CHAPTER 1

INTRODUCTION

The aim of the University of Debrecen is to become a university of medical sciences committed to the prevention and restoration of health of the people, not only in its region but in the entire country. In the past two decades both medical science and health care have entered a new era: the medical science of the 21st century. Molecular medicine is opening up and new possibilities are available for the diagnosis, prevention, prediction and treatment of the diseases. One can witness such a progress in medical sciences that has never been seen before. Modern attitudes in health care should be enforced in practice, including therapeutical approaches that consider the explanation and possible prevention of diseases, and attempt to comprehend and take the human personality into consideration. These approaches demand the application of the most modern techniques in all fields of the medical education.

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

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

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

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

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

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

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

HIGHER EDUCATION IN DEBRECEN

A Brief History

1235: First reference to the town of Debrecen in ancient charters.
1538: Establishment of the “College of Reformed Church” in Debrecen.
1567: Higher education begins in the College.
1693: Declaration of Debrecen as a “free royal town”.
1849: Debrecen serves as the capital of Hungary for 4 months.
1912: Establishment of the State University of Debrecen comprising the Faculties of Arts, Law, Medicine and Theology.
1918: Inauguration of the Main Building of the Medical Faculty by King Charles IV of Hungary.
1921: The Medical Faculty becomes operational.
1932: Completion of buildings of the campus.
1944: Although during the Second World War, Debrecen became the capital of Hungary again (for 100 days), the University itself is abandoned for a while.
1949: The only year when the University has five faculties.
1950: The Faculty of Law idle; the Faculty of Science is established.
1951: The University is split up into three independent organizations: Academy of Theology, Medical School, Lajos Kossuth University of Arts and Sciences.
1991: The "Debrecen Universitas Association" is established.
1998: The "Federation of Debrecen Universities" is founded.
2000: The federation is transformed into the unified "University of Debrecen" with all the relevant faculties and with some 20,000 students.

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

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

The history of higher education in Debrecen goes back to the 16th century when the College of the Reformed Church was established. The University Medical School of Debrecen has its roots in this spiritual heritage. It was in the year of the millennium of the establishment of Hungary (1896) when the foundation of the present University was decided. The University of Debrecen was established in 1912, initially having four faculties (Faculties of Arts, Law, Medicine and Theology). The University was officially inaugurated by King Charles IV of Hungary on October 23rd, 1918. The educational activity at the University started in 1924, although the construction of the whole University was completed only in 1932. In 1951 the Faculty of Medicine became a self-contained, independent Medical University for training medical doctors.

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

Education at the University of Debrecen

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

The Hungarian Government gives major priorities to the higher education of health sciences in its higher education policy. One of these priorities is to increase the ratio of college level training forms within the Hungarian higher education system. The governmental policy wishes to implement conditions in which the whole health science education system is built vertically from the lowest (post-secondary or certificate) to the highest (PhD-training) levels. In fact, this governmental policy was the reason behind the establishment of the 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. Entrance for certain
The syllabuses and classes of all courses correspond to European standards. The total number of contact hours in medical education is over 5,500, which can be divided into three main parts: basic theoretical training (1st and 2nd year), pre-clinical subjects (3rd year) and clinical subjects (4th and 5th year) followed by the internship (6th year). The proportion of the theoretical and practical classes is 30% to 70%; whereas the students/instructors ratio is about 8/1. The first two years of dentistry education are similar to the medicine program, but the former contains a basic dental training that is followed by a three-year-long pre-clinical and clinical training. Besides the medicine and dentistry programs, there are several other courses also available, including molecular biology. The various Health College courses include more and more new curricula.

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

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

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

A one-year-long premedical (Basic Medicine) course, which serves as a foundation year, is recommended for those applicants who do not possess sufficient knowledge in Biology, Physics and Chemistry after finishing high school. After graduation, several interesting topics are offered for PhD training, which lasts for three years. If interested, outstanding graduates of the English General Medicine and Dentistry programs may join these PhD courses (“English PhD-program”). Special education for general practitioners has been recently started and a new system is in preparation now for the training of licensed physicians in Debrecen.

The accredited PhD programs include the following topics:

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

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

Medical Activity at the Faculty of Medicine

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

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

It is also of importance that the University of Debrecen has a particularly fruitful collaboration with the Nuclear Research Institute of the Hungarian Academy of Sciences in Debrecen, allowing the coordination of all activities that involve the use of their cyclotron in conjunction with various diagnostic and therapeutic procedures (e.g. Positron
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Emission Tomography 'PET').
Scientific Research at the Faculty of Medicine
Scientific research is performed both at the departments for basic sciences and at the laboratories of clinical departments. The faculty members publish about 600 scientific papers every year in international scientific journals. According to the scientometric data, the Faculty is among the 4 best of the more than 80 Hungarian research institutions and universities. Lots of scientists reach international recognition, exploiting the possibilities provided by local, national and international collaborations. Internationally acknowledged research areas are Biophysics, Biochemistry, Cell Biology, Immunology, Experimental and Clinical Oncology, Hematology, Neurobiology, Molecular Biology, Neurology, and Physiology. The scientific exchange program involves numerous foreign universities and a large proportion of the faculty members are actively involved in programs that absorb foreign connections (the most important international collaborators are from Belgium, France, Germany, Italy, Japan, the UK and the USA).

HISTORY OF THE FACULTY OF PUBLIC HEALTH

The first Faculty of Public Health in Hungary was established by the decision of the Hungarian Government on 1st December 2005, by the unification of the School of Public Health, the Department of Preventive Medicine, the Department of Family Medicine and the Department of Behavioral Sciences of the University of Debrecen. Becoming an independent faculty of the University of Debrecen (presently uniting 15 different faculties) was preceded by a 10-year period of development. Establishment and launching of 5 different postgraduate and one graduate training programmes as well as the establishment of a doctoral programme were carried out by the teaching staff of the faculty with the effective support of the University of Debrecen. As a result of these efforts the Faculty became a unique, internationally recognized and competitive training centre in Hungary. According to the Bologna process the Faculty has established and from 2006 and 2007 launched its bachelor and master training programmes in the field of public health and health sciences. With its 2 bachelor, 5 master training programmes and 6 postgraduate courses, the Faculty of Public Health offers a rich variety of learning experience at present. There are two doctoral programmes available since 2009.

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

ORGANISATION STRUCTURE OF THE FACULTY OF PUBLIC HEALTH

Department of Preventive Medicine
Division of Biomarker Analysis
Division of Biostatistics and Epidemiology
Division of Health Promotion
Division of Public Health Medicine
Department of Family and Occupational Medicine
Department of Behavioral Sciences
Division of Clinical and Health Psychology
Division of Humanities for Health Care
Department of Health Management and Quality Assurance
Department of Hospital Hygiene and Infection Control
Department of Physiotherapy
School of Public Health (as postgraduate training center)

MISSION OF THE FACULTY OF PUBLIC HEALTH

The mission of the Faculty of Public Health of the University of Debrecen as the centre of public health education in Hungary is to improve health of the population by developing and maintaining high- and internationally recognized quality training programs, complying with the training needs of the public health and health care institutions, both at the graduate and postgraduate level; pursuing excellence in research; providing consultancy as well as developing and investing in our staff. The Faculty of Public Health organizes and carries out its training activities by the professional guidelines of the Association of Schools of Public Health in the European Region.

BSC IN PHYSIOTHERAPY PROGRAM AT THE FACULTY OF PUBLIC HEALTH

Bachelor course in Physiotherapy launched by the Faculty of Public Health of the University of Debrecen is built on a 13-year experience in education of physiotherapists at the University of Debrecen. The training is identical in content to the accredited Bachelor of Science program in Nursing and Patient Care with Physiotherapist specialization launched
six years ago. The course is based on the University’s highly trained, internationally competitive staff and excellent infrastructure in order to fulfill an international demand in health care (involving physiotherapy) training. The majority of teachers have remarkable teaching experience in English taking part in the international training programmes of University of Debrecen. The international MSc programs (MSc in Public Health, MSc in Complex Rehabilitation) launched by the Faculty of Public Health are offered for students graduated in the BSc courses of health sciences. Students studying in English – similarly to those studying in Hungarian – will have the opportunity to join the Students’ Scientific Association, the most important means to prepare students for future academic career. Outstanding students may present their work at the local Students’ Scientific Conference organized by the Council of the Students’ Scientific Association annually. Best performing students can advance to the National Students’ Scientific Conference held every second year. Another way for students to introduce their scientific findings is to write a scientific essay which is evaluated through a network of reviewers.

CHAPTER 2
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<th>Position</th>
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<tbody>
<tr>
<td>Director</td>
<td>Attila Jenei M.Sc., Ph.D.</td>
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<tr>
<td>Manager Assistant</td>
<td>Ms. Beáta Kozsla-Dobi</td>
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<tr>
<td>Contract &amp; Marketing Coordinator</td>
<td>Ms. Ábrahám Varga</td>
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<td>Financial Officer</td>
<td>Ms. Rita Kovács</td>
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<td>Agent Coordinator</td>
<td>József Harmati</td>
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<td>English Program Officer</td>
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<td></td>
<td>(Admissions, BMC, US Loans, Wyckoff HMC Applications)</td>
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<td></td>
<td>Ms. Anett Galvácsi</td>
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<td>Ms. Enikő Sallai</td>
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# CHAPTER 5

**FACULTY OF MEDICINE - DEPARTMENTS OF BASIC SCIENCES**

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<td>Full Professor, Head of Oral Anatomy Division</td>
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<td>Professor Emeritus</td>
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<td>László Módis M.D., Ph.D., D.Sc.</td>
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<td>Associate Professor</td>
<td>András Birinyi M.Sc., Ph.D.</td>
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<td>Szabolcs Felszeghy Ph.D., D.D.S.</td>
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<td>Assistant Professor</td>
<td>Ms. Krisztina Holló M.Sc., Ph.D.</td>
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<td>Zoltán Mészár M.Sc., Ph.D.</td>
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<td>Ms. Anita Balázs M.Sc., Ph.D.</td>
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<td>Botond Gaál M.Sc.</td>
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<td>Ms. Nikoletta Gréta Kis M.Sc.</td>
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<td>Ms. Ildikó Papp M.Sc., Ph.D.</td>
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</table>
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<tr>
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<th>Name</th>
<th>Title and Qualifications</th>
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<td>Head of Dental Biochemistry Division</td>
<td>Ms. Zsuzsa Szondy M.D., Ph.D., D.Sc.</td>
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<td>Full Professor</td>
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PhD Student  
Ms. Nikoletta Szalóki M.Sc.

PhD Student  
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Szabolcs Tarapcsák M.Sc.
Gábor Tóth M.D.
Ms. Julianna Volló M.Sc.
Ms. Florina Zákány M.D.
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Ms. Jusztina J. Nagy M.A.
Ms. Judit Kovács M.A.
Ms. Éva Kövesi M.A.
Ms. Mónika Krasznai M.A.
Ms. Zsuzsa Lívia Mezei M.A.
László Répás M.A.
Ms. Katalin Rozman M.A.
Ms. Emőke Takácsné Tóth M.A.
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Associate Professor
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Assistant Lecturer
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Gergely Buglyó M.D.
Ms. Melinda Paholcsek M.Sc.

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József Schlammadinger M.D., Ph.D.
György Vargha M.D., Ph.D.
Sándor Vitális M.D., Ph.D.

PhD Student

Gábor Fidler M.Sc.

Academic Advisor

András Penyige M.Sc., Ph.D.
(BMC, Biology, Human Genetics)

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Sándor Biró Ph.D., D.Sc.

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Árpád Lányi M.Sc., Ph.D.

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Ms. Renáta Laczkó M.D., Ph.D.
Attila Szabó D.Phrarm.

Research Fellow

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Gábor Koncz M.Sc., Ph.D.

Research Assistant

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Ms. Adrienn Gyöngyösi M.Sc.
Ms. Kitti Pázmándi M.Sc., Ph.D.
Ms. Aliz Varga M.Sc., Ph.D.

PhD Student

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Ms. Eszter Boldizsár
Ms. Anett Mázló M.Sc.
Ms. Márta Tóth M.Sc.

