**Practical:** Analysis of an article in the group – basic research

**8<sup>th</sup> week:**

**Practical:** Analysis of an article in the group – applied research

**9<sup>th</sup> week:****Practical:** Analysis of a review in the group**10<sup>th</sup> week:****Practical:** Techniques for presentation of the results**11<sup>th</sup> week:****Practical:** Individual presentations of articles I**12<sup>th</sup> week:****Practical:** Individual presentations of articles II**13<sup>th</sup> week:****Practical:** Requirements of thesis work I**14<sup>th</sup> week:****Practical:** Requirements of thesis work II**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **PSYCHIATRY I**Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15****1<sup>st</sup> week:****Lecture:** Meaning and role of the psychiatry; definition of disease in psychiatry; organic psychiatric disorders; psychotic psychiatric diseases

psychotherapies, cognitive therapy, relaxation methods, movement therapy; other psychotherapeutic methods; sociotherapies, possibilities for rehabilitation

**2<sup>nd</sup> week:****Lecture:** Basics of human communication; distress disorders, depression, suicide.**5<sup>th</sup> week:****Lecture:** Emergency psychiatry.**3<sup>rd</sup> week:****Lecture:** Personality disorders; addictions: alcoholism and drug dependence; treatment of the psychiatric diseases**6<sup>th</sup> week:****Lecture:** Active and passive movement therapy in psychiatric disorders**4<sup>th</sup> week:****Lecture:** Psychosomatic diseases; eating disorders;**7<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS II**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **30**

Seminar: **15**

Practical: **15**

### 1<sup>st</sup> week:

**Lecture:** Physiotherapy in rheumatology

**Seminar:** Measurements and physiotherapeutical diagnosis

**Practical:** General physiotherapeutical methods, treatments and basics of the exercise therapy

### 2<sup>nd</sup> 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

### 3<sup>rd</sup> 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

### 4<sup>th</sup> 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

### 5<sup>th</sup> 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

### 6<sup>th</sup> 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

### 7<sup>th</sup> 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

### 8<sup>th</sup> week:

**Lecture:** Rheumatoid arthritis in the upper extremities

**Seminar:** Examination and general physiotherapy in arthrosis

**Practical:** Basics of exercises aimed at arthrosis

### 9<sup>th</sup> week:

**Lecture:** Rheumatoid arthritis in the lower extremities

**Seminar:** Arthrosis in the lumbar regions; symptoms

**Practical:** Treatments, exercises and lifestyle in arthrosis

### 10<sup>th</sup> week:

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

**Seminar:** Differential diagnostics and physiotherapy

**Practical:** Treatment of periarthropathies

### 11<sup>th</sup> week:

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

**Seminar:** Differential diagnostics and physiotherapy

**Practical:** Treatment of periarthropathies

### 12<sup>th</sup> 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

<p><b>13<sup>th</sup> week:</b>  <b>Lecture:</b> Fibromyalgia: pathomechanism, symptoms, diagnosis and treatment  <b>Seminar:</b> Complex physiotherapy of fibromyalgia  <b>Practical:</b> Joint protection and lifestyle in rheumatologic diseases</p> <p><b>14<sup>th</sup> week:</b>  <b>Lecture:</b> Joint prevention and lifestyle in rheumatologic diseases  <b>Seminar:</b> Dermatomyositis, SLE, polymyalgia</p>	<p>rheumatica  <b>Practical:</b> Practice exam</p> <p><b>15<sup>th</sup> week:</b>  <b>Lecture:</b> Consultation  <b>Seminar:</b> Self Control Test  <b>Practical:</b> Practice exam  <b>Self Control Test (Theoretical knowledge)</b></p>
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### 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **THESIS I**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

**Practical:** 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.

*E-learning module* supports the activity. The aim of the e-learning course is to help the preparation for Thesis. The first stage in the scientific work is the formulation of our questions and to answer the questions with hypotheses. The selection of topic, the collection of data from scientific literature supporting our selection, and making a plan is the content of this course.

The course in the Neptun will be closed by a term mark. The basis of the evaluation is the activity in the Moodle course. To choose the topic, to collect at least 5 data from literature relevant to your selection, and to make a plan for your investigation are compulsory. Uploading more than five data from literature is awarded by bonus points.

Grades:

- 0-59 %: (1) fail
- 60-69 %: (2) pass
- 70-79 %: (3) satisfactory
- 80-89 %: (4) good
- 90-100 %: (5) excellent

## Department of Preventive Medicine, Faculty of Public Health

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

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **40**

Seminar: **20**

### 1<sup>st</sup> week:

**Lecture:** (1) Preventive strategies. (2) Screening programmes. (3) Introduction to epidemiology and surveillance of communicable diseases

**Seminar:** (1-2) HFA database

### 2<sup>nd</sup> week:

**Lecture:** (4) Characteristics of infectious diseases. (5) Vaccines and immunization. (6) Sexually transmitted diseases

**Seminar:** (3-4) Outbreak investigation

### 3<sup>rd</sup> week:

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

### 4<sup>th</sup> 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

### 5<sup>th</sup> 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)

### 6<sup>th</sup> week:

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

### 7<sup>th</sup> week:

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

### 8<sup>th</sup> week:

**Lecture:** (22) Epidemiology of chronic respiratory diseases. (23) Epidemiology of mental disorders and behavioral problems. (24) Health status in developing and developed countries

**Seminar:** (7-8) Screening, monitoring and

controlling diseases in primary care

### 9<sup>th</sup> 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

### 10<sup>th</sup> 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

### 11<sup>th</sup> week:

**Lecture:** (31) Health policy principles. (32) Needs, demands and use of health service

**Seminar:** (13-14) Public health and health care databases

### 12<sup>th</sup> week:

**Lecture:** (33-34) Basics of health economics. Health system financing

**Seminar:** (15-16) Introduction to health policy

### 13<sup>th</sup> week:

**Lecture:** (35-36) Quality management and control in health care

**Seminar:** (17-18) Health system financing

### 14<sup>th</sup> week:

**Lecture:** (37-38) Improvement of clinical effectiveness

**Seminar:** (19-20) Assessing and improving quality of health services

### 15<sup>th</sup> week:

**Lecture:** (39-40) New challenges of preventive medicine and public health in the 21<sup>st</sup> 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 Physiotherapy, Faculty of Public Health

Subject: **INFANT CARE AND PAEDIATRICS FOR PHYSIOTHERAPISTS II**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **10**

**1<sup>st</sup> week:**

**Lecture:** Developmental abnormalities of the nervous system

**2<sup>nd</sup> week:**

**Lecture:** Psychological characteristics of the childhood; making contact; role of the game

**3<sup>rd</sup> week:**

**Lecture:** Psychomotor development up to 1 year

**4<sup>th</sup> week:**

**Lecture:** Elementary movement patterns  
**Practical:** Clinical demonstration

**5<sup>th</sup> week:**

**Lecture:** Neurological infections from the developmental neurological aspect

**6<sup>th</sup> week:**

**Lecture:** Neurological examinations of the newborns and premature infants  
**Practical:** Clinical demonstration

**7<sup>th</sup> week:**

**Lecture:** Signs of damaged central nervous system  
**Practical:** Clinical demonstration

**8<sup>th</sup> week:**

**Lecture:** Neurological relations of the perinatal injuries

**9<sup>th</sup> week:**

**Lecture:** Perinatal intracranial haemorrhages

**10<sup>th</sup> week:**

**Lecture:** Hypoxic-ischaemic encephalopathy  
**Practical:** Clinical demonstration

**11<sup>th</sup> week:**

**Lecture:** Hydrocephalus

**12<sup>th</sup> week:**

**Lecture:** Metabolic diseases from the developmental neurological aspects

**13<sup>th</sup> week:**

**Lecture:** Neuromuscular diseases in the infant hood  
**Practical:** Clinical demonstration

**14<sup>th</sup> week:**

**Lecture:** Neurorehabilitation methods

**15<sup>th</sup> week:**

**Lecture:** Consultation

#### Requirements

Prerequisite: Infant Care and Paediatrics for Physiotherapists I

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **NEUROLOGY FOR PHYSIOTHERAPISTS II**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