Academic Advisor

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              Pál Gergely M.Sc., Ph.D., D.Sc., M.H.A.Sc.
Associate Professor  Péter Bay M.Sc., Ph.D.
            Ms. Csilla Csortos M.Sc., Ph.D.
            Ms. Ilona Farkas M.Sc., Ph.D.
Assistant Professor  Ms. Éva Bakó M.Sc., Ph.D.
            Ms. Edina Bakondi M.Sc., Ph.D.
            Tibor Docsa M.Sc., Ph.D.
            Csaba Hegedűs M.Sc., Ph.D.
            Ms. Andrea Kiss M.Sc., Ph.D.
            Endre Kókai M.Sc., Ph.D.
            Ms. Beáta Lontay M.Sc., Ph.D.
            Ms. Krisztina Tar M.Sc., Ph.D.
Assistant Lecturer  Ms. Karolina Cseri M.Sc.
            Ms. Judit Iván M.Sc., Ph.D.
Research Fellow  Ms. Anita Boratkó M.Sc., Ph.D.
            Ms. Edit Kapitányné Mikó M.Sc., Ph.D.
            Ms. Katalin Kovács M.Sc., Ph.D.
            Dénes Nagy M.Sc., Ph.D.
            Abdul Rahman Omar M.Sc., Ph.D.
            Ms. Magdolna Szántó M.Sc., Ph.D.
            András Vida M.Sc., Ph.D.
Junior Research Fellow  Ms. Petra Lakatos M.Sc.
            Ms. Adrienn Sipos M.Sc.
Invited Lecturer  Béla Tóth M.Sc., Ph.D.
PhD Student  Tamás Fodor M.Sc.
              Dániel Horváth M.Sc.
              Tamás Kéki M.Sc.
              Zoltán Kónya M.Sc.
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Ms. Tünde Kovács M.Sc.
Ms. Judit Márton M.Sc.
Ms. Lilla Nikoletta Nagy M.Sc.
Ms. Margit Péter M.Sc.
Ms. Katalin Petrényi M.Sc.
Zsolt Regdon M.Sc.
Ms. Ildikó Szabó M.Sc.
István Tamás M.Sc.
Ms. Emese Tóth M.Sc.
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Ms. Krisztina Szarka M.Sc., Ph.D.
Assistant Professor György Veress M.Sc., Ph.D.
Gábor Kardos M.D., Ph.D.
Assistant Lecturer Ms. Zsuzsanna Dombrádi M.Sc., Ph.D.
Renátó Kovács M.Sc.
Ms. Brigitta László M.Sc., Ph.D.
Research Fellow Ms. Anita Szalmás M.Sc., Ph.D.
Junior Research Fellow Ms. Eszter Gyöngyösi M.Sc.
Biologist Ms. Cecilia Miszti M.Sc.
Resident Ms. Evelin Bukta M.D.
Specialist Ms. Anita Kozák M.D.
Academic Advisor of Faculty of Medicine Ms. Marianna Domán
Academic Advisor of Faculty of Dentistry György Veress M.Sc., Ph.D.
PhD Student György Veress M.Sc., Ph.D.
Ms. Shabnam Ebrahimi M.Pharm.
Levente Szakács M.Sc.

Academic Advisor of Faculty of Pharmacy László Majoros M.D., Ph.D.

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József Szentmiklósi M.D., Ph.D.
Assistant Professor Attila Megyeri M.D., Ph.D.
Barna Peitl M.D., Ph.D.
Ms. Zsuzsanna Réka Sári D.Pharm., Ph.D.
Assistant Lecturer Ms. Ágnes Cseppentő M.D.
László Drimba M.D.
Ms. Rita Kiss M.D.
Senior Research Fellow József Németh M.Sc., Ph.D.
Research Fellow Ms. Zsuzsanna Gál M.Sc., Ph.D.
PhD Student Csaba Hegedüs M.Sc.
Ms. Diána Kovács M.Sc.
Ms. Beáta Lelesz M.Sc.
Balázs Marics M.Sc.
Ms. Éva Ungvári M.Sc.
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Full Professor, Head of Sport Physiology János Magyar M.D.,Ph.D.,D.Sc.
<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
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<tbody>
<tr>
<td>Full Professor, Head of Dental Physiology and Pharmacology Division</td>
<td>Péter Nánási M.D., Ph.D., D.Sc.</td>
</tr>
<tr>
<td>Full Professor</td>
<td>László Csernoch M.Sc., Ph.D., D.Sc.</td>
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<td>János Magyar M.D., Ph.D., D.Sc.</td>
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<td>Péter Nánási M.D., Ph.D., D.Sc.</td>
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<td>Professor Emeritus</td>
<td>László Kovács M.D., Ph.D., D.Sc., M.H.A.Sc.</td>
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<tr>
<td>Associate Professor</td>
<td>Tamás Bányász M.D., Ph.D.</td>
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<td>Péter Szűcs M.D., Ph.D.</td>
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<tr>
<td>Assistant Professor</td>
<td>János Almássy M.Sc., Ph.D.</td>
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<td>Ms. Szilvia Benkő M.Sc., Ph.D.</td>
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<td>Balázs Horváth M.D., Ph.D.</td>
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<td>Balázs Pál M.D., Ph.D.</td>
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<td>Norbert Szentandrássy M.D., Ph.D.</td>
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<td></td>
<td>István Balázs Tóth M.Sc., Ph.D.</td>
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<tr>
<td>Postgraduate Lecturer</td>
<td>Ms. Ágnes Jenes M.D.</td>
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<td>Attila Oláh M.D.</td>
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<td>Attila Szöllősi M.D.</td>
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<tr>
<td>Senior Research Fellow</td>
<td>Péter Szentesi M.Sc., Ph.D.</td>
</tr>
<tr>
<td>Research Fellow</td>
<td>Ms. Gabriella Czifra M.Sc., Ph.D.</td>
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<td></td>
<td>Ms. Beatrix Dienes M.Sc., Ph.D.</td>
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<td>Ms. Mónika Sztreyte M.Sc., Ph.D.</td>
</tr>
<tr>
<td>Junior Research Fellow</td>
<td>Ms. Marietta Budai M.Sc.</td>
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<td>Attila Mokánszki M.Sc., Ph.D.</td>
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<td>Tamás Oláh M.Sc., Ph.D.</td>
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<td>Ms. Angelika Varga M.Sc., Ph.D.</td>
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<tr>
<td>OTKA Postdoctoral Fellow</td>
<td>János Fodor M.Sc., Ph.D.</td>
</tr>
<tr>
<td></td>
<td>Ms. Johanna Mihály M.Sc., Ph.D.</td>
</tr>
<tr>
<td>PhD Student</td>
<td>Ms. Lídia Ambrus M.Sc.</td>
</tr>
<tr>
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<td>Ms. Ágnes Angyal M.Sc.</td>
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<td>Norbert Balogh M.Sc.</td>
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<td>Ms. Csilla Bordás M.Sc.</td>
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<td>Ms. Zsuzsanna Gaál M.D.</td>
</tr>
<tr>
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<td>Ms. Adrienn Kovács M.Sc.</td>
</tr>
<tr>
<td></td>
<td>Gergő Kovács M.Sc.</td>
</tr>
</tbody>
</table>
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Ms. Anna Páldy M.D., Ph.D.
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Zoltán Tasnádi M.Sc.
József Topár M.Sc.
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CHAPTER 6

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Zoltán Vincze M.D., Ph.D.
Candidate Clinical Assistant  Tamás Köbling M.D.
Resident Zoltán Szegedi M.D.
SZabolcs Tóth M.D.

Invited Lecturer Ms. Timea Boros M.D.
Gergely Nagy M.D.
Tamás Ötvös M.D.
Ms. Margit Petrus M.D.
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János Mátyus M.D., Ph.D.
László Újhelyi M.D., Ph.D.
Clinical Assistant Ms. Mária Juhász M.D., Ph.D.
Ms. Réka P. Szabó M.D.
Ms. Klára Pucsok M.D.
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Assistant Lecturer Tamás Köbling M.D.
CHAPTER 7
UNIVERSITY CALENDAR
UNIVERSITY CALENDAR FOR THE BSC IN PUBLIC HEALTH PROGRAM
ACADEMIC YEAR 2015/2016

OPENING CEREMONY: 6th September, 2015

1st SEMESTER

<table>
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<tr>
<th>Year 2015/16</th>
<th>Course</th>
<th>Examination Period</th>
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<tr>
<td>BSc in Public Health</td>
<td>September 7 - December 18, 2015</td>
<td>December 21, 2015 - February 5, 2016</td>
</tr>
<tr>
<td>BSc in Physiotherapy</td>
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<td>(15 weeks)</td>
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<tr>
<td>MSc in Public Health</td>
<td></td>
<td>(7 weeks)</td>
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<tr>
<td>MSc in Complex Rehabilitation</td>
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2nd SEMESTER

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<th>Year</th>
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<tbody>
<tr>
<td>BSc in Public Health</td>
<td>February 8 - May 20, 2016</td>
<td>May 23 - July 8, 2016</td>
</tr>
<tr>
<td>BSc in Physiotherapy</td>
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<td>(15 weeks)</td>
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<td>MSc in Public Health</td>
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<td>(7 weeks)</td>
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<tr>
<td>MSc in Complex Rehabilitation</td>
<td></td>
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</tr>
</tbody>
</table>

Orientation meeting (planned): September 4., 2015. 10.00 am
CHAPTER 8

ACADEMIC PROGRAMME FOR CREDIT SYSTEM

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

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

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

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

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

The general principles of the credit system are the following:

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

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

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

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

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

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

The diploma work is worth 20 credits.

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

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

Although Physical Education and Summer Internship (controlled practices) are not recognized by credits, they have to be completed to get the final degree (see the rules outlined in the Information section about the conditions).
<table>
<thead>
<tr>
<th>Subjects</th>
<th>1st semester</th>
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<tbody>
<tr>
<td>Basic anatomy</td>
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<td>L 15 S 30 P 6</td>
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Prerequisites of taking the subject:

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### Prerequisites of taking the subject

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### Compulsory courses

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### Credits

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<td>Introduction to the general laboratory practice</td>
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<td>Inborn sociality-socialized individuality: a new concept</td>
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CHAPTER 9

ACADEMIC PROGRAMME FOR THE 1ST YEAR

Department of Behavioural Sciences, Faculty of Public Health

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

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<th>Lecture</th>
<th>Seminar</th>
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<tbody>
<tr>
<td>1st week</td>
<td>The meaning of bioethics and its relationship with traditional medical ethics</td>
<td>Interactive processing of the theme</td>
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<tr>
<td>2nd week</td>
<td>The nature of ethical decision making in clinical context</td>
<td>Interactive processing of the theme</td>
</tr>
<tr>
<td>3rd week</td>
<td>Paternalism and anti-paternalism in modern bioethics</td>
<td>Interactive processing of the theme</td>
</tr>
<tr>
<td>4th week</td>
<td>Patients’ rights (in Hungary and in other countries)</td>
<td>Interactive processing of the theme</td>
</tr>
<tr>
<td>5th week</td>
<td>The ethics of informed consent</td>
<td>Interactive processing of the theme</td>
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<tr>
<td>6th week</td>
<td>The ethical aspects of living with disabilities</td>
<td>Interactive processing of the theme</td>
</tr>
<tr>
<td>7th week</td>
<td>The epistemology and ethics of complementary medical therapies</td>
<td>Interactive processing of the theme</td>
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<tr>
<td>8th week</td>
<td>Consultation</td>
<td>Written examination</td>
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Requirements

Attendance and activity in the classes; usable understanding of the core theoretical knowledge; knowledge about the actual patients’ rights regulation. 
There will be opportunities to make individual presentations on relevant topics.

Subject: COMMUNICATION SKILLS  
Year, Semester: 1st year/1st semester  
Number of teaching hours: 
Lecture: 10  
Seminar: 20

<table>
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<td>1st week</td>
<td>The phenomena and mechanisms of face-to-face communication</td>
<td>The phenomena and mechanisms of face-to-face communication</td>
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<tr>
<td>2nd week</td>
<td>Approaches to effective communication</td>
<td>Approaches to effective communication</td>
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<tr>
<td>3rd week</td>
<td>Mechanisms of verbal and non–verbal communication, the role of congruence vs incongruence in implementation of public health programmes</td>
<td>Mechanisms of verbal and non–verbal communication, the role of congruence vs incongruence in implementation of public health programmes</td>
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<td>4th week</td>
<td>Verbal and non—verbal communication, the decisive role of their congruence vs incongruence during implementation of public health programmes</td>
<td>Verbal and non—verbal communication, the decisive role of their congruence vs incongruence during implementation of public health programmes</td>
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<tr>
<td>5th week</td>
<td>Empathy: development, mechanisms; main factors affecting its appearance</td>
<td>Empathy: development, mechanisms; main factors affecting its appearance</td>
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factors affecting its appearance

6th week:
Lecture: “Empathy lab”: the congruent message, self-experience
Seminar: “Empathy lab”: the congruent message, self-experience

7th week:
Lecture: Valid and convincing messages: a component analysis
Seminar: Valid and convincing messages: a component analysis

8th week:
Lecture: Mediated/indirect communication: composing written and electronic information, fine grained analysis of their effects
Seminar: Mediated/indirect communication: composing written and electronic information, fine grained analysis of their effects

9th week:
Lecture: The role and impact of media: their use in presentation and dissemination of public health issues as well as programmes
Seminar: The role and impact of media: their use in presentation and dissemination of public health issues as well as programmes

10th week:
Lecture: Conflict resolutions in the working place: theoretical and practical aspects

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

1st week:
Lecture: Competing naive and scientific views on man in psychology: a historical account

2nd week:
Lecture: Body and mind, brain and soul: conceptual developments from Descartes to Damasio

3rd week:
Lecture: Comparative psychology, evolutionary psychology

4th week:
Lecture: The nature/nurture debate and the concept of development in psychology

5th week:
Lecture: Theories of personality development ("inborn", "acquired", kinds of memory)

6th week:
Lecture: Perspectives on personality: the psychodynamic approach

7th week:
Lecture: Perspectives on personality: the behavioural approach

8th week:
Lecture: Perspectives on personality: the humanistic approach

9th week:
Lecture: Affective science/Cognitive science: an integrative account

10th week:
Lecture: Persons in relations: elements of social
### English Program Bulletin BSc in Public Health

#### Psychology

<table>
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<th>Week</th>
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<td>Lecture: Culture and behaviour – cultural psychology as applied in helping professions</td>
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<tr>
<td>12th week</td>
<td>Lecture: Conscious/subconscious and the “mirror neurons”</td>
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#### Requirements

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

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### Sociology

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

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<td>Lecture: Introduction to sociology and to the module</td>
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<tr>
<td>2nd week</td>
<td>Lecture: Definition of health; gender and health</td>
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<tr>
<td>3rd week</td>
<td>Lecture: Social class and health; ethnicity and health</td>
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<tr>
<td>4th week</td>
<td>Lecture: Families and changing family relationships</td>
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<tr>
<td>5th week</td>
<td>Lecture: Social forces, health and illness</td>
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<td>6th week</td>
<td>Lecture: The social distribution of illness</td>
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<tr>
<td>7th week</td>
<td>Lecture: The experience of illness, social contexts</td>
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<tr>
<td>8th week</td>
<td>Lecture: Disability and chronic illness</td>
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<tr>
<td>9th week</td>
<td>Lecture: Mental health and mental illness</td>
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<tr>
<td>10th week</td>
<td>Lecture: The profession of medicine</td>
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<tr>
<td>11th week</td>
<td>Lecture: Other health care providers</td>
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<td>12th week</td>
<td>Lecture: Patients and practitioners</td>
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<td>13th week</td>
<td>Lecture: Main scopes of social policy in general and in Hungary I</td>
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<td>14th week</td>
<td>Lecture: Main scopes of social policy in general and in Hungary II</td>
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<td>15th week</td>
<td>Lecture: Repetition, discussion</td>
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#### Requirements

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

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### Department of Foreign Languages

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

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

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

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

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

6th week:
Practical: Time expressions

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

8th week:
Practical: Mid-term test

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

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

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

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

13th week:
Practical: Revision

14th week:
Practical: End-term test

15th week:
Practical: Assessment and evaluation

Requirements

Requirements of the language courses

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:

<table>
<thead>
<tr>
<th>Final score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 59</td>
<td>fail (1)</td>
</tr>
<tr>
<td>60-69</td>
<td>pass (2)</td>
</tr>
<tr>
<td>70-79</td>
<td>satisfactory (3)</td>
</tr>
<tr>
<td>80-89</td>
<td>good (4)</td>
</tr>
<tr>
<td>90-100</td>
<td>excellent (5)</td>
</tr>
</tbody>
</table>

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: ilekt.med.unideb.hu.

Department of Internal Medicine

Subject: INTRODUCTION TO NURSING AND CLINICAL MEDICINE
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: 15
Practical: 15

1st week:
Lecture: The history of nursing and medicine. The physician’s behavior. The patient and health care staff relationship. The professional secrecy. The aim of the diagnosis and its different forms. Symptoms of diseases.

2nd week:
Lecture: System of definitions and philosophy of nursing; nursing theories; nursing models, basic human needs; assessment of the basic human needs; patient observation. Nursing protocols and standards. Rules of the nursing documentation; ethical and legal aspects of nursing.

3rd 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.

4th week:
Lecture: Defecation and micturition; hygienic needs; needs of communication and information. Needs of the safety; the unconscious patient; postoperative nursing tasks; aseptic and hygienic environment. How to take care of a dying patient.

5th week:
Practical: Scene of the nursing; structure of a hospital unit; observation of the patient; measurement of vital parameters. Nursing diagnosis and preparing of the nursing plan; maintenance of the patient’s personal hygiene; beds and bed-making; methods of bed-making; general and specific instructions for the bed-making.

6th week:
Practical: Patient medication; personal and objective conditions of feeding; artificial feedings; feeding with tube.

7th week:
Lecture: Tools for collecting urine and faeces; the planning and evaluation of the safety for patient.
Requirements

There are no requirements to take the Introduction to Nursing and Clinical Medicine course. Attendance of lectures is highly recommended, since the topics in examination cover the lectured topics. Attendance of practices is compulsory. If you missed more than 2 practices, the signature may be refused. To pass the practical examination is the indispensable condition for signature of Lecture Book.

Department of Medical Chemistry

Subject: CHEMISTRY
Year, Semester: 1st year/1st semester
Number of teaching hours:
Lecture: 46
Seminar: 24

1st week:

2nd week:

3rd week:
Lecture: The ionization of water. Ions in aqueous solution. Acids and bases. The law of chemical equilibrium.

4th week:
Lecture: Ions and ionic equilibria. Thermochemistry and thermodynamics.

5th week:

6th week:

Self Control Test

7th week:
Seminar: Aromatic and heteroaromatic compounds. The mechanism of nucleophilic substitution. Important alcohols and phenols.

8th week:
Seminar: Ethers. Sulfur containing organic compounds. Biologically important nitrogen containing compounds: dyes, sulfa drugs and alkaloids.

9th week:

10th week:

11th week:

12th week:
Seminar: Structure of DNA and RNA. Determination of DNA sequences.

15th week:
Lecture: 3rd Control test.

Requirements

The program consists of lectures and seminars. Attendance at seminars is recorded. Students should attend at least 80% of seminars.

Three control tests (general chemistry; organic chemistry and bioorganic chemistry) covering the topics of lectures and seminars will be written during the semester. Preparation for the tests and exams should be based on the official textbooks, lectures and seminars. Knowledge of the “minimal requirements” as published on the Department’s homepage is not sufficient for the successful completion of control tests/exams. Minimal requirements simply indicate the core knowledge, the lack of which (or any part of it) necessarily results in the student failing the test/exam.

Control tests and final exams will be assessed as follows*:

<table>
<thead>
<tr>
<th>Percentage (%)</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-49</td>
<td>fail (1)</td>
</tr>
<tr>
<td>50-62</td>
<td>pass (2)</td>
</tr>
<tr>
<td>63-74</td>
<td>satisfactory (3)</td>
</tr>
<tr>
<td>75-86</td>
<td>good (4)</td>
</tr>
<tr>
<td>87-100</td>
<td>excellent (5)</td>
</tr>
</tbody>
</table>

*Percentage values may slightly vary depending on the actual number of questions in the tests/exams.

The final exam is a written test composed of three modules: general chemistry; organic chemistry and bioorganic chemistry. Each module consists of multiple choice questions. For each module students may opt for either accepting the percentage of the corresponding control test or taking the exam test. The mark of the exam will be determined by calculating the average percentage values of the three modules (either from control tests or from exam tests). Thus the student may get full exemption from the final exam in case (s) he passed all three control tests and chooses to take the results of the control tests rather than sitting a final exam. The student can only pass the exam if the result of all three modules is at least a “pass (2)”. Students should declare till a given deadline whether or not they accept the control test result(s) otherwise the results will be cancelled. If the student chooses to use control test results, then (s)he should answer questions in the final written examination only from the missing module(s). Results of control tests and exam modules can be carried to B or C chance exams.

Students who have successfully passed the exam are allowed to take one improvement exam. In case students take the exam in the second semester at the end of an exam course, then all three modules of the exam must be taken and results of previous control tests or exam modules cannot be considered.
<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd week</td>
<td><strong>Practical</strong>: Data files, types of and connection between data storing files, operation with data files, directory structure. Software installation</td>
<td><strong>Practical</strong>: Application of spreadsheet software (EXCEL x.x). Design of sheets, data preparation</td>
</tr>
<tr>
<td>4th week</td>
<td><strong>Lecture</strong>: Networks: concept, setting, function, operation, application</td>
<td><strong>Practical</strong>: Entering data, calculations, functions</td>
</tr>
<tr>
<td>5th week</td>
<td><strong>Lecture</strong>: Text editing software (WORD x.x)</td>
<td><strong>Practical</strong>: Entering data, calculations, functions</td>
</tr>
<tr>
<td>6th week</td>
<td><strong>Practical</strong>: Networks: concept, setting, function, operation, application</td>
<td><strong>11th week</strong>: <strong>Practical</strong>: Preparation of diagrams. Formatting tables, diagrams, inserting them into Word documents</td>
</tr>
<tr>
<td>7th week</td>
<td><strong>Practical</strong>: Text editing software (WORD x.x)</td>
<td><strong>12th week</strong>: <strong>Practical</strong>: Computer graphics</td>
</tr>
<tr>
<td>8th week</td>
<td><strong>Lecture</strong>: Application of spreadsheet software (EXCEL x.x)</td>
<td><strong>13th week</strong>: <strong>Practical</strong>: Application of image editing software. (MS Power Point x.x) Presentation preparation</td>
</tr>
<tr>
<td>9th week</td>
<td><strong>Practical</strong>: Editing, formatting, saving, printing documents; creation of header, footer and footnotes</td>
<td><strong>14th week</strong>: <strong>Practical</strong>: Internet, electronic mailing</td>
</tr>
<tr>
<td>10th week</td>
<td><strong>Practical</strong>: Preparation of table of content and index. Cross-reference, hyperlink. Creation of table. Styles’, templates’ application; insertion of pictures, objects, into document; operations in big documents</td>
<td><strong>15th week</strong>: <strong>Practical</strong>: Internet, electronic mailing</td>
</tr>
<tr>
<td>11th week</td>
<td><strong>Practical</strong>: Preparing of table of content and index; cross-reference, hyperlink; creation of table; styles, template application; insertion of pictures, objects, into document; operations in big documents</td>
<td><strong>Practical</strong>: Compressing files; computer viruses</td>
</tr>
<tr>
<td>12th week</td>
<td><strong>Practical</strong>: Preparing of table of content and index; cross-reference, hyperlink; creation of table; styles, template application; insertion of pictures, objects, into document; operations in big documents</td>
<td><strong>Requirements</strong></td>
</tr>
</tbody>
</table>

The participation in practicals is compulsory; the maximum of acceptable absence is 2 occasions. Further requirement is the submission of the assays and home assignments. The students have to prepare an essay and to prepare homework for every topic. The average of the grades for assays and home assignments is the final grade. Exemption opportunity: If the student submit acceptable certification of the completion of a course on basics of informatics, and demonstrate the course description defined level of knowledge on computer usage, the student is not obliged to take part in the course. Participation in seminars and practices is obligatory. In the case of more than two absences signature is refused. During the course a practical mark will be given to the students on the base of classroom tasks, homeworks, and tests.