Seminar: **15**

Practical: **45**

### 1<sup>st</sup> week:

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

**Practical:** (B) Inspection, taking history, examination of muscular tone

### 2<sup>nd</sup> week:

**Lecture:** Patient examination according to Bobath's method

**Seminar:** (B) Special examinations and tests

### 3<sup>rd</sup> week:

**Lecture:** Hypotonia and spasticity

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

### 4<sup>th</sup> week:

**Lecture:** Duties at the early phase of the stroke, treatment of the face

**Seminar:** (B) Facilitation of the truncal movements

### 5<sup>th</sup> week:

**Lecture:** Characteristics and examination of the gait, system of equilibrium

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

### 6<sup>th</sup> week:

**Lecture:** Cerebral plasticity and its role in the treatment

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

### 7<sup>th</sup> week:

**Lecture:** Principles in the treatment of neglect and Pusher syndrome

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

### 8<sup>th</sup> week:

**Seminar:** (E) Aim and principles of the electrodiagnostic procedures, rules of processing;

pain and electrotherapy

**Practical:** (B) Clinical demonstration.

### 9<sup>th</sup> week:

**Seminar:** (E) Models, types and classification of the electrotherapeutic treatments. Classification of the peripheral nerve injuries, complications; assessment of the degree of denervation; ENG, examination of the sensory nerves

**Practical:** (B) Clinical demonstration.

### 10<sup>th</sup> week:

**Seminar:** (E) Physical and physiological bases of the low and middle frequency treatments

**Practical:** (B) Clinical demonstration.

### 11<sup>th</sup> week:

**Practical:** (B) Clinical demonstration. (E) Galvan and Farad tests, Pflüger's rule, measurement of the rheobase and chronaxie

### 12<sup>th</sup> week:

**Practical:** (B) Clinical demonstration. (E) Taking intensity-duration curve, evaluation of the results, determination of the accommodation factor, examination of the muscles (EMG)

### 13<sup>th</sup> week:

**Practical:** (B) Clinical demonstration. (E) Muscle stimulation, selective stimulus current treatment

### 14<sup>th</sup> week:

**Seminar:** (E) Complex evaluation of the electrodiagnostic findings; indirect electrodiagnostics

**Practical:** (B) Clinical demonstration.

### 15<sup>th</sup> week:

**Lecture:** Consultation, end-term written examination

**Practical:** (B) Clinical demonstration. (E) End-term practice examination

### Requirements

Prerequisite: Neurology for Physiotherapists I

Attendance at lectures is highly recommended, since the topics in examination cover the lectured topics. The attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 4-hour absences from the practical hours/topics. The ESE mark will be constructed from the results of the examinations from the Bobath's method and electrodiagnostics. The scores of the modules may be improved selectively.

## Department of Physiotherapy, Faculty of Public Health

Subject: **PHYSIOTHERAPY OF THE MOVEMENT SYSTEM II - PT IN ORTHOPAEDICS AND TRAUMATOLOGY**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **60**

**1<sup>st</sup> week:**

**Practical:** (T) Patient examination

**2<sup>nd</sup> week:**

**Practical:** (O) Patient examination

**3<sup>rd</sup> week:**

**Practical:** (T) Relief of contracture (demonstration)

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

**Practical:** (O) Treatment of scoliosis at different location

**7<sup>th</sup> week:**

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

**8<sup>th</sup> week:**

**Practical:** (O) Treatment of scoliosis at different location

**9<sup>th</sup> week:**

**Practical:** (T) Treatment of the hand injuries

**10<sup>th</sup> week:**

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

**11<sup>th</sup> week:**

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

**12<sup>th</sup> week:**

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

**13<sup>th</sup> week:**

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

**14<sup>th</sup> week:**

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

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **PSYCHIATRY II**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

**1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

**Lecture:** Group training, structure of the rhythmic movement therapy

**3<sup>rd</sup> week:**

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

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

**Lecture:** Principles of symptom-oriented movement therapy in mood disorders; relaxation techniques

**6<sup>th</sup> week:**

**Lecture:** Communicative movement therapy; Alexander method; demonstration of the Feldeinkrais method and dance therapy

**7<sup>th</sup> week:**

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

**8<sup>th</sup> 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 knowledge)**

**9<sup>th</sup> week:**

**Practical:** What can do the physiotherapist, if the psychiatric disorder is a concomitant disease? Case study; demonstration and practice of the rhythmic exercises

**10<sup>th</sup> week:**

**Practical:** Demonstration and practice of the movement therapy

**11<sup>th</sup> week:**

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

**12<sup>th</sup> week:**

**Practical:** Demonstration and practice of the movement therapy applied in bipolar disorders

**13<sup>th</sup> week:**

**Practical:** Demonstration and practice of the communicative movement therapy; self expression through movement

**14<sup>th</sup> 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

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **REHABILITATION**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **30**

Seminar: **15**

Practical: **15**

### 1<sup>st</sup> week:

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

**Seminar:** Meet with people with disabilities – free discussion

### 2<sup>nd</sup> week:

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

**Seminar:** Assessment of ADL, global functions

### 3<sup>rd</sup> week:

**Lecture:** Medical rehabilitation: therapy approaches; team work

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

### 4<sup>th</sup> week:

**Lecture:** Educational rehabilitation in childhood and for adults

**Practical:** Visit to a special school/ early intervention program

### 5<sup>th</sup> week:

**Lecture:** Main features of vocational rehabilitation

**Practical:** Visit to an integrated workplace

### 6<sup>th</sup> week:

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

**Practical:** Visit to a daily care center

### 7<sup>th</sup> week:

**Lecture:** Psychological approach in rehabilitation; communication and communication disorders

**Seminar:** Discussion of the lectured topics

### 8<sup>th</sup> week:

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

**Seminar:** Cardiac training programs

### 9<sup>th</sup> week:

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

**Seminar:** PT methods in rehabilitation

### 10<sup>th</sup> week:

**Lecture:** Rehabilitation for people with chronic neuro-musculoskeletal conditions

**Seminar:** Orthoses, mobility devices and care tools

### 11<sup>th</sup> week:

**Lecture:** Paediatric rehabilitation

**Practical:** Visit to the Paediatric Rehabilitation Center

### 12<sup>th</sup> week:

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

**Practical:** Practice in Kenézy Hospital Rehabilitation Unit (Prosthetics included)

### 13<sup>th</sup> week:

**Lecture:** Pulmonary rehabilitation

**Practical:** Practice in Rehabilitation Unit of Department of Pulmonology

### 14<sup>th</sup> week:

**Lecture:** Psychiatric rehabilitation

**Practical:** Visit of the psychiatric rehabilitation program at Department of Psychiatry

### 15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **RHEUMATOLOGY FOR PHYSIOTHERAPISTS III**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **30**

**1<sup>st</sup> week:**

**Practical:** Demonstration of examination

**2<sup>nd</sup> week:**

**Practical:** Treatment of the joint pain

**3<sup>rd</sup> week:**

**Practical:** Symptoms and treatment of the rheumatoid arthritis

**4<sup>th</sup> week:**

**Practical:** Exercises with joint protection

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

**Practical:** Complex functional treatment of the ankylosing spondylitis

**7<sup>th</sup> week:**

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

**8<sup>th</sup> week:**

**Practical:** Examination and general physiotherapy in

arthrosis

**9<sup>th</sup> week:**

**Practical:** Treatments, exercises in arthrosis

**10<sup>th</sup> week:**

**Practical:** Soft tissue rheumatism, diagnostics and treatment

**11<sup>th</sup> week:**

**Practical:** Treatment of periarthropathies

**12<sup>th</sup> week:**

**Practical:** Osteoporosis, functional treatment

**13<sup>th</sup> week:**

**Practical:** Fibromyalgia: symptoms, diagnostics and treatment

**14<sup>th</sup> week:**

**Practical:** Polymyositis and dermatomyositis

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **THESIS II**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

**Practical:** Data collection and evaluation

### Requirements

Prerequisite: Thesis I

The aim of the course is to help the process of scientific work. E-learning module supports the activity. Content: data collection, analysis of data, constructing the figures and writing the Methods.