Subject: ECOLOGY  
Year, Semester: 1st year/1st semester  
Number of teaching hours:  
Lecture: 30  
Seminar: 15

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd week</td>
<td><strong>Lecture</strong>: Adaptation. Plant and animal adaptations to the environment. Tolerance. Homeostasis. The organism and its environment – part I. The physical environment (geology and soil; topography; light and temperature variation; climate and weather; catastrophes).</td>
<td><strong>Seminar</strong>: Thermoregulation, blood glucose homeostasis and osmoregulation.</td>
</tr>
</tbody>
</table>
3rd week:
Seminar: Relationships between species: Pollination of the common fig (Ficus carica–Blastophaga); African trypanosomes; Territory quality and reproductive success in birds.

4th week:
Seminar: Hemiparasitic and carnivorous plants.

5th week:
Seminar: Analysis of exponential and logistic growth curves by Populus 5.4 program.

6th week:
Seminar: Survival estimation for populations of marked individuals (MARK 3.1).

7th week:
Seminar: Estimation of population size by Popan 5.0 software.

8th week:
Seminar: Energy for Planet Earth.

9th week:
Seminar: Mountain sickness.

10th week:
Seminar: Nature conservation.

11th week:
Seminar: Symbiosis in the deep sea.

12th week:
Seminar: Development of the Earth’s atmosphere.

13th week:
Seminar: Bacteria as multicellular organisms.

14th week:
Seminar: Plant gene technology: social considerations.

15th week:
Seminar: Chemical communication in the social insects.
Requirements

Attendance of the lectures is recommended, but not compulsory. Students are required to attend the seminars and may not miss more than two seminars during the semester. In case a student misses more than 2 ones, the lecture book will not be signed. The attendance of the seminars will be recorded by seminar leaders.

Examination:

At the end of the semester students are required to take a Final Exam. The exam includes 25 multiple choice test questions and 5 short questions (30 x 2 points). The control tests, including the topics of the lectures and seminars, will given during the semester.

Tests will be assessed as follows:

<table>
<thead>
<tr>
<th>Percentage (%)</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-50</td>
<td>fail (1)</td>
</tr>
<tr>
<td>51-59</td>
<td>pass (2)</td>
</tr>
<tr>
<td>60-69</td>
<td>satisfactory (3)</td>
</tr>
<tr>
<td>70-79</td>
<td>good (4)</td>
</tr>
<tr>
<td>80-100</td>
<td>excellent (5)</td>
</tr>
</tbody>
</table>

The maximum score is 100% and the examination takes 60 minutes. The examination will be conducted in accordance with the Rules of Examination of the University.

Compulsory literature:

All the topics of lectures and seminars.

Division of Emergency Medicine

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

1st week:
Lecture: Definition of “first aid”; first aid levels; time factor; behaviour of first responder in the field; the emergency call

2nd week:
Lecture: Unconsciousness; airway obstruction; airway opening manoeuvres; Gábor manoeuvre

3rd week:
Lecture: Death as a process; determining of clinical death; the different oxygen demand of the brain depending on age; establishing unconsciousness or death; assessment of vital signs; assessment of breathing, circulation, pupils and muscle tone

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

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

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

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

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

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

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

11\textsuperscript{th} week:
\textbf{Practical}: Bandages for head, nose; ears, eyes; chin, body and extremities; practising the bandages (two hours)

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

\textbf{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.

\textbf{Department of Anatomy, Histology and Embryology}

\textbf{Subject: BASIC ANATOMY}
\textbf{Year, Semester: 1\textsuperscript{st} year/2\textsuperscript{nd} semester}
\textbf{Number of teaching hours:}
\textbf{Lecture: 30}
\textbf{Seminar: 15}
\textbf{Practical: 15}

1\textsuperscript{st} week:
\textbf{Lecture}: Covering and lining epithelia. Glandular epithelium. Connective tissues
\textbf{Seminar}: Histology of epithelial tissues

2\textsuperscript{nd} week:
\textbf{Seminar}: Histology Connective tissue

3\textsuperscript{rd} week:
\textbf{Seminar}: Histology Adipose tissue. Cartilage. Bone

4\textsuperscript{th} week:
\textbf{Seminar}: Histology: Bone formation. Muscle tissue

5\textsuperscript{th} week:
\textbf{Lecture}: Gastrulation, formation of the mesoderm. Differentiation of the ectoderm, mesoderm and entoderm, folding of the embryo.

6\textsuperscript{th} week:
Seminar: Histology of lymphatic organs

7th week:
Lecture: The upper limb. The lower limb. The skull and the back.
Seminar: Anatomy: Upper and lower limbs.
Practical: Upper and lower limbs. The bones, joints, muscles, blood vessels and nerves of the upper limb. Sites of venous injections and measurement of blood pressure. Bones, ligaments and membranes of the pelvis. The structure and function of the pelvic girdle. The bones, joints, muscles, blood vessels and nerves of the lower limb. Sites of muscular injections. Femoral canal.
Self Control Test

8th week:
Lecture: Anatomy of the head and neck. Nasal and oral cavities. The pharynx and the larynx
Seminar: Anatomy of the head, neck and back
Practical: Anatomy of the head, neck and back

9th week:
Lecture: The heart. The trachea, lungs and pleura.
Seminar: Anatomy of the heart and the respiratory system
Practical: Anatomy of the heart and the respiratory system

10th week:
Seminar: The histology of the respiratory system
Practical: The histology of the respiratory system

11th week:
Lecture: Development and general organization of the alimentary system. The oesophagus. The stomach. Small and large intestines
Seminar: The anatomy of the alimentary system.
Practical: The anatomy of the alimentary system. The structure and layers of the abdominal wall. The stomach, the duodenum, the liver, the pancreas and the spleen. Demonstration of some parts of the small and large intestines. The peritoneum. The abdominal aorta and its branches. Lymphatic drainage of the abdominal cavity. The diaphragm.

12th week:
Lecture: The pancreas. The liver. The system of the portal vein. The peritoneum. The retroperitoneum
Seminar: Histology of the alimentary system.

13th week:
Lecture: Neuroendocrine regulation. The hypothalamo-hypophyseal system. The pineal, thyroid, parathyroid and suprarenal glands. The kidney
Seminar: Histology of the endocrine system
Practical: Histology of the endocrine system

14th week:
Lecture: The urinary system. Male genital organs.
Seminar: Anatomy of the urogenital apparatus.
Practical: The anatomy of the urogenital apparatus.

15th week:
Lecture: Female genital organs. Development of the urogenital system
Seminar: Histology of the kidney and genital organs
Practical: Histology of the kidney and genital organs
Self Control Test

Requirements

Concerning attendance, the rules written in the Regulations Governing Admission, Education and Examinations of the University are valid. The presence in practices, seminars and lectures will be recorded. The head of the department may refuse to sign the Lecture Book if a student is absent more than twice from practices and seminars in one semester even
if he/she has an acceptable reason.
The program of the lectures, seminars and practices is written in the University Calendar.

Two midterm examinations (SCTs) will be held, one on the 7th week and on the 15th week. The exams cover the topics of lectures, seminars and practices of the second semester.

The midterm exams will be evaluated with points and the points of the two examinations will be added. Students with scores higher than 60% earn an exemption from the final examination with a mark that will be calculated on the basis of the overall performance on the two midterm examinations.

The end-semester exam is a written exam that covers the topics of lectures, seminars and practices of the semester. The exam will be evaluated with points that will be converted into final mark in the following way:

<table>
<thead>
<tr>
<th>Points Range</th>
<th>Description</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 59 %</td>
<td>fail (1)</td>
<td></td>
</tr>
<tr>
<td>50 – 62.5 %</td>
<td>pass (2)</td>
<td></td>
</tr>
<tr>
<td>63 – 75 %</td>
<td>satisfactory (3)</td>
<td></td>
</tr>
<tr>
<td>76 – 87.5 %</td>
<td>good (4)</td>
<td></td>
</tr>
<tr>
<td>88 – 100 %</td>
<td>excellent (5)</td>
<td></td>
</tr>
</tbody>
</table>

Registration for examinations: through the NEPTUN system.

Department of Behavioural Sciences, Faculty of Public Health

Subject: **BASICS OF PEDAGOGY**
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: 15

<table>
<thead>
<tr>
<th>1st week:</th>
<th>10th week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture:</td>
<td>Lecture:</td>
</tr>
<tr>
<td>Basic concepts of pedagogy</td>
<td>Edifying conduct</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2nd week:</th>
<th>11th week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture:</td>
<td>Lecture:</td>
</tr>
<tr>
<td>Principles of pedagogical activity</td>
<td>Scenes of pedagogical activity (family, school, boarding schools, etc.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3rd week:</th>
<th>12th week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture:</td>
<td>Lecture:</td>
</tr>
<tr>
<td>Theories and trends in pedagogy</td>
<td>Key participants and their communication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4th week:</th>
<th>13th week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture:</td>
<td>Lecture:</td>
</tr>
<tr>
<td>Elements of pedagogical influence</td>
<td>Consultation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5th week:</th>
<th>14th week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture:</td>
<td>Lecture:</td>
</tr>
<tr>
<td>Values and aimsProcess of pedagogical influence</td>
<td>Theoretical and practical issues of planning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6th week:</th>
<th>15th week:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture:</td>
<td>Lecture:</td>
</tr>
<tr>
<td>Fields of personality development</td>
<td>Pedagogical activity in health care</td>
</tr>
</tbody>
</table>

| 7th week: |  | Requirements |
|-----------| | Introduction, Based concept of pedagogy; Principles of pedagogical activity; Theories and trends in pedagogy; Elements of pedagogical influence; Process of pedagogical influence; Fields of personality development; Process of education; Process of teaching and learning; Edifying conduct; Methodology; Science of pedagogical activity; Key participants |

| 8th week: |  | |
|-----------| | |
| Lecture:  | | |
| Process of teaching and learning | |
Subject: HEALTH SOCIOLOGY
Year, Semester: 1st year/2nd semester
Number of teaching hours: Lecture: 30

1st week:

2nd week:

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

4th week:
Lecture: The social equilibrium of health and disease; biopsychosocial interpretation of disequilibrium. Patterns of health-, risk-, and disease behaviour through case studies.

5th week:

6th week:

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

8th week:

9th week:
Lecture: Organizational sociology of health care.

10th week:
Lecture: Health care secularization and medicalization.

11th week:

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

13th week:

14th week:

15th week:

Requirements

Introduction to sociology of health, basic sociological concepts, the sociological perspective; Society and changing patterns of disease, historical and cross regional perspective; Social determinants of health and disease; Sociology and public health, economy and health policy; The sociology of poverty- inequality and health; Social structure and health- gender and age; Social structure and health- ethnicity and religion; Case studies: morbidity and mortality in Nigeria, India, Hungary and Saudi Arabia from the sociological perspective; Health behaviour and illness behaviour, the case of chronic illness; The sociology of health care organisations; Informal health care, community care and self help; Deviance, sick role, anomie and stigma; Sociological research methods, measuring health outcomes, the anatomy of research articles.
Subject: HUNGARIAN LANGUAGE II.
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Practical: 30

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

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

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

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

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

6th week:
Practical: Word formation, infinitives

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

8th week:
Practical: Mid-term test
Self Control Test

9th week:
Practical: Irregular verbs

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

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

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

13th week:
Practical: Revision

14th week:
Practical: End-term test
Self Control Test

15th week:
Practical: Oral minimum exam. Assessment and evaluation

Requirements

Requirements of the language courses

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 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:

<table>
<thead>
<tr>
<th>Final score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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: ilekt.med.unideb.hu

Subject: MEDICAL LATIN
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Practical: 30

1st week:
**Practical:** Course organization and introduction. The Latin and Greek alphabet and pronunciation. Basic terminology of health sciences

2nd week:
**Practical:** Planes and directional terms in anatomical terminology

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

4th week:
**Practical:** Genitive case and the plural forms.

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

6th week:
**Practical:** Formation of adjectives

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

8th week:
**Practical:** Regions of the body
**Self Control Test**

9th week:
**Practical:** Joints

10th week:
**Practical:** Formation of complex adjectives

11th week:
**Practical:** Formation of nouns from verbs, Latin prefixes

12th week:
**Practical:** Muscles

13th week:
**Practical:** Latin and Greek numerals

14th week:
**Practical:** Revision. End-term test
**Self Control Test**

15th week:
**Practical:** Assessment and evaluation

Requirements of the language courses

Attendance

Language class attendance is compulsory. The maximum percentage of allowable absences is 10 % which is a total of 2 out of the 15 weekly classes. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students’ behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a “minus” (-). If
a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

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

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

Based on the final score the grades are given according to the following table:

<table>
<thead>
<tr>
<th>Final score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 59</td>
<td>fail (1)</td>
</tr>
<tr>
<td>60-69</td>
<td>pass (2)</td>
</tr>
<tr>
<td>70-79</td>
<td>satisfactory (3)</td>
</tr>
<tr>
<td>80-89</td>
<td>good (4)</td>
</tr>
<tr>
<td>90-100</td>
<td>excellent (5)</td>
</tr>
</tbody>
</table>

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: ilekt.med.unideb.hu

Department of Preventive Medicine, Faculty of Public Health

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

1st week:
**Lecture:** The role and importance of statistical analysis
**Practical:** Introduction to STATA

2nd week:
**Lecture:** Basic data management, types of variables
**Practical:** Data management 1

3rd week:
**Lecture:** Presenting data by measures and charts
**Practical:** Data management 2

4th week:
**Lecture:** Theoretical basics of interval estimation
**Practical:** Theoretical basics of interval estimation

5th week:
**Lecture:** Estimating the population mean
**Practical:** Estimating the population mean

6th week:
**Lecture:** Theoretical basics of hypothesis testing, statistical power, error of type 1 and 2
**Practical:** Theoretical basics of hypothesis testing, statistical power, error of type 1 and 2

7th week:
**Lecture:** Statistical inference by interval estimation and/or hypothesis testing
**Practical:** Z-test and one-sample t-test of mean

8th week:
**Lecture:** Comparing two means, two-sample t-test, paired t-test
**Practical:** Comparing two means, two-sample t-test, paired t-test

9th week:
**Lecture:** Comparing more means
**Practical:** One-way analysis of variance (ANOVA)

10th week:
**Lecture:** Probability, proportion, odds
**Practical:** Rank tests (Mann-Whitney-Wilcoxon, Kruskal-Wallis, Wilcoxon sign-rank test)

11th week:
**Lecture:** Estimating a probability
**Practical:** Estimating a proportion by exact binomial distribution and z-test

12th week:
**Lecture:** Comparing two independent proportions, the relationship with measures in epidemiology
**Practical:** Analyzing the association of two categorical variables
13th week:
Lecture: Simple linear regression
Practical: Simple linear regression

14th week:
Lecture: Multiple linear regression
Practical: Multiple linear regression

5th week:
Lecture: Survival tables, Kaplan-Meyer analysis, estimating incidence rates and ratios
Practical: The skeleton of human body; basic terms of osteology; names of bones; an etymological approach.
Word formation: adjectival suffixes

Requirements

Participation in seminars and practices is obligatory. In the case of more than two absences signature is refused. During the course a practical mark will be given to the students on the base of classroom tasks, homeworks, and tests.

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

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

2nd week:
Lecture: DNA replication and recombination

3rd week:
Lecture: Transmission genetics; genes and alleles; Mendel’s laws; genotype and phenotype

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

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

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

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

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

9th week:
Lecture: Introduction to genetic engineering; application of recombinant DNA technology in biotechnology and medicine

10th week:
Lecture: The chromosomal basis of heredity. Human cytogenetics; chromosomes; chromosome alterations

11th week:
Lecture: Molecular evolution and population genetics; the genetic basis of complex inheritance

12th week:
Lecture: Nucleic acid manipulations Polymerase chain reaction; Recombinant molecular biological techniques

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

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

15th week:
Lecture: Summary 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.

Subject: HEALTH (& LIBRARY) INFORMATICS I.
Year, Semester: 1st year/2nd semester
Number of teaching hours:
Lecture: 10
Practical: 20

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture/Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Information and data processing, The concept of information, Steps of information processing</td>
</tr>
<tr>
<td>2nd</td>
<td>Concept, techniques, advantages and disadvantages of coding, Updating of codes</td>
</tr>
<tr>
<td>3rd</td>
<td>Foundations of database management, data model, database definition</td>
</tr>
<tr>
<td>4th</td>
<td>The elements of data model, database operations</td>
</tr>
<tr>
<td>5th</td>
<td>Database management operations: MS Excel</td>
</tr>
<tr>
<td>6th</td>
<td>TEST</td>
</tr>
<tr>
<td></td>
<td>Self Control Test</td>
</tr>
<tr>
<td>7th</td>
<td>Database management, MS Access: defining keys, table design, layout, interconnection</td>
</tr>
<tr>
<td>8th</td>
<td>Management of forms</td>
</tr>
<tr>
<td>9th</td>
<td>Queries, reports</td>
</tr>
<tr>
<td>10th</td>
<td>IT networks, remote data processing, file transfer</td>
</tr>
<tr>
<td>11th</td>
<td>Using the Internet: search engines, E-mail</td>
</tr>
<tr>
<td>12th</td>
<td>Hungarian and international public health data sources via the Internet</td>
</tr>
<tr>
<td>13th</td>
<td>Hungarian and international public health data sources via the Internet</td>
</tr>
<tr>
<td>14th</td>
<td>Geographic information system (GIS) visualization methods, Application of GIS in public health</td>
</tr>
<tr>
<td>15th</td>
<td>TEST</td>
</tr>
<tr>
<td></td>
<td>Self Control Test</td>
</tr>
</tbody>
</table>

Requirements
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
How to write an academic paper: structure and main characteristics in an academic paper
Role and structure of the University Library of Debrecen
Search for information: Distinguish the different source types, evaluate the information quality.
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
How to search information in the library catalogue
Search in Medline (PubMed) and other relevant bibliographic databases
Identify and acquire full-text electronic documents
How to reference: preparing bibliographies, managing bibliographic data with reference management softwares
Health care basics. Health care in different countries. UN, WHO, worldwide organizations.
Structure and types of health care systems’. Patient, doctor, nurse. Medical tasks, medical data
Differences, measurements: collecting data, building spreadsheets, charts. Public Health worldwide – What to do, how to do?

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

1st week:
Lecture: Allocating public health in the medical and health sciences, evolution and development

2nd week:
Lecture: Public health: successes, failures and challenges in the 21st century

3rd week:
Lecture: Definition of health and its determinants

4th week:
Lecture: Relation between health and economy

5th week:
Lecture: Monitoring and analysing health state: options and methods

6th week:
Lecture: Theory and practice in health promotion

7th week:
Lecture: Levels of prevention

8th week:
Lecture: Screening programs

9th week:
Lecture: Global indicators of health state I.

10th week:
Lecture: Global indicators of health state II.

11th week:
Lecture: Public health in Hungary

12th week:
Lecture: Organizational structure for public health services in Hungary

13th week:
Lecture: Public health databases

14th week:
Lecture: North Karelia Program

15th week:
Lecture: National Public Health Program

Requirements
Last JM: A dictionary of epidemiology Oxford University Press, 2001

Division of Cell Biology

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

1st week:
Lecture: 1-2. Cell structure

2nd week:
Lecture: 3-4. Chemical Compounds of the Cell
### 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.

**Requirements** – Cell Biology for Physiotherapy BSc and for Public Health BSc

Cells are essential living units of the human body. The course aims understanding the fine structure and the overall functioning of cells. This knowledge is essential to those who deals with health issues at higher levels. Students get more accurate picture of human body functions invisible to naked eyes and the acquired knowledge allow the in-depth understanding of the various healthcare procedures and practices. In the semester a molecular level description of functions and their underpinning structure of the cell membrane, the cytoplasm, the nucleus and other cellular components is provided.

The curriculum is conveyed in the form of lectures. During the semester two absences are allowed.

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

| 3rd week: | Lecture: 5-6. Membranes, membrane transport |
| 4th week: | Lecture: 7-8. Signal Transduction |
| 5th week: | Lecture: 9-10. Vesicular Structures and Transport |
| 6th week: | Lecture: Self Control Test 1 |
| 7th week: | Lecture: 13-14. The Nucleus, DNA and Chromatin Structure |
| 8th week: | Lecture: 15-16. Cytoskeleton, Motility |
| 9th week: | Lecture: 17-18. Mitochondrion, Cell-Cell Contacts |
| 10th week: | Lecture: 19-20. Ion Channels, Membrane Potential, Calcium homeostasis |
| 11th week: | Lecture: 21-22. Cell Cycle, Meiosis, Mitosis |
| 12th week: | Lecture: self control test 2. |
| 13th week: | Lecture: 25-26. consultation |
| 14th week: | Lecture: pre-exam |
| 15th week: | Lecture: 29-30. consultation |
parts are denoted by T and A).
First self-control: if T≥50%, D1=T+A
Second self-control: if T<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.

CHAPTER 10

ACADEMIC PROGRAMME FOR THE 2ND YEAR

Department of Biochemistry and Molecular Biology

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

1st week:

2nd week:

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

4th week:

5th week:

6th week:

7th week:

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

9th week:
10th week:

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

12th week:

13th week:
**Lecture:** Nucleotides metabolism II. De novo synthesis of pyrimidine nucleotides. Regulation of pyrimidine nucleotide synthesis. Salvage pathways for the pyrimidines. Degradation of pyrimidine nucleotides.

14th week:

15th week:
**Lecture:** self-control test Week 9-14.

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

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**Requirements**

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

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

Attendance at the lectures is highly recommended. Attendance at seminars is obligatory. The signature of the Lecture Book is refused if a student is absent from more than 2 seminars. Seminars will be given by the lecturer (or his/her colleague) based on the previous week’s lecture material. Additional possibilities for consultation are provided by the lecturer on Thursdays between 15 and 16 pm. in her office.

Lecture presentations with short explanations are available on the web page of the department: (http://bmbi.med.unideb.hu). (Downloads/educational in English/Physiotherapists/Basic Biochemistry/2014)

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**Department of Foreign Languages**

**Subject:** **PROFESSIONAL HUNGARIAN I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

**Practical: 30**

1st week:
**Practical:** Revision, pretest

2nd week:
**Practical:** 1. lecke Bemutatkozás 1.

3rd week:
**Practical:** 1. lecke Bemutatkozás 2.

4th week:
**Practical:** 2. lecke Foglalkozások 1.
Requirements

Requirements of the language courses

Attendance

Language class attendance is compulsory. The maximum percentage of allowable absences is 10% which is a total of 2 out of the 15 weekly classes. Students arriving late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the final signature is refused and the student must repeat the course. Students are required to bring the textbook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. If students’ behaviour or conduct does not meet the requirements of active participation, the teacher may evaluate their participation with a “minus” (-). If a student has 5 minuses, the signature may be refused due to the lack of active participation in classes.