## Department of Physiotherapy, Faculty of Public Health

Subject: **TRAUMATOLOGY AND INTENSIVE THERAPY FOR PHYSIOTHERAPISTS II**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

#### 1<sup>st</sup> 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

#### 2<sup>nd</sup> 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

#### 3<sup>rd</sup> week:

**Lecture:** Water and electrolyte balance in normal and pathologic states

**Practical:** Water and electrolyte balance, role of the physiotherapist in the care

#### 4<sup>th</sup> week:

**Lecture:** Unconscious and disturbed patient; grades of the disorientation

**Practical:** Care of a disoriented patient, role of the physiotherapist

#### 5<sup>th</sup> week:

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

**Practical:** Care of a comatose patient, role of the physiotherapist

#### 6<sup>th</sup> 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

#### 7<sup>th</sup> 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 injury

#### 8<sup>th</sup> 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

#### 9<sup>th</sup> 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

**10<sup>th</sup> week:**

**Lecture:** Respiratory insufficiency and its intensive treatment

**Practical:** Indications and contraindications of the respiratory physiotherapy in the acute care

**11<sup>th</sup> week:**

**Lecture:** Respiratory physiotherapy

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

**12<sup>th</sup> week:**

**Lecture:** Artificial respiration, indications, types of respirators

**Practical:** Physiotherapy for patient with prolonged mechanical respiration

**13<sup>th</sup> week:**

**Lecture:** Methods of mechanical ventilation, artificial breathing strategy

**Practical:** Breaking the patient of the respirator

**14<sup>th</sup> week:**

**Lecture:** Summary

**Practical:** Summary, repetition

**15<sup>th</sup> 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, Faculty of Public Health

Subject: **HEALTH INFORMATICS**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **10**

Practical: **20**

**1<sup>st</sup> 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

**2<sup>nd</sup> 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

**3<sup>rd</sup> week:**

**Lecture:** Data management: information systems, databases, network management, data flow

**4<sup>th</sup> 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

**5<sup>th</sup> week:**

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

**6<sup>th</sup> 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.

**7<sup>th</sup> 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

<p><b>8<sup>th</sup> week:</b>  <b>Practical:</b> Database management systems. Comparison of spreadsheet and database management applications MS Excel – MS Access.</p> <p><b>9<sup>th</sup> week:</b>  <b>Practical:</b> MS Excel – Pivot table, queries, reports, charts.</p> <p><b>10<sup>th</sup> week:</b>  <b>Practical:</b> MS Access (field types, defining keys; table design, layout, interconnection, import/export data, converting data), reports, queries</p> <p><b>11<sup>th</sup> week:</b>  <b>Practical:</b> Decision making; geographic information system (GIS) visualization methods</p>	<p><b>12<sup>th</sup> week:</b>  <b>Practical:</b> Application of GIS in health care; communication between systems, applications.</p> <p><b>13<sup>th</sup> week:</b>  <b>Practical:</b> Collaboration work – file sharing and online office applications, sharing data, sharing information, work in groups.</p> <p><b>14<sup>th</sup> week:</b>  <b>Practical:</b> Information sources and databases in the public health practice</p> <p><b>15<sup>th</sup> week:</b>  <b>Practical:</b> Practice exam.</p>
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### Requirements

Prerequisites: Basics of Informatics, Preventive Medicine and Public Health II  
Attendance at lectures is strongly recommended, the attendance at practical hours is compulsory. If you miss more than 4 hours the signature will be refused.

## Department of Physiotherapy, Faculty of Public Health

Subject: **INTERNAL MEDICINE CLINICAL PRACTICE**

Year, Semester: 4<sup>th</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **80**

**Practical:** 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **NEUROLOGY CLINICAL PRACTICE**

Year, Semester: 4<sup>th</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **80**

**Practical:** Central paresis; peripheral paresis; sclerosis multiplex; Parkinson's syndrome; muscular

disorders; other neurological diseases

### Requirements

*Prerequisite:* Neurology for Physiotherapists II

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

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **ORTHOPAEDICS CLINICAL PRACTICE**

Year, Semester: 4<sup>th</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **120**

**Practical:** 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **REHABILITATION CLINICAL PRACTICE**

Year, Semester: 4<sup>th</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **80**

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

### Requirements

*Prerequisite:* Rehabilitation

*Educational objective:* Students learn the special profile of the department; special methods of examination

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

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **RHEUMATOLOGY CLINICAL PRACTICE**

Year, Semester: 4<sup>th</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **120**

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

### Requirements

*Prerequisite:* Rheumatology for Physiotherapists II

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

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **THESIS III**

Year, Semester: 4<sup>th</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

**Practical:** Analysis and discussion of the results on the basis of scientific literature, writing the Thesis work

### Requirements

*Prerequisite:* Thesis II. E-learning module supports the activity.

## Department of Physiotherapy, Faculty of Public Health

Subject: **TRAUMATOLOGY CLINICAL PRACTICE**

Year, Semester: 4<sup>th</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **120**

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

### **Requirements**

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

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

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

## CHAPTER 13 ELECTIVE COURSES

### Department of Behavioural Sciences, Faculty of Public Health

Subject: **HEALTH PSYCHOLOGY**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

**1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

**Lecture:** Framing health psychology: kindred disciplines of medical and clinical psychology, medical anthropology, behavioural medicine

**3<sup>rd</sup> week:**

**Lecture:** Health behaviour: definition and conditions of appearance

**4<sup>th</sup> week:**

**Lecture:** Comparative analysis of lay and professional mental representations of health

**5<sup>th</sup> week:**

**Lecture:** Personality and health, hardiness and health

**6<sup>th</sup> week:**

**Lecture:** Coping: theories, forms, effects

**7<sup>th</sup> week:**

**Lecture:** Doctor-patient communication: role of health beliefs, locus of control

**8<sup>th</sup> week:**

**Lecture:** Satisfaction, compliance, adherence:

comparative analysis

**9<sup>th</sup> week:**

**Lecture:** Forms and mechanisms of preventive behavioural acts

**10<sup>th</sup> week:**

**Lecture:** Health behaviour: gender- and age-differences

**11<sup>th</sup> week:**

**Lecture:** Stress: comparative/interdisciplinary theories

**12<sup>th</sup> week:**

**Lecture:** Health belief and health behaviour: interactive mechanisms

**13<sup>th</sup> week:**

**Lecture:** Health psychology of pain

**14<sup>th</sup> week:**

**Lecture:** Interactive analyses of case studies

**15<sup>th</sup> week:**

**Lecture:** Consultation

#### Requirements

Prerequisite: Basics of Psychology

Attendance at lectures is strongly recommended.

## Department of Behavioural Sciences, Faculty of Public Health

Subject: **HEALTH SOCIOLOGY**  
 Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester  
 Number of teaching hours:  
 Lecture: **30**

**1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

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

**3<sup>rd</sup> week:**

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

**4<sup>th</sup> week:**

**Lecture:** The social equilibrium of health and disease; bio-psycho-social interpretation of disequilibrium. Patterns of health-, risk-, and disease behaviour through case studies

**5<sup>th</sup> week:**

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

**6<sup>th</sup> week:**

**Lecture:** Sociocultural models of health care professions/jobs. Job orientation and prestige of health care professions

**7<sup>th</sup> week:**

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

**8<sup>th</sup> week:**

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

**9<sup>th</sup> week:**

**Lecture:** Organizational sociology of health care

**10<sup>th</sup> week:**

**Lecture:** Health care secularization and medicalization

**11<sup>th</sup> week:**

**Lecture:** Economic sociology of health care. Inequalities in health needs, demands and capacities

**12<sup>th</sup> week:**

**Lecture:** Sociocultural motivation for the use of health services

**13<sup>th</sup> week:**

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

**14<sup>th</sup> 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

**15<sup>th</sup> 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: 1<sup>st</sup> year/2<sup>nd</sup> semester  
 Number of teaching hours:  
 Lecture: **30**

**1<sup>st</sup> week:**

**Lecture:** Tissues/organs of the immune system.

**2<sup>nd</sup> week:**

**Lecture:** Immune cells. Innate and adaptive arms of the immune system.

**3<sup>rd</sup> week:**

**Lecture:** Innate immune system; recognition and elimination of pathogens.

**4<sup>th</sup> week:**

**Lecture:** Antigen presentation.

**5<sup>th</sup> week:**

**Lecture:** Immunoglobulins; structure and functions.

**6<sup>th</sup> week:**

**Lecture:** B cells; activation and effector functions.

**7<sup>th</sup> week:**

**Lecture:** T cells; types and functions.

**8<sup>th</sup> week:**

**Lecture:** The collaborations between innate and adaptive immunity. Antibody types and functions.

**9<sup>th</sup> week:**

**Lecture:** Memory. Passive and active immunization.

**10<sup>th</sup> week:**

**Lecture:** The organization of the immune system.

**11<sup>th</sup> week:**

**Lecture:** Hypersensitivity reactions.

**12<sup>th</sup> week:**

**Lecture:** Autoimmunity. Immunological aspects in geriatrics. Rheumatology.

**13<sup>th</sup> week:**

**Lecture:** Inflammation. Anti-inflammatory agents. Biological therapy.

**14<sup>th</sup> week:**

**Lecture:** Modulation of the immune system with diet and exercise.

**15<sup>th</sup> week:**

**Lecture:** Consultation.

### Requirements

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **PSYCHOSOMATICS**  
 Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester  
 Number of teaching hours:  
 Lecture: **15**

**1<sup>st</sup> week:**

**Lecture:** Definition of psychosomatics, historical background

**2<sup>nd</sup> week:**

**Lecture:** Psycho-neuro-immunology; psychosomatic approach of the patients

**3<sup>rd</sup> week:**

**Lecture:** Psychosomatic syndromes

**4<sup>th</sup> week:**

**Lecture:** Psychosomatic syndromes

**5<sup>th</sup> week:**

**Lecture:** Pain, distress

**6<sup>th</sup> week:**

**Lecture:** Depression; communication with the patients

**7<sup>th</sup> week:**

**Lecture:** Suggestive communication; possibilities for therapy

**8<sup>th</sup> week:**

**Lecture:** Consultation

### Requirements

Prerequisite: Internal Medicine for Physiotherapists I

Attendance at lectures is strongly recommended.

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY I - AESTHETIC BODY FORMING GYMNASTICS**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **30**

**1<sup>st</sup> week:**

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

**2<sup>nd</sup> week:**

**Practical:** Exercises improving kinesthesia in different positions

**3<sup>rd</sup> week:**

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

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

**Practical:** Trunk flexion and extension exercises in different positions I

**6<sup>th</sup> week:**

**Practical:** Trunk flexion and extension exercises in different positions II

**7<sup>th</sup> week:**

**Practical:** Trunk flexion and extension exercises in different positions III

**8<sup>th</sup> week:**

**Practical:** Trunk lateral flexion exercises in different

positions I

**9<sup>th</sup> week:**

**Practical:** Trunk lateral flexion exercises in different positions II

**10<sup>th</sup> week:**

**Practical:** Trunk rotation exercises in different positions

**11<sup>th</sup> week:**

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

**12<sup>th</sup> week:**

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

**13<sup>th</sup> week:**

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

**14<sup>th</sup> week:**

**Practical:** End-term exam

**15<sup>th</sup> week:**

**Practical:** End-term exam

### Requirements

Prerequisite: Kinesiology II

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY II - AUTOSTRETCHING**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **15**

**1<sup>st</sup> week:**

**Practical:** Physiological background, principles and types of stretching. The place of autostretching in the extending techniques

**2<sup>nd</sup> week:**

**Practical:** Examination of tensibility in trunk flexors, stretch in different positions I

**3<sup>rd</sup> week:**

**Practical:** Examination of tensibility in trunk flexors, stretch in different positions II

**4<sup>th</sup> week:**

**Practical:** Examination of tensibility in trunk extensors, stretch in different positions I

**5<sup>th</sup> week:**

**Practical:** Examination of tensibility in trunk extensors, stretch in different positions II

**6<sup>th</sup> week:**

**Practical:** Examination of tensibility in the trunk lateral flexors, stretch in different positions I

**7<sup>th</sup> week:**

**Practical:** Examination of tensibility in the trunk lateral flexors, stretch in different positions II

**8<sup>th</sup> week:**

**Practical:** Examination of tensibility in the shoulder

complex, stretch in different positions I

**9<sup>th</sup> week:**

**Practical:** Examination of tensibility in the shoulder complex, stretch in different positions II

**10<sup>th</sup> week:**

**Practical:** Examination of tensibility in the pelvic complex, stretch in different positions I

**11<sup>th</sup> week:**

**Practical:** Examination of tensibility in the pelvic complex, stretch in different positions II

**12<sup>th</sup> week:**

**Practical:** Examination of tensibility in the ischiocrural muscles, stretch in different positions

**13<sup>th</sup> week:**

**Practical:** Examination of tensibility in the triceps surae, stretch in different positions

**14<sup>th</sup> week:**

**Practical:** End-term exam

**15<sup>th</sup> week:**

**Practical:** End-term exam

### Requirements

Prerequisite: Mobilization-Manual Techniques I

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY IV - LYMPHDRAINAGE**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **10**

Practical: **20**

**1<sup>st</sup> week:**

**Lecture:** Morphology and physiology of lymphatic circulation, insufficiency

**2<sup>nd</sup> week:**

**Lecture:** Main types, stages and characteristics of lymphedema

**3<sup>rd</sup> week:**

**Lecture:** Reasons of lymphedema, symptoms, early and late consequences. Complex treatment of the lymphedema

**4<sup>th</sup> week:**

**Lecture:** Basis of the lymphatic drainage. Structure and processing of the lymphatic drainage

**5<sup>th</sup> week:**

**Lecture:** Indications and contraindications of the lymphatic drainage

**6<sup>th</sup> week:**

**Lecture:** Complications of the lymphatic drainage  
**Practical:** Patient examination. Demonstration of basic and edema maneuvers.

**7<sup>th</sup> week:**

**Lecture:** Possibilities of prevention  
**Practical:** Practice of basic and edema maneuvers

**8<sup>th</sup> week:**

**Lecture:** Rules for the treatment of the face and neck

**Practical:** Demonstration of the treatment of the face and neck

**9<sup>th</sup> week:**

**Lecture:** Types of the compression treatment, indications and contraindications

**Practical:** Practice of the treatment of the face and neck

**10<sup>th</sup> week:**

**Lecture:** Bandage, materials, processing, indications and contraindications

**Practical:** Practical relations of the bandage treatment

**11<sup>th</sup> week:**

**Practical:** Demonstration of bandage (upper limb)

**12<sup>th</sup> week:**

**Practical:** Demonstration of bandage (lower limb)

**13<sup>th</sup> week:**

**Practical:** Repetition, practice

**14<sup>th</sup> week:**

**Practical:** Repetition, practice

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY VIII - COMPLEMENTER AND ALTERNATIVE MEDICINE**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

**1<sup>st</sup> week:**

**Lecture:** Definition and history of the complementary and alternative medicine (CAM).  
Relevance and role of CAM in the modern medicine

**2<sup>nd</sup> week:**

**Lecture:** Legal regulations of CAM in Hungary and Europe. Classification of CAM; „Mind-body”  
Medicine

**3<sup>rd</sup> week:**

**Lecture:** Natural, bio-based products. Alternative medical system, energy medicine

**4<sup>th</sup> week:**

**Lecture:** Manipulative and body-centered methods.

Traditional Chinese medicine

**5<sup>th</sup> week:**

**Lecture:** Definition and relevance of evidence based CAM. Acupuncture

**6<sup>th</sup> week:**

**Lecture:** Manual therapy (osteopathy, chiropractic).  
Massage, relaxation

**7<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPECIAL METHODS IN PHYSIOTHERAPY V - KLAPP'S METHODS**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **15**

**1<sup>st</sup> week:**

**Practical:** Position and importance of the crawling exercises in physiotherapy

**2<sup>nd</sup> week:**

**Practical:** Aims, principles and importance of the Klapp's exercises

**3<sup>rd</sup> week:**

**Practical:** Types of crawling exercises

**4<sup>th</sup> week:**

**Practical:** Learning and practice of exercises

**5<sup>th</sup> week:**

**Practical:** Learning and practice of exercises

**6<sup>th</sup> week:**

**Practical:** Learning and practice of exercises

**7<sup>th</sup> week:**

**Practical:** Learning and practice of exercises

**8<sup>th</sup> week:**

**Practical:** Application and adaptation the exercises in orthopedic physical therapy - abnormal posture

**9<sup>th</sup> week:**

**Practical:** Application and adaptation the exercises in orthopedic physical therapy - scoliosis

**10<sup>th</sup> week:**

**Practical:** Application and adaptation the exercises in orthopedic physical therapy - osteochondrosis,

Scheuermann diseases

**11<sup>th</sup> week:****Practical:** Application and adaptation the exercises in rheumatology - back pain**12<sup>th</sup> week:****Practical:** Application and adaptation the exercises in rheumatology – ankylosing spondylitis**13<sup>th</sup> week:****Practical:** Consultation**14<sup>th</sup> week:****Practical:** End-term exam**15<sup>th</sup> 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.