Testing, evaluation

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

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

Based on the final score the grades are given according to the following table:

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<tr>
<td>90-100</td>
<td>excellent (5)</td>
</tr>
</tbody>
</table>

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: ilekt.med.unideb.hu
### Department of Health Management and Quality Assurance, Faculty of Public Health

**Subject:** **INTRODUCTION TO LAW I.**  
**Year, Semester:** 2nd year/1st semester  
**Number of teaching hours:**  
**Lecture:** 30

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Concept of law, evolution of legal thinking</td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>Legal norm</td>
<td></td>
</tr>
<tr>
<td>3rd</td>
<td>Legal relationship</td>
<td></td>
</tr>
<tr>
<td>4th</td>
<td>Legal liability</td>
<td></td>
</tr>
<tr>
<td>5th</td>
<td>Law system</td>
<td></td>
</tr>
<tr>
<td>6th</td>
<td>Sources of law</td>
<td></td>
</tr>
<tr>
<td>7th</td>
<td>Force of Law</td>
<td></td>
</tr>
<tr>
<td>8th</td>
<td>Legal interpretation</td>
<td></td>
</tr>
</tbody>
</table>

**Requirements**  
Evolution of Legal Thinking; Brief History of Law; Ethics & Law; Concept of Law; Sources of Law; The Legal System(s); Fundamental Rights; Human Rights; The Right To Health and the United Nations; The World Health Organization; The Role of the State (formation, function, sovereignty); The Functions of Government; The Court System, Legal Disputes, Law Enforcement; The Role of the European Union

### Department of Medical Microbiology

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

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>The microbial word. Cell-mediated and antibody-mediated (humoral) immunity. Active and passive immunization</td>
<td>nonessential components. Exotoxins and endotoxins. Nontoxic virulence factors</td>
</tr>
<tr>
<td>2nd</td>
<td>Laboratory diagnosis of bacterial and viral infections. Sterilization and disinfection</td>
<td>4th</td>
</tr>
<tr>
<td>3rd</td>
<td>Structure of bacterial cells. Essential and</td>
<td>5th</td>
</tr>
</tbody>
</table>
6th week:
Lecture: Bacterial respiratory tract diseases. Skin and soft tissue infections caused by bacteria

7th week:
Lecture: Sexually transmitted bacterial diseases. Central nervous system diseases caused by bacteria

8th week:
Lecture: General mycology. Medically important fungi

9th week:
Lecture: The structure and classification of viruses. The pathogenesis of viral diseases

10th week:
Lecture: Respiratory tract infections caused by viruses

11th week:
Lecture: Agents of viral gastroenteritis. Hepatitis viruses

12th week:
Lecture: Agents of viral skin rash. Congenital virus infections

13th week:
Lecture: The protozoal diseases

14th week:
Lecture: Helminths. Ectoparasites

15th week:
Lecture: Consultation

Requirements

The students are required to attend the lectures.

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

Department of Physiology

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

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

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

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

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

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

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

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

8th week:
Lecture: General aspects of renal function; glomerular filtration; types of tubular transport processes; characteristic parameters of the renal function: glomerular filtration rate (GFR), filtration fraction (FF), clearance (C) and extraction coefficient (E)
Seminar: Detailed discussion and calculation of renal parameters

9th week:
Lecture: 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

10th week:
Lecture: Hormonal regulation; paracrine and endocrine mechanisms; hypothalamo-hypophysal system; neurohormones and tropic hormones
Seminar: General overview of the hormonal regulation; relationships of neural and humoral regulation

11th 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

12th 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 hyperglycaemia

13th 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

14th 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

15th 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 vegetative control of visceral functions

Requirements

Prerequisite: Anatomy II

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

For continuous updates on all education-related 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-semesters test reaches or higher than the passing limit (55%) and none of the individual tests' results are less than 40%. The mark based on the average score of mid-semester tests is calculated according to the following table: 0 – 54 % fail (1), 55 – 64 % pass (2), 65 – 74 % satisfactory (3), 75 – 84 % good (4), 85 – 100 % excellent (5). If one is not satisfied with this result, (s)he may participate in ESE during the examination period. A and B chances are written tests, C chance is oral exam.
Department of Preventive Medicine, Faculty of Public Health

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

1st week:
**Lecture:** History of epidemiology  
**Practical:** Measures of occurrence

2nd week:
**Lecture:** Measures of association  
**Practical:** John Snow on cholera epidemic

3rd week:
**Lecture:** Descriptive epidemiology  
**Practical:** Ecological and cross-sectional studies

4th week:
**Lecture:** Cohort studies  
**Practical:** Asbestos exposure and lung cancer development

5th week:
**Lecture:** Case-control studies  
**Practical:** Alcohol intake and breast cancer

6th week:
**Lecture:** Selection bias  
**Practical:** Precision of epidemiological studies

7th week:
**Lecture:** Measurement bias  
**Practical:** Evaluation of representativity

8th week:
**Lecture:** Confounding factors  
**Practical:** Effect of biased classification

9th week:
**Lecture:** Causality  
**Practical:** Effect modification

10th week:
**Lecture:** Experimental studies  
**Practical:** Clinical study to evaluate vaccine effectiveness

11th week:
**Lecture:** Critical appraisal  
**Practical:** Evaluation of manuscripts published in international journals

12th week:
**Lecture:** Study planning  
**Practical:** Evaluation of manuscripts published in Hungaria journal

13th week:
**Lecture:** Screening  
**Practical:** Evaluation of cervix cancer screening

14th week:
**Lecture:** Indicators of screening effectiveness  
**Practical:** Evaluation of cervix cancer screening II.

15th week:
**Lecture:** Role of epidemiology  
**Practical:** Needs for epidemiological research and the utilization of their results

**Requirements**

Participation in seminars and practices is obligatory. In the case of more than two absences signature is refused. During the course a practical mark will be given to the students on the base of classroom tasks, homeworks, and tests.

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Subject: **HEALTH (& LIBRARY) INFORMATICS II.**
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: 10
Practical: 20

1st week:
**Lecture:** The basics of nosology (classification of diseases)  

2nd week:
**Practical:** The most important classifications of health-care and public health:BNO, WHO, SNOWMED

3rd week:
**Practical:** The most important classifications of health-care and public health:BNO, WHO, SNOWMED
<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>4th</td>
<td>Health-care administration. Health-care information systems and databases</td>
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<tr>
<td>5th</td>
<td>Data-flow in health-care</td>
<td></td>
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<tr>
<td>6th</td>
<td>Primary care, specialty care, hospital, public health information systems</td>
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<tr>
<td>7th</td>
<td>Library information systems</td>
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</tr>
<tr>
<td>8th</td>
<td>TEST</td>
<td>Self Control Test</td>
</tr>
<tr>
<td>9th</td>
<td>Some use of library in formationsystemdetails: MEDLINE, PUBMED, CD-ROM, and multimedia systems</td>
<td></td>
</tr>
<tr>
<td>10th</td>
<td>Information systems in public health, Traditional</td>
<td></td>
</tr>
<tr>
<td>11th</td>
<td>Traditional sources of information, studies and databases of public health</td>
<td></td>
</tr>
<tr>
<td>12th</td>
<td>Electronic sources of information, studies and databases of public health</td>
<td></td>
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<tr>
<td>13th</td>
<td>The issues of privacy, legal and ethical rules, Basics of Cryptography</td>
<td></td>
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<tr>
<td>14th</td>
<td>Physical and logical techniques and solutions of the protection of IT systems</td>
<td></td>
</tr>
<tr>
<td>15th</td>
<td>TEST</td>
<td>Self Control Test</td>
</tr>
</tbody>
</table>

**Requirements**

- 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
- How to write an academic paper: structure and main characteristics in an academic paper
- Role and structure of the University Library of Debrecen.
- Search for information: Distinguish the different source types, evaluate the information quality.
- 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
- How to search information in the library catalogue
- Search in Medline (PubMed) and other relevant bibliographic databases
- Identify and acquire full-text electronic documents
- How to reference: preparing bibliographies, managing bibliographic data with reference management softwares
- Health care basics. Health care in different countries. UN, WHO, worldwide organizations.
- Structure and types of health care systems'. Patient, doctor, nurse. Medical tasks, medical data
- Differences, measurements: collecting data, building spreadsheets, charts. Public Health worldwide – What to do, how to do?

**Subject:** PUBLIC HEALTH MEDICINE I.

- Year, Semester: 2nd year/1st semester
- Number of teaching hours:
  - Lecture: 30
  - Practical: 30

**1st week:**
- Lecture: Clinical diagnosis
- History, physical examination, investigations
- Laboratory diagnosis, Imaging techniques, Functional tests

**2nd week:**
- Lecture: Diseases of the circulatory system
- Ischaemic heart disease, AMI, Hypertension and its complications, Thrombo-embolic diseases, Stroke

**3rd week:**
- Lecture: Haematological diseases
- Anaemia, myeloproliferative diseases
4th week:
Lecture: NeoplasiaBreast, lung and throat cancers, Colorectal cancers, Cervical, uterine, and ovarian cancers, Stomach cancer, Prostate carcinoma, Cancers of the mouth, Kidney tumours, Scrotal tumours, Malignant haematologic diseases

5th week:
Lecture: Diseases of the digestive systemDiseases of the stomach. Diseases of the liver, gall bladder and pancreas

6th week:
Lecture: Metabolic diseasesDiabetes, Hyperlipidaemia, Gout, Porphyria

7th week:
Lecture: Diseases of the pulmonary systemBronchial asthma, Chronic obstructive pulmonary disease

8th week:
Lecture: Infectious diseasesAcute and chronic infectious diseases

9th week:
Lecture: Diseases of the musculoskeletal systemBones, joint and muscular diseases (with emphasis on osteoporosis)

10th week:
Lecture: Endocrinological diseases

11th week:
Lecture: Diseases of the kidney

12th week:
Lecture: Neurological diseases

13th week:
Lecture: PsychiatryPsychosis, schizophrenia, alcoholism, delirium.

14th week:
Lecture: Paediatric diseasesDental diseases

15th week:
Lecture: The fundamentals of surgeryThe operating theatre and surgical procedures

Requirements
Clinical diagnosis; Diseases of the circulatory system; Haematological diseases; Neoplasia; Diseases of the digestive system; Metabolic diseases; Diseases of the pulmonary system; Infectious diseases; Diseases of the musculoskeletal system; Endocrinological diseases; Diseases of the kidney; Neurological diseases; Psychiatry; Paediatric diseases; Dental diseases; The fundamentals of surgery

Department of Biochemistry and Molecular Biology

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

1st week:
Seminar: Introduction

2nd week:
Seminar: Biochemistry of liver, biotransformation

3rd week:
Seminar: Metabolism iron, hem

4th week:
Seminar: Biochemistry of ECM and blood clotting
Requirements

Compulsory reading: Lecture presentations with short explanations are available on the web page of the department: ()

Achievement during the semester will be evaluated in terms of points. During the semester points can be collected for the self-control test from the material of the lectures. Self control test 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 test. 50 percent is needed to get a passing mark, and the grade increases as shown above.

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

Prerequisites: Basic Biochemistry

Department of Foreign Languages

Subject: PROFESSIONAL HUNGARIAN II.
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Practical: 30

1st week:
Practical: Revision

2nd week:
Practical: Pretest

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

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

5th week:
Practical: 7. lecke Napirend

6th week:
Practical: 7. lecke Napirend

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

8th week:
Practical: 8. lecke Szabadidő

9th week:
Practical: 8. lecke Szabadidő

10th week:
Practical: 8. lecke Szabadidő

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

12th week:
Practical: 9. lecke Hol voltál tegnap?

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

14th week:
Practical: 10. lecke Mit csináltál tegnap?