**Department of Physiotherapy, Faculty of Public Health**Subject: **SPECIAL SUBAQUATIC THERAPY I - INTRODUCTION TO SUBAQUATIC THERAPY**Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **10**Practical: **20****1<sup>st</sup> week:****Lecture:** Relationship of the humans and water**2<sup>nd</sup> week:****Lecture:** Physical and chemical effects of the water on the human organism**3<sup>rd</sup> week:****Lecture:** Orientation in the subaqual space**4<sup>th</sup> week:****Lecture:** Analysis of the spinal column movements, adaptation of the movements to the effects of the subaqual surroundings**5<sup>th</sup> week:****Lecture:** Movements in the water: relaxation and strengthening of the truncal muscles in the subaquatic space**6<sup>th</sup> 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**7<sup>th</sup> 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**8<sup>th</sup> week:****Lecture:** Individual and group exercises in the subaquatic space**Practical:** Movements in the water: contracture solution facilitated by the water**9<sup>th</sup> week:****Lecture:** Use of fixed and mobile instruments in water**Practical:** Movements in the water: instrumental facilitation of the movements in the water**10<sup>th</sup> 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 achieve muscle strengthening

<b>11<sup>th</sup> week:</b> <b>Practical:</b> Movements in the water: analysis of the gait in water	<b>13<sup>th</sup> week:</b> <b>Practical:</b> Fitness exercises in the water
<b>12<sup>th</sup> week:</b> <b>Practical:</b> Movements in the water: mobilization of the spinal column. Movements in the water: improvement of the coordination	<b>14<sup>th</sup> week:</b> <b>Practical:</b> End-term examination
	<b>15<sup>th</sup> week:</b> <b>Practical:</b> End-term examination

### Requirements

Prerequisite: Basics of Physiotherapy

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPORTS PHYSIOTHERAPY AND MEDICINE I - MEASUREMENT AND IMPROVEMENT OF PHYSICAL ABILITIES**

Year, Semester: 1<sup>st</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

**1<sup>st</sup> week:**

**Lecture:** Conditional ability – basics

**2<sup>nd</sup> week:**

**Lecture:** The training triad

**3<sup>rd</sup> week:**

**Practical:** Training in the gym - basics

**4<sup>th</sup> week:**

**Lecture:** Endurance

**5<sup>th</sup> week:**

**Practical:** Training in the gym: endurance - measuring and drills

**6<sup>th</sup> week:**

**Lecture:** Speed skill

**7<sup>th</sup> week:**

**Practical:** Training in the gym: Speed drill - measuring and drills

**8<sup>th</sup> week:**

**Lecture:** Force

**9<sup>th</sup> week:**

**Practical:** Training in the gym: Strength training - measuring and drills

**10<sup>th</sup> week:**

**Lecture:** Complex conditional ability

**11<sup>th</sup> week:**

**Practical:** Complex conditional ability

**12<sup>th</sup> week:**

**Lecture:** Balance: training and rest

**13<sup>th</sup> week:**

**Practical:** Stretching - measuring and drills

**14<sup>th</sup> week:**

**Practical:** Outdoor training

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPORTS PHYSIOTHERAPY AND MEDICINE II - SPORTS MEDICINE**

Year, Semester:

Number of teaching hours:

Lecture: **15**

**1<sup>st</sup> week:**

**Lecture:** Historical relations; position of the sports medicine in the medical supply and the sport

**2<sup>nd</sup> week:**

**Lecture:** System of the service; sports medicine

**3<sup>rd</sup> week:**

**Lecture:** Relations to internal medicine (role of physical activity in the prevention and treatment)

**4<sup>th</sup> week:**

**Lecture:** Basic knowledge in the sports surgery (sports injuries: definition, etiology, pathomechanism)

**5<sup>th</sup> week:**

**Lecture:** Basic knowledge in the sports surgery (acute care of sports injuries)

**6<sup>th</sup> week:**

**Lecture:** Basic knowledge in the sports surgery (overstressed injuries, general principles of treatment)

**7<sup>th</sup> week:**

**Lecture:** Rehabilitation of the sports injuries

**8<sup>th</sup> week:**

**Lecture:** Sports cardiology

**9<sup>th</sup> week:**

**Lecture:** Demonstration of patient examination (visit in the sport center)

**10<sup>th</sup> week:**

**Lecture:** Sports psychology

**11<sup>th</sup> week:**

**Lecture:** Nutrition of sportsmen

**12<sup>th</sup> week:**

**Lecture:** Doping and related questions

**13<sup>th</sup> week:**

**Lecture:** Special tasks in the sports medicine

**14<sup>th</sup> week:**

**Lecture:** Special service in the sports medicine

**15<sup>th</sup> week:**

**Lecture:** Consultation

### Requirements

Prerequisite: Orthopedics for Physiotherapists I Attendance at lectures is strongly recommended.

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPORTS PHYSIOTHERAPY AND MEDICINE III - SPORTS PHYSIOTHERAPY**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

**1<sup>st</sup> week:**

**Lecture:** Principles of sports physiotherapy

**Practical:** Adaptation in sports

<p><b>2<sup>nd</sup> week:</b>  <b>Lecture:</b> Physiotherapy methods in sports physiotherapy  <b>Practical:</b> Strengthening of muscles in the sports activity</p> <p><b>3<sup>rd</sup> week:</b>  <b>Lecture:</b> Physiotherapy methods in sports physiotherapy II  <b>Practical:</b> Athletic training, improvement of the speediness and endurance</p> <p><b>4<sup>th</sup> week:</b>  <b>Lecture:</b> Types and treatment of sports injuries  <b>Practical:</b> Warm up and stretching in different branches of sports</p> <p><b>5<sup>th</sup> week:</b>  <b>Lecture:</b> Upper limb injuries and their rehabilitation  <b>Practical:</b> Proprioceptive training in the sports</p> <p><b>6<sup>th</sup> week:</b>  <b>Lecture:</b> Lower limb injuries and their rehabilitation I  <b>Practical:</b> Principles of sports massage, physiotherapy in the sports</p> <p><b>7<sup>th</sup> week:</b>  <b>Lecture:</b> Lower limb injuries and their rehabilitation II  <b>Practical:</b> Fixations and tapes in the sports</p> <p><b>8<sup>th</sup> week:</b>  <b>Lecture:</b> Trunk, pelvis, neck and head injuries and their rehabilitation  <b>Practical:</b> Measurement of the results in rehabilitation, instrumental investigations</p>	<p><b>9<sup>th</sup> week:</b>  <b>Lecture:</b> Incidence of sports injuries in different sport branches I  <b>Practical:</b> Source and mechanism of injuries during sports activity I</p> <p><b>10<sup>th</sup> week:</b>  <b>Lecture:</b> Incidence of sports injuries in different sport branches II  <b>Practical:</b> Source and mechanism of injuries during sports activity II</p> <p><b>11<sup>th</sup> week:</b>  <b>Lecture:</b> Typical injuries of the women, children and elderly peoples, characteristics of their rehabilitation  <b>Practical:</b> Functional training tools</p> <p><b>12<sup>th</sup> week:</b>  <b>Lecture:</b> Physiotherapeutic relations of the sports internal medicine diseases  <b>Practical:</b> Diet of the sportsmen</p> <p><b>13<sup>th</sup> week:</b>  <b>Lecture:</b> Role of prevention in the sport  <b>Practical:</b> Return to the sport, role of the team work</p> <p><b>14<sup>th</sup> week:</b>  <b>Lecture:</b> Sports rehabilitation from medical point of view, treatment of the acute injuries  <b>Practical:</b> Possibilities for disabled peoples</p> <p><b>15<sup>th</sup> week:</b>  <b>Lecture:</b> Consultation  <b>Practical:</b> Practice exam</p>
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### 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPORTS PHYSIOTHERAPY AND SPORTS MEDICINE IV - TAPING TECHNIQUES**