15th week:
Practical: Revision. End-term test

16th week:
Practical: Evaluation
Requirements

Requirements of the language courses

Attendance

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

Testing, evaluation

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

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

Based on the final score the grades are given according to the following table:

<table>
<thead>
<tr>
<th>Final score</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 59</td>
<td>fail (1)</td>
</tr>
<tr>
<td>60-69</td>
<td>pass (2)</td>
</tr>
<tr>
<td>70-79</td>
<td>satisfactory (3)</td>
</tr>
<tr>
<td>80-89</td>
<td>good (4)</td>
</tr>
<tr>
<td>90-100</td>
<td>excellent (5)</td>
</tr>
</tbody>
</table>

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: ilekt.med.unideb.hu

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

Subject: INTRODUCTION TO LAW II.
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: 30

1st week:
Lecture: Constitutional system in Hungary

2nd week:
Lecture: Division of powers, parliament, government, president of the republic

3rd week:
Lecture: Electoral law in force

4th week:
Lecture: Powers and functions of governments

5th week:
Lecture: Judicial system in Hungary

6th week:
Lecture: Fundamental rights and duties in the Hungarian Constitution

7th week:
Lecture: System of legal disciplines; private law, criminal law, administrative law

8th week:
Lecture: Concept and practice of public administration
### ENGLISH PROGRAM BULLETIN BSC IN PUBLIC HEALTH

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>9th</td>
<td>The sources of administrative law</td>
<td></td>
</tr>
<tr>
<td>10th</td>
<td>Legislation and law enforcement in public administration</td>
<td></td>
</tr>
<tr>
<td>11th</td>
<td>General division of the state administration system, central state and local administrative bodies</td>
<td></td>
</tr>
<tr>
<td>12th</td>
<td>Principles of the state administrative procedure</td>
<td></td>
</tr>
</tbody>
</table>

### Requirements

Brief History of International Law; Development of International Law; Politics & Law; The subjects of International Law; International Treaties; International Organisations; The United Nations; Expert Bodies; International Court of Justice; International criminal courts and tribunals; Recognition & Territory; Use of Force by States; Settlement of disputes by peaceful means; The law of treaties

### Department of Preventive Medicine, Faculty of Public Health

Subject: **ENVIRONMENTAL HEALTH**
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: 30
Seminar: 26
Practical: 4

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Seminar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Scope of environmental health</td>
<td>The disaster of Seveso – case study</td>
</tr>
<tr>
<td>2nd</td>
<td>Introduction to toxicology</td>
<td>The London smog of December 1952 – case study</td>
</tr>
<tr>
<td>3rd</td>
<td>Air pollution and health</td>
<td>Environmental arsenic poisoning – case study</td>
</tr>
<tr>
<td>4th</td>
<td>Water pollution and health</td>
<td></td>
</tr>
<tr>
<td>5th</td>
<td>Impacts of soil contamination on human health</td>
<td>Environmental cadmium poisoning – case study</td>
</tr>
<tr>
<td>6th</td>
<td>Health effects of non-ionising radiation and electromagnetic fields</td>
<td>Mobile phones use and brain cancer risk</td>
</tr>
<tr>
<td>7th</td>
<td>Health effects of ionising radiation and radioactive substances</td>
<td></td>
</tr>
<tr>
<td>8th</td>
<td>Health effects of noise and vibration</td>
<td>Midterm test</td>
</tr>
<tr>
<td>9th</td>
<td>Food borne diseases, food poisoning</td>
<td></td>
</tr>
<tr>
<td>10th</td>
<td>Principles of occupational health</td>
<td>Chemical and microbiological examination of drinking water (laboratory practice for small group)</td>
</tr>
<tr>
<td>11th</td>
<td>Hazardous substances in the environment</td>
<td>Environmental PCB poisoning – case study</td>
</tr>
<tr>
<td>12th</td>
<td>Body defence against the adverse effects of environmental exposures</td>
<td>Environmental lead poisoning – case study</td>
</tr>
</tbody>
</table>
13th week:
Lecture: Health implications of waste and hazardous waste
Seminar: Chemical safety

14th week:
Lecture: Global environmental health problems
Seminar: Student presentations

15th week:
Lecture: Environmental justice and environmental health policy
Seminar: Summary of seminars

Requirements

Attendance of lectures is highly recommended. Attendance of the seminars and practices is obligatory. The academic adviser refuse to sign the lecture book if a student is absent more than two times from seminars (including practices) in the semester even if he/she has an acceptable excuse. Students should also perform a midterm test on the 8th week of the semester. There is no possibility to repeat this test during the semester. The mark of the midterm test will be included in the calculation of the final average mark of the subject. Students should hold a ten minutes power point presentation which will be graded and the mark will be included in the calculation of the final average mark of the subject.

Requirements for the end semester exam:
The end semester exam involves a written section covering the topics of all lectures, seminars and practices of the subject. The written exam consists of two parts and includes multiple choice test questions related to the topics of lectures, as well as seminars and practices. The final exam is assessed on the basis of the average of four marks (mark of the test related to the topics of lectures, mark of the test related to the topics of seminars and practices, mark of the midterm test, mark of the student presentation) and it is failed if any part of the written exam is graded unsatisfactory. Students should repeat only those section(s) of the exam that has/have been previously unsuccessful. In this case the final exam is graded according to the average of the passing marks obtained on the first and repeated exams.

Type of exam:
end semester exam

Prerequisites: completion of ecology and chemistry subjects

Subject: EPIDEMIOLOGY OF COMMUNICABLE AND NON-COMMUNICABLE DISEASES I.
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: 15
Seminar: 45

1st week:
Lecture: Introduction to the epidemiology of infectious diseases
Seminar: (2 hours): Editing data entry form using the Epi-Info software (Case Study)

2nd week:
Lecture: The spread of infectious diseases, indicators of measuring the infectivity
Seminar: (4 hours): Editing data entry form using the Epi-Info software 2 (case study), the dynamics of infection (Case Study)

3rd week:
Lecture: Outbreak curve
Seminar: (4 hours): Data entry and data management (case study)

4th week:
Seminar: (3 hours): Outbreak investigation - descriptive analysis (case study)

5th week:
Lecture: The basics of statistical inferenceThe basics of sample size calculation

6th week:
Lecture: Using analytical epidemiological studies in outbreak investigation
Seminar: (2 hours): Statistical power estimation using PS software (Case Study)

7th week:
Seminar: (4 hours): Outbreak investigation - analytical analysis (case study)

8th week:
Lecture: Stratified analysis
Seminar: (3 hours): Stratified analysis (case study)

9th week:
Lecture: Logistic regression
Seminar: (2 hours): Logistic regression (Case Study)

10th week:
Lecture: The practical aspects of the implementation of outbreak investigation
Seminar: (3 hours): The surveillance of infectious diseases

11th week:
Lecture: Surveillance of nosocomial of diseases
Seminar: Surveillance of nosocomial diseases

12th week:
Lecture: Epidemiology of respiratory infectious
Seminar: Monkey pox (Case Study)

13th week:
Lecture: Epidemiology of tuberculosis
Seminar: (2 hours): Epidemiology of tuberculosis in developed countries (case study)

14th week:
Lecture: Epidemiology of gastrointestinal diseases
Seminar: (3 hours): Hepatitis outbreak investigation (Case Study)

15th week:
Lecture: Epidemiology of HIV / AIDS
Seminar: Hepatitis outbreak investigation 2 (Case Study)

Requirements

Prerequisite subject: Basic Epidemiology.
Examination: During the semester the students will get practical grade for the homework assessments. 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. The mark of the final exam will be calculated on the basis of the average of the practice grade and the written exam.
Participation in seminars and practices is obligatory. In the case of more than two absences signature is refused. During the course a practical mark will be given to the students on the base of classroom tasks, homeworks, and tests.

Subject: PUBLIC HEALTH MEDICINE II
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: 30
Practical: 30

1st week:
Lecture: Clinical diagnosis
History, physical examination, investigations
Laboratory diagnosis, Imaging techniques, Functional tests

2nd week:
Lecture: Diseases of the circulatory system
Ischaemic heart disease, AMI, Hypertension and its complications,
Thrombo-embolic diseases, Stroke

3rd week:
Lecture: Haematological diseases
Anaemia, myeloproliferative diseases

4th week:
Lecture: Neoplasia
Breast, lung and throat cancers,
Colorectal cancers, Cervical, uterine, and ovarian cancers,
Stomach cancer, Prostate carcinoma, Cancers of the mouth,
Kidney tumours, Scrotal tumours, Malignant haematologic diseases

5th week:
Lecture: Diseases of the digestive system
Diseases of the stomach. Diseases of the liver, gall bladder and pancreas

6th week:
Lecture: Metabolic diseases
Diabetes, Hyperlipidaemia, Gout, Porphyria

7th week:
Lecture: Diseases of the pulmonary system
Bronchial asthma, Chronic obstructive pulmonary disease

8th week:
Lecture: Infectious diseases
Acute and chronic infectious diseases

9th week:
Lecture: Diseases of the musculoskeletal system
Bones, joint and muscular diseases (with emphasis on osteoporosis)

10th week:
Lecture: Endocrinological diseases

11th week:
Lecture: Diseases of the kidney

12th week:
Lecture: Neurological diseases
### Requirements
Clinical diagnosis; Diseases of the circulatory system; Haematological diseases; Neoplasia; Diseases of the digestive system; Metabolic diseases; Diseases of the pulmonary system; Infectious diseases; Diseases of the musculoskeletal system; Endocrinological diseases; Diseases of the kidney; Neurological diseases; Psychiatry; Paediatric diseases; Dental diseases; The fundamentals of surgery

### CHAPTER 11

**ACADEMIC PROGRAMME FOR THE 3RD YEAR**

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

**Subject:** HEALTH CARE LAW I.  
**Year, Semester:** 3rd year/1st semester  
**Number of teaching hours:** 30  
**Lecture:** 30

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st week</td>
<td>Development of medical officer service’s regulation</td>
</tr>
<tr>
<td>2nd week</td>
<td>Medical officer service in the state administration system</td>
</tr>
<tr>
<td>3rd week</td>
<td>Power and territorial system of the medical officer service</td>
</tr>
<tr>
<td>4th week</td>
<td>Population health management</td>
</tr>
<tr>
<td>5th week</td>
<td>Public health management</td>
</tr>
<tr>
<td>6th week</td>
<td>Environmental and settlement health management</td>
</tr>
<tr>
<td>7th week</td>
<td>Administrative tasks related to the deceased</td>
</tr>
<tr>
<td>8th week</td>
<td>Workplace aerosol exposure (dusts, fibers)</td>
</tr>
<tr>
<td>9th week</td>
<td>Control of the food chain</td>
</tr>
<tr>
<td>10th week</td>
<td>Rights and obligations of the food chain actors</td>
</tr>
<tr>
<td>11th week</td>
<td>State’s responsibility in the food chain control</td>
</tr>
<tr>
<td>12th week</td>
<td>Administration tasks of the food chain supervisory authority</td>
</tr>
<tr>
<td>13th week</td>
<td>Occupational health management</td>
</tr>
<tr>
<td>14th week</td>
<td>Administration and coordination tasks of the health administration bodies</td>
</tr>
</tbody>
</table>

**Requirements**

Year, semester: 3rd year/1st semester  
Number of teaching hours: 30  
Lecture: 30  
Department of Immunology

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

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st week</td>
<td>Tissues/organs of the immune system.</td>
</tr>
<tr>
<td>2nd week</td>
<td>Immune cells. Innate and adaptive arms of the immune system.</td>
</tr>
<tr>
<td>3rd week</td>
<td>Innate immune system; recognition and elimination of pathogens.</td>
</tr>
<tr>
<td>4th week</td>
<td>Antigen presentation.</td>
</tr>
<tr>
<td>5th week</td>
<td>Immunoglobulins; structure and functions.</td>
</tr>
<tr>
<td>6th week</td>
<td>B cells; activation and effector functions.</td>
</tr>
<tr>
<td>7th week</td>
<td>T cells; types and functions.</td>
</tr>
<tr>
<td>8th week</td>
<td>The collaborations between innate and adaptive immunity. Antibody types and functions.</td>
</tr>
<tr>
<td>9th week</td>
<td>Memory. Passive and active immunization.</td>
</tr>
<tr>
<td>10th week</td>
<td>The organization of the immune system.</td>
</tr>
<tr>
<td>11th week</td>
<td>Hypersensitivity reactions.</td>
</tr>
<tr>
<td>12th week</td>
<td>Autoimmunity. Immunological aspects in geriatrics. Rheumatology.</td>
</tr>
<tr>
<td>14th week</td>
<td>Modulation of the immune system with diet and exercise.</td>
</tr>
<tr>
<td>15th week</td>
<td>Consultation.</td>
</tr>
</tbody>
</table>

**Requirements**

Participation in 30% of the lectures is obligatory. The obligatory lectures will be marked during week 1. The semester is closed by an end-semester exam (ESE). The written exam consists of test and essay questions. The minimum requirement for the written exam is 51%.