Year, Semester: 4<sup>th</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **15**

**1<sup>st</sup> week:**

**Practical:** Theoretical background, effects, precautions and requirements of kinematic taping

**2<sup>nd</sup> week:**

**Practical:** The shoulder complex: examination and differential diagnostics

**3<sup>rd</sup> week:**

**Practical:** The upper extremities: examination and differential diagnostics

**4<sup>th</sup> week:**

**Practical:** Applied techniques for shoulder complex and upper extremities: introduction and practice

**5<sup>th</sup> week:**

**Practical:** The pelvico-hip complex and lower extremities: examination and differential diagnostics

**6<sup>th</sup> week:**

**Practical:** Applied techniques for pelvico-hip

complex and lower extremities: introduction and practice

**7<sup>th</sup> week:**

**Practical:** The spine: examination and differential diagnostics. Applied techniques for spine: introduction and practice

**8<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPORTS PHYSIOTHERAPY AND SPORTS MEDICINE IX - PILATES**

Year, Semester: 3<sup>rd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **15**

**1<sup>st</sup> week:**

**Practical:** History of Pilates Method

**2<sup>nd</sup> week:**

**Practical:** Principles of Pilates

**3<sup>rd</sup> week:**

**Practical:** Spine, core and body alignment

**4<sup>th</sup> week:**

**Practical:** Muscle movement and matwork

**5<sup>th</sup> week:**

**Practical:** Abdominal work for movement and stabilization

**6<sup>th</sup> week:**

**Practical:** Strong back

**7<sup>th</sup> week:**

**Practical:** Stretching with Pilates drills

**8<sup>th</sup> week:**

**Practical:** Matwork

**9<sup>th</sup> week:**

**Practical:** Matwork with small equipments

**10<sup>th</sup> week:**

**Practical:** Pilates in sports rehabilitation

**11<sup>th</sup> week:**

**Practical:** Matwork

**12<sup>th</sup> week:**

**Practical:** Pilates Machines

**13<sup>th</sup> week:**

**Practical:** Chiball class

**14<sup>th</sup> week:**

**Practical:** Spirals class

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **SPORTS PHYSIOTHERAPY AND SPORTS MEDICINE V - PULSE CONTROL**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **15**

Practical: **15**

**1<sup>st</sup> week:**

**Lecture:** Introduction

**Practical:** Using the heart rate monitor

**2<sup>nd</sup> week:**

**Lecture:** Determining individual heart rate parameters

**Practical:** Fitness tests

**3<sup>rd</sup> week:**

**Lecture:** Training and energy system

**Practical:** Cardiomachines

**4<sup>th</sup> week:**

**Lecture:** Training methods I

**Practical:** Running with heart rate monitors

**5<sup>th</sup> week:**

**Lecture:** Indoor-cycling trainings

**Practical:** Spinning® class

**6<sup>th</sup> week:**

**Lecture:** Polar own zone method

**Practical:** Training with dumbbells

**7<sup>th</sup> week:**

**Lecture:** Methods for calculating heart rate ranges

**Practical:** Outdoor sports

**8<sup>th</sup> week:**

**Lecture:** Training methods II

**Practical:** Circuit training

**9<sup>th</sup> week:**

**Lecture:** Heart rate variability

**Practical:** Cardio GX system

**10<sup>th</sup> week:**

**Lecture:** Training methods III

**Practical:** Interval training

**11<sup>th</sup> week:**

**Lecture:** Types of aerobic classes

**Practical:** Aerobic class

**12<sup>th</sup> week:**

**Lecture:** Training methods IV

**Practical:** Swimming

**13<sup>th</sup> week:**

**Lecture:** The Johnny G. Spinning® programme

**Practical:** High Intensity Spinning® class

**14<sup>th</sup> week:**

**Lecture:** Heart rate training in the sports rehabilitation

**Practical:** Fitness gym

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **TOOLS IN PHYSIOTHERAPY I - GYMNASTIC EQUIPMENTS**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **30**

**1<sup>st</sup> week:**

**Practical:** Introduction to the topic; demonstration of the equipments, technical instructions

**2<sup>nd</sup> week:**

**Practical:** Repetition of definitions (planes, movements, kinesiology principles)

**3<sup>rd</sup> week:**

**Practical:** Strengthening the upper limb muscles by bands in different positions I

**4<sup>th</sup> week:**

**Practical:** Strengthening the upper limb muscles by bands in different positions II; group and paired exercises

**5<sup>th</sup> week:**

**Practical:** Strengthening the upper limb muscles by bands in different positions III; group and paired exercises

**6<sup>th</sup> week:**

**Practical:** Strengthening the upper limb muscles by bands in staying position; group and paired exercises

**7<sup>th</sup> week:**

**Practical:** Improving the fine movements of the hand by different tools; repetition

**Self Control Test**

**8<sup>th</sup> week:**

**Practical:** Strengthening the lower limb muscles by bands in different positions I

**9<sup>th</sup> week:**

**Practical:** Strengthening the upper limb muscles by bands in different positions II; group and paired exercises

**10<sup>th</sup> week:**

**Practical:** Strengthening the upper limb muscles by bands in different positions III; group and paired exercises

**11<sup>th</sup> week:**

**Practical:** Strengthening the upper limb muscles by bands in different positions IV; group and paired exercises

**12<sup>th</sup> week:**

**Practical:** Strengthening and endurance training with ball, use of stability trainer

**13<sup>th</sup> week:**

**Practical:** Repetition, consultation

**14<sup>th</sup> week:**

**Practical:** End-term exam

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **TOOLS IN PHYSIOTHERAPY II - BALLS**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Practical: **30**

**1<sup>st</sup> week:**

**Practical:** Types of the balls, history

**2<sup>nd</sup> week:**

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

**3<sup>rd</sup> week:**

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

**4<sup>th</sup> week:**

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

**5<sup>th</sup> week:**

**Practical:** Strengthening and rendering the abdominal muscles

**6<sup>th</sup> week:**

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

**7<sup>th</sup> week:**

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

**8<sup>th</sup> week:**

**Practical:** Stretching and relaxing exercises, dynamic

and static stretch

**9<sup>th</sup> week:**

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

**10<sup>th</sup> week:**

**Practical:** Structure of the shape-forming and enhancing exercises

**11<sup>th</sup> week:**

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

**12<sup>th</sup> week:**

**Practical:** Use of the ball in different diseases and pathological states

**13<sup>th</sup> week:**

**Practical:** Preparation for the exam

**14<sup>th</sup> week:**

**Practical:** End-term exam

**15<sup>th</sup> 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.

## Department of Physiotherapy, Faculty of Public Health

Subject: **TOOLS IN PHYSIOTHERAPY III - PNF IN PRACTICE**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **10**

Practical: **20**

### 1<sup>st</sup> 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

### 2<sup>nd</sup> week:

**Lecture:** PNF in traumatology: types of damages of the upper extremity

**Practical:** Posttraumatic restoration of the upper limb functions by using PNF techniques

### 3<sup>rd</sup> week:

**Lecture:** PNF in traumatology: types of damages of the lower extremity

**Practical:** Posttraumatic restoration of the lower limb functions by using PNF techniques

### 4<sup>th</sup> week:

**Lecture:** PNF in traumatology: damage of the spinal column

**Practical:** Posttraumatic restoration of the spinal column functions by using PNF techniques

### 5<sup>th</sup> week:

**Lecture:** PNF in rheumatology; diseases of the upper limb

**Practical:** Restoration of the upper limb functions in rheumatologic diseases by using PNF techniques

### 6<sup>th</sup> week:

**Lecture:** PNF in rheumatology; diseases of the lower limb

**Practical:** Demonstration, practical relations

### 7<sup>th</sup> week:

**Lecture:** PNF in rheumatology

**Practical:** Improvement of mobility of the spine in

rheumatologic diseases by using PNF techniques

### 8<sup>th</sup> week:

**Lecture:** PNF in neurology, peripheral nerve injuries

**Practical:** Functional treatment of the peripheral nerve injuries

### 9<sup>th</sup> week:

**Lecture:** PNF in neurology, injuries of the CNS

**Practical:** Treatment of the CNS disorders

### 10<sup>th</sup> week:

**Lecture:** PNF in neurology, facial paresis

**Practical:** PNF in the facial region

### 11<sup>th</sup> week:

**Lecture:** PNF in orthopedics; gait disorders

**Practical:** Correction of gait disorders using PNF techniques

### 12<sup>th</sup> week:

**Lecture:** PNF in orthopedics, postural disorders

**Practical:** Correction of postural disorders using PNF techniques

### 13<sup>th</sup> week:

**Lecture:** PNF in orthopedics – other use

**Practical:** PNF in the perioperative period

### 14<sup>th</sup> week:

**Lecture:** Consultation

**Practical:** End-term exam

### 15<sup>th</sup> week:

**Lecture:** Consultation

**Practical:** End-term exam

### Requirements

Prerequisite: Mobilization-Manual Techniques II

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

## Department of Physiotherapy, Faculty of Public Health

Subject: **TOOLS IN PHYSIOTHERAPY IV - ORTHETICS-PROSTHETICS**

Year, Semester: 3<sup>rd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Lecture: **15**

**1<sup>st</sup> week:**

**Lecture:** Definition of the medical aids; history; classification

**2<sup>nd</sup> week:**

**Lecture:** Role of the medical aids in the rehabilitation; general characterization

**3<sup>rd</sup> week:**

**Lecture:** Role of physiotherapists in the patient education; development of tools

**4<sup>th</sup> week:**

**Lecture:** Upper limb orthoses, problems and possibilities

**5<sup>th</sup> week:**

**Lecture:** Lower limb orthoses

**6<sup>th</sup> week:**

**Lecture:** Lower limb prosthetics

**7<sup>th</sup> week:**

**Lecture:** Cervical spine orthoses, trunk corsets

**8<sup>th</sup> week:**

**Lecture:** Pelvic belts

**9<sup>th</sup> week:**

**Lecture:** Movement improving tools

**10<sup>th</sup> week:**

**Lecture:** Medical shoes

**11<sup>th</sup> week:**

**Lecture:** Compression stockings; incontinence management products

**12<sup>th</sup> week:**

**Lecture:** Anti-decubitus tools

**13<sup>th</sup> week:**

**Lecture:** Hygienic tools, medical aids for better quality of life

**14<sup>th</sup> week:**

**Lecture:** Hygienic tools, medical aids for better quality of life

**15<sup>th</sup> week:**

**Lecture:** Consultation

### Requirements

Prerequisites: Orthopaedics for Physiotherapists, Rheumatology for Physiotherapists I, Traumatology and Intensive Therapy for Physiotherapists I

Attendance at practices is compulsory. The signature of the Lecture Book may be refused if one has more than 2-hour absences at the practical hours.

## Department of Physiotherapy, Faculty of Public Health

Subject: **TOOLS IN PHYSIOTHERAPY VII - WII**

Year, Semester: 2<sup>nd</sup> year/2<sup>nd</sup> semester

Number of teaching hours:

Practical: **15**

**1<sup>st</sup> week:**

**Practical:** History and features of Wii. Wii Fit Plus and Wii Sport

**2<sup>nd</sup> week:**

**Practical:** The role of Wii in the rehabilitation.

General viewpoints, goals, tasks. Overview of Wii games

**3<sup>rd</sup> week:**

**Practical:** Role of Wii in the neurology. Hemiparetic and SM patients and other neurological diseases.

Practice of Wii games

**4<sup>th</sup> week:**

**Practical:** Role of Wii in the traumatology: patients with spinal cord injuries, paraplegia and other traumas. Practice of Wii games in the traumatology

**5<sup>th</sup> week:**

**Practical:** Use of Wii in case of sensory and intellectual disabilities and mental disorders. Practice

of Wii games in the psychiatry

**6<sup>th</sup> week:**

**Practical:** Use of Wii in old age and childhood. Practice of Wii games

**7<sup>th</sup> 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, University of Debrecen

Subject: **LIBRARY INFORMATICS**

Year, Semester: 2<sup>nd</sup> year/1<sup>st</sup> semester

Number of teaching hours:

Lecture: **10**

Seminar: **14**

**1<sup>st</sup> 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

**2<sup>nd</sup> week:**

**Lecture:** (3-4) Role and structure of an academic library

**3<sup>rd</sup> week:**

**Lecture:** (5-6) Electronic library, digital library tools

**4<sup>th</sup> week:**

**Lecture:** (7-8) Process and structure of scholarly communication, primary stakeholders, new directions

**5<sup>th</sup> week:**

**Lecture:** (9-10) Evaluation of data sources in scholarly publishing, role and nature of bibliometric indicators

**6<sup>th</sup> 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

**7<sup>th</sup> week:**

**Seminar:** (3-4) Library catalogs: search methods and related online services

**8<sup>th</sup> week:**

**Seminar:** (5-6) Medline (PubMed) and other relevant bibliographic databases I

**9<sup>th</sup> week:**

**Seminar:** (7-8) Medline (PubMed) and other relevant bibliographic databases II

**10<sup>th</sup> week:**

**Seminar:** (9-10) Identify and acquire full-text electronic documents (EBSCO, ScienceDirect, Springer Link)

**11<sup>th</sup> week:**

**Seminar:** (11-12) Reference softwares (RefWorks): preparing bibliographies, managing bibliographic data.

**12<sup>th</sup> 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

**1<sup>st</sup> 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  
164

**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. Szöllösi : 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\\_fir-st-things-angol/adatok.html](http://www.tankonyvtar.hu/hu/tartalom/tamop425/0061_fir-st-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:**

K. P. Levangie, C. C. Norkin: Joint Structure and Function. A Comprehensive Analysis. 4th edition. FA Davis Co, 2005. ISBN: 9780-8036-1191-7.  
D. A. Neumann: Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. 2nd edition. Mosby Co, 2009. ISBN: 0-3230-3989-8.  
H. M Clarkson: Musculoskeletal Assessment: Joint Range of Motion and Manual Muscle Strength. 3rd edition. Lippincott Williams & Wilkins, 2012. ISBN: 1-6091-3816-3.  
D. J. Magee: Orthopedic Physical Assessment. 5th edition. Elsevier Health Sciences, 2007. ISBN: 978-0-7216-0571-5.  
C.C. Norkin: Measurement of joint motion: A guide to goniometry. 4th edition. FA Davis Co, 2009. ISBN: 0-8036-2066-7.  
C. Kissner, L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Philadelphia, 2012. ISBN: 0-8036-2574-X.  
I.A. Kapandji: The Physiology of the Joints, Volume 1: Upper Limb. 6th edition. Churchill Livingstone, 2007. ISBN: 978-0-443-10350-6.  
I.A. Kapandji: The Physiology of the Joints: The Lower Limb. 6th edition. Churchill Livingstone, 2010. ISBN: 0-7020-3942-X.  
I.A. Kapandji: The Physiology of the Joints, volume III (The Vertebral Column, Pelvic Girdle and Head). 6th edition. Churchill Livingstone, 2008. ISBN: 0-7020-2959-9.

**Hungarian Language II:**

Marschalkó, Gabriella: Hungarolingua Basic Level 1. Debreceni Nyári Egyetem, 2011.