Department of Pharmacology and Pharmacotherapy

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

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st week</td>
<td>Introduction to general pharmacology: pharmacokinetics and pharmacodynamics</td>
</tr>
<tr>
<td>2nd week</td>
<td>Pharmacology of autonomic nervous system: drugs acting on cholinergic and adrenergic receptors</td>
</tr>
<tr>
<td>3rd week</td>
<td>Pharmacology of central nervous system: antidepressants, antiepileptics</td>
</tr>
<tr>
<td>4th week</td>
<td>Pharmacology of central nervous system:</td>
</tr>
</tbody>
</table>
antiparkinsonian drugs, anti-psychotics

<table>
<thead>
<tr>
<th>5th week:</th>
<th>Lecture: Pharmacology of drugs of abuse: narcotics, stimulants</th>
</tr>
</thead>
<tbody>
<tr>
<td>6th week:</td>
<td>Lecture: Pharmacology of drugs of abuse: depressants, cannabis, hallucinogens</td>
</tr>
<tr>
<td>7th week:</td>
<td>Lecture: Inhalants, steroids</td>
</tr>
<tr>
<td>8th week:</td>
<td>Lecture: Cardiovascular pharmacology: antianginal, anti-arrhythmic drugs</td>
</tr>
<tr>
<td>9th week:</td>
<td>Lecture: Cardiovascular pharmacology: antihypertensive, antihyperlipidaemic drugs</td>
</tr>
</tbody>
</table>

| 10th week: | Lecture: Drugs used in congestive heart failure |
| 11th week: | Lecture: Respiratory pharmacology: antiasthmatics |
| 12th week: | Lecture: Pharmacology of gastrointestinal system |
| 13th week: | Lecture: Antimicrobial and antiviral chemotherapy |
| 14th week: | Lecture: Antitumor agents |
| 15th week: | Lecture: Consultation |

Requirements

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: BASICS IN HEALTH PROMOTION AND POLICY

Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: 30
Practical: 15

1st week:
Lecture: Basics and values in policy. Policy networks and subsystems.

2nd week:
Lecture: Values, principles and objectives of health policy. Stakeholders and stewardship. The relationship between health, social and economic policy.

3rd week:
Lecture: The policy process. Health policy analysis.

4th week:

5th week:
Lecture: Goals and functions of health care systems. Preventive and curative care.

6th week:
Lecture: The characteristics of health care market. Need, demand and supply of health services.

7th week:

8th week:

9th week:

10th week:
Lecture: The international arena of public health policy.

11th week:
Lecture: The concept of health promotion. Political decisions in health.

12th week:
Lecture: Defining and measuring health in health care and
health promotion.

13th week:
Policy measures to prevent smoking and drug abuse.

14th week:
Lecture: Individual and structural determinants of health 2.
Policy measures to influence nutrition.

15th week:
Lecture: National and international infrastructure of health promotion.

Requirements

Attendance of the lectures is highly recommended.
Attendance of the seminars is obligatory and is a precondition of signing the lecture book, maximum two absences are allowed in the semester. Active participation in problem based learning exercises is required.

Examination:
Type of the exam: end-of-semester examination.
Form of exam: written exam (covers the topics of all lectures and seminars and the required literature).
Evaluation: Fail /pass on a scale 1-5.

Subject: EPIDEMIOLOGY OF COMMUNICABLE AND NON-COMMUNICABLE DISEASES II.
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: 15
Seminar: 30

1st week:
Lecture: Vaccinations, Vaccines
Seminar: Vaccine efficacy

2nd week:
Lecture: Emerging and re-emerging infectious diseasesThe world health report
Seminar: Epidemiology of HIV / AIDS

3rd week:
Lecture: Levels of prevention, preventive strategies
Seminar: The advantages and disadvantages of different preventive strategies

4th week:
Lecture: The theoretical basis for screening programs
Seminar: Screening programs

5th week:
Lecture: The screening systemsPublic Health Databases
Seminar: HFA database

6th week:
Lecture: Literature research
Seminar: HFA database; Literature Research

7th week:
Lecture: Evidence-based health policy
Seminar: Literature search using PubMed

8th week:
Lecture: Study Writing
Seminar: Literature search using PubMed (2)

9th week:
Lecture: Epidemiology and prevention of cardiovascular diseases
Seminar: Study design- a measurement the frequency of a non-communicable disease - a theoretical framework

10th week:
Lecture: Epidemiology of metabolic disorders
Seminar: Study design- a measurement the frequency of a non-communicable disease

11th week:
Lecture: Epidemiology of liver and gastrointestinal diseases
Seminar: Study design- a measurement the frequency of a non-communicable disease

12th week:
Lecture: Cancer Epidemiology and Prevention
Seminar: Epidemiology of cancer

13th week:
Lecture: Epidemiology of chronic respiratory diseases
Seminar: The epidemiology of cancer (2)

14th week:
Lecture: The epidemiology and prevention of accidentsBasics of health economics

15th week:
Lecture: Epidemiology and prevention of musculoskeletal disorders
Seminar: Basics of health economics
Requirements

Participation in the seminars is mandatory. If there are more than two absences, the index might not be signed.
Prerequisite subject: Epidemiology of communicable and non-communicable diseases I.
Examination:
During the semester the students will get practical grade for the assessment of homework. 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. The mark of the final exam will be calculated on the basis of the average of the practice grade and the written exam.

Subject: OCCUPATIONAL HEALTH
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: 30
Seminar: 30

1st week:
Lecture: Introduction to occupational health; the subject (occupational medicine and occupational hygiene)
Seminar: Organizational structure and legal background of occupational health

2nd week:
Lecture: Physiology of work (stress and strain), workability. Workplace effects (hazard and risk)
Seminar: Criteria, classification and reporting of occupational diseases

3rd week:
Lecture: Levels of workplace prevention, environmental and biological monitoring
Seminar: Occupational exposure limits

4th week:
Lecture: Physical workplace hazards (noise, vibration, temperature, pressure)
Seminar: Measurement, evaluation and prevention of workplace noise and heat exposure

5th week:
Lecture: Physical workplace hazards (ionizing and non-ionizing radiations)
Seminar: Measurement, evaluation and prevention of workplace exposure to radiations

6th week:
Lecture: Chemical workplace hazards (metals, gasses)
Seminar: Chemical safety

7th week:
Lecture: Chemical workplace hazards solvents, plastics, pesticides
Seminar: Measurement, evaluation and prevention of workplace chemical exposures

8th week:
Lecture: Workplace aerosol exposure (dusts, fibers)
Seminar: Measurement, evaluation and prevention of workplace dust and fiber exposures

9th week:
Lecture: Chemical workplace hazards (mutagens, carcinogens, teratogens)
Seminar: Mutagenecity tests (laboratory practical)

10th week:
Lecture: Biological workplace hazards
Seminar: Measurement, evaluation and prevention of workplace biological exposures

11th week:
Lecture: Mechanical (ergonomic) workplace hazards, occupational accidents
Seminar: Occupational safety

12th week:
Lecture: Psychosocial effects at workplaces
Seminar: Workplace communication (situation practice)

13th week:
Lecture: Occupational health/occupational hygiene inspection, comprehensive evaluation of work environment, occupational risk assessment
Seminar: Criteria for making occupational hygiene reports

14th week:
Lecture: Occupational health evaluation of industrial processes I.
Seminar: Workplace visit

15th week:
Lecture: Occupational health evaluation of industrial processes II.
Seminar: Discussion of the workplace visit (student presentations)
Requirements

To register for the subject, students need a successful exam in chemistry, basic epidemiology and environmental health. Attendance of seminars and practices is obligatory, not more than 2 absences are required for the signature of lecture book.

Examination:
The subject ends with a written exam assessing knowledge taught on lectures and seminars. To pass, students are required to give correct answers to at least 50% of the 10 multiple choice and 10 short open questions. “B” and upgrading exams are held in oral.

Subject: PUBLIC HEALTH MEDICINE III.
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Lecture: 30
Practical: 30

1st week:
Lecture: Clinical diagnosis; History, physical examination, investigations; Laboratory diagnosis, Imaging techniques, Functional tests

2nd week:
Lecture: Diseases of the circulatory system; Ischaemic heart disease, AMI, Hypertension and its complications, Thrombo-embolic diseases, Stroke

3rd week:
Lecture: Haematological diseases; Anaemia, myeloproliferative diseases

4th week:
Lecture: Neoplasia; Breast, lung and throat cancers, Colorectal cancers, Cervical, uterine, and ovarian cancers, Stomach cancer, Prostate carcinoma, Cancers of the mouth, Kidney tumours, Scrotal tumours, Malignant haematologic diseases

5th week:
Lecture: Diseases of the digestive system; Diseases of the stomach. Diseases of the liver, gall bladder and pancreas

6th week:
Lecture: Metabolic diseases; Diabetes, Hyperlipidaemia, Gout, Porphyria

7th week:
Lecture: Diseases of the pulmonary system; Bronchial asthma, Chronic obstructive pulmonary disease

8th week:
Lecture: Infectious diseases; Acute and chronic infectious diseases

9th week:
Lecture: Diseases of the musculoskeletal system; Bones, joint and muscular diseases (with emphasis on osteoprosis)

10th week:
Lecture: Endocrinological diseases

11th week:
Lecture: Diseases of the kidney

12th week:
Lecture: Neurological diseases

13th week:
Lecture: Psychiatry; Psychosis, schizophrenia, alcoholism, delirium

14th week:
Lecture: Paediatric diseases; Dental diseases

15th week:
Lecture: The fundamentals of surgery; The operating theatre and surgical procedures

Requirements

Clinical diagnosis; Diseases of the circulatory system; Haematological diseases; Neoplasia; Diseases of the digestive system; Metabolic diseases; Diseases of the pulmonary system; Infectious diseases; Diseases of the musculoskeletal system; Endocrinological diseases; Diseases of the kidney; Neurological diseases; Psychiatry; Paediatric diseases; Dental diseases; The fundamentals of surgery
## Department of Family and Occupational Medicine, Faculty of Public Health

### Subject: CHILD AND ADOLESCENT HEALTH

**Year, Semester:** 3rd year/2nd semester  
**Number of teaching hours:** Lecture: 30

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st week</td>
<td>Lecture: Child health services: organisation and place in the health care system</td>
</tr>
<tr>
<td>2nd week</td>
<td>Lecture: Child health services: tasks and activities</td>
</tr>
<tr>
<td>3rd week</td>
<td>Lecture: Demographic, mortality and morbidity data regarding child health care</td>
</tr>
<tr>
<td>4th week</td>
<td>Lecture: Development of healthy infants, children and adolescents</td>
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<tr>
<td>5th week</td>
<td>Lecture: Primary prevention in infant age, childhood and adolescence</td>
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<tr>
<td>6th week</td>
<td>Lecture: Childhood surveillance</td>
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<tr>
<td>7th week</td>
<td>Lecture: Continuous care of children with chronic diseases</td>
</tr>
<tr>
<td>8th week</td>
<td>Lecture: Complexity of health promotion: health education, health protection and prevention in childhood</td>
</tr>
<tr>
<td>9th week</td>
<td>Lecture: Care of infants, children and adolescents with special needs</td>
</tr>
<tr>
<td>10th week</td>
<td>Lecture: Infant feeding and nutrition in childhood and adolescence</td>
</tr>
<tr>
<td>11th week</td>
<td>Lecture: Physical activity and physical education</td>
</tr>
<tr>
<td>12th week</td>
<td>Lecture: Obesity and its consequences in childhood and adolescence</td>
</tr>
<tr>
<td>13th week</td>
<td>Lecture: Smoking, alcohol and drug abuse in childhood and adolescence</td>
</tr>
<tr>
<td>14th week</td>
<td>Lecture: Puberty, its disturbances and adolescents’ sexuality</td>
</tr>
<tr>
<td>15th week</td>
<td>Lecture: Psychological problems and harmful behaviours in adolescence</td>
</tr>
</tbody>
</table>

### Requirements

- Attendance of lectures
- Examination: Oral exam, colloquium

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

### Subject: HEALTH CARE LAW II

**Year, Semester:** 3rd year/2nd semester  
**Number