**Immunology:**

Abbul K. Abbas, Andrew H. Lichtman, Shiv Pillai: Basic Immunology. Fourth Edition. Elsevier, . ISBN: 978-1-4557-0707-2.

**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. Champion 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.

**2<sup>nd</sup> year****Kinesiology II:**

K. P. Levangie, C. C. Norkin: Joint Structure and Function. A Comprehensive Analysis. 4th edition. FA Davis Co, 2005. ISBN: 9780-8036-1191-7.  
 D. A. Neumann: Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation. 2nd edition. Mosby Co, 2009. ISBN: 0-3230-3989-8.  
 H. M Clarkson: Musculoskeletal Assessment: Joint Range of Motion and Manual Muscle Strength. 3rd edition. Lippincott Williams & Wilkins, 2012. ISBN: 1-6091-3816-3.  
 D. J. Magee: Orthopedic Physical Assessment. 5th edition. Elsevier Health Sciences, 2007. ISBN: 978-0-7216-0571-5.  
 C.C. Norkin: Measurement of joint motion: A guide to goniometry. 4th edition. FA Davis Co, 2009. ISBN: 0-8036-2066-7.  
 C. Kissner, L. A. Colby: Therapeutic Exercises – Foundation and Techniques. 6th edition. F.A. Davis Philadelphia, 2012. ISBN: 0-8036-2574-X.  
 I.A. Kapandji: The Physiology of the Joints, Volume 1: Upper Limb. 6th edition. Churchill Livingstone, 2007. ISBN: 978-0-443-10350-6.  
 I.A. Kapandji: The Physiology of the Joints: The Lower Limb. 6th edition. Churchill Livingstone, 2010. ISBN: 0-7020-3942-X.  
 I.A. Kapandji: The Physiology of the Joints, volume III (The Vertebral Column, Pelvic Girdle and Head). 6th 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](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:**

Gyórfy Erzsébet, Ph.D.: Hogy s mint? I. . 2013.

**Gerontology:**

Robnett R. H., W. C. Chop: Gerontology for the Health Care Professional.

2nd edition. Jones & Bartlett Publishers, 2009. ISBN: 9780-7637-5605-5.

**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.

**Applied Training Methods:**

R. A. Robergs, S. J. Keteyian: Fundamentals of Exercise Physiology.

2nd edition. McGraw-Hill Publishing Co., 2003. ISBN: 0-071-21407-0.

J. K. Ehrman, P. M. Gordon, P. S. Visich, S. J. Keteyian: Clinical Exercise Physiology.

2nd edition. Human Kinetics Europe Ltd, 2009. ISBN: 0-736-06565-2.

Jack H. Wilmore, W. Larry Kenney: Physiology of Sport and Exercise.

4th edition. Human Kinetics Europe Ltd, 2007. ISBN: 0-071-21407-0.

W. D. McArdle, F. I. Katch, V. L. Katch: Exercise Physiology: Energy, Nutrition, and Human Performance.

6th edition. Lippincott Williams & Wilkins, 2006. ISBN: 0-781-74990-5.

**Electro-, balneo-, hydro-, and climatotherapy:**

Cameron M. H. : Physical Agents in Rehabilitation: From Research to Practice.

3rd edition. Saunders, 2008. ISBN: 1-416-03257-6.

Watson T.: Electrotherapy. Evidence Based Practice.

12th edition. Churchill Livingstone, 2008. ISBN: 0-443-10179-5.

Robertson V., A. Ward, J. Low, A. Read: Electrotherapy Explained: Principles and Practice.

4th edition. Elsevier, 2006. ISBN: 0-7506-8843-7.

Hayes K. W., R. M. Nelson: Manual for Physical Agents .

5th edition. Prentice Hall Health, 2000. ISBN: 9780-1301-8733-8.

**Internal Medicine for Physiotherapists II:**

Frownfelter D., E. Dean: Cardiovascular and Pulmonary Physical Therapy: Evidence and Practice .

5th edition. Mosby , 2012. ISBN: 0-323-02775-X.

Pryor J. A., A. S. Prasad: Physiotherapy for Respiratory and Cardiac Problems: Adults and Paediatrics (Physiotherapy Essentials).

4th edition. Churchill Livingstone, 2008. ISBN: 0-080-44985-9.

DeTurk W. E., L. P. Cahalin: Cardiovascular and Pulmonary Physical Therapy: An Evidence-based Approach.

2nd edition. McGraw-Hill Medical, 2010. ISBN: 0-0715-9812-X.

**Kinesiology:**

K. P. Levangie, C. C. Norkin: Joint Structure and Function. A Comprehensive Analysis.

4th edition. FA Davis Co, 2005. ISBN: 9780-8036-1191-7.

D. A. Neumann: Kinesiology of the Musculoskeletal System: Foundations for Physical Rehabilitation.

2nd edition. Mosby Co, 2009. ISBN: 0-3230-3989-8.

H. M Clarkson: Musculoskeletal Assessment: Joint Range of Motion and Manual Muscle Strength.

3rd edition. Lippincott Williams & Wilkins, 2012. ISBN: 1-6091-3816-3.

Magee D. J.: Orthopedic Physical Assessment.

5th edition. Saunders, 2007. ISBN: 0-721-60571-0.

C.C. Norkin: Measurement of joint motion: A guide to goniometry.

4th edition. FA Davis Co, 2009. ISBN: 0-8036-2066-7.

I.A. Kapandji: The Physiology of the Joints, Volume 1: Upper Limb.

6th edition. Churchill Livingstone, 2007. ISBN: 978-0-443-10350-6.

I.A. Kapandji: The Physiology of the Joints, volume III (The Vertebral Column, Pelvic Girdle and Head).

6th edition. Churchill Livingstone, 2008. ISBN: 0-7020-2959-9.

I.A. Kapandji: The Physiology of the Joints: The Lower Limb.

6th edition. Churchill Livingstone, 2010. ISBN: 0-7020-3942-X.

Kissner C., L. A. Colby: Therapeutic Exercises – Foundation and Techniques.

6th edition. F.A. Davis Company, 2012. ISBN: 0-8036-2574-X.

**Kinesiology Clinical Practice:**

Kissner C., L. A. Colby: Therapeutic Exercises – Foundation and Techniques.

6th edition. F.A. Davis Company, 2012. ISBN: 0-8036-2574-X.

**Mobilization-Manual Techniques I:**

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168

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## **4<sup>th</sup> year**

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## CHAPTER 15

### TITLES OF THESES

#### **Department of Behavioural Sciences, Faculty of Public Health**

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, Faculty of Public Health**

1. Title: The roles of physical activity in disease prevention

Tutor: Imre Rurik M.D., M.Sc., Ph.D.

#### **Sport Center of University Debrecen**

1. Title: Effects of Pilates exercises on the physical abilities

Tutor: Katalin Nagy Varga M.Sc.

#### **Department of Internal Medicine**

1. Title: Effect of physical activity on physiological parameters elderly people

Tutor: Gyula Bakó M.D., Ph.D., D.Sc.

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: Cardiorespiratory parameters of university students – survey

2. Title: Knowledge of medical students about physiotherapy – survey and improvement

3. Title: Regeneration of skeletal muscle fibres – effects of physical activity (review)

Tutor: Julianna Cseri M.D., Ph.D., C.Sc.

4. Title: Improvement of proprioception by using instable instruments

5. Title: Role of physiotherapy in prevention

Tutor: Ilona Veres-Balajti M.Sc., Ph.D.

6. Title: Physiotherapy in ankylosing spondylitis

Tutor: Zsuzsanna Némethné Gyurcsik M.Sc.

#### **Division of Rheumatology**

1. Title: Quality of life in systemic sclerosis

Tutor: Szilvia Szamosi M.D., Ph.D.

2. Title: Role of physiotherapy in the treatment of idiopathic inflammatory myopathy (review)

Tutor: Andrea Vánca M.D., Ph.D.

#### **Department of Paediatrics**

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: The operative treatment and postoperative physiotherapy of the soft tissue degenerative changes of the shoulder

Tutor: Ferenc Urbán M.D.

2. Title: Exercises of the physiotherapy in the postoperative treatment of the flexor tendon injuries

Tutor: István Frenzl 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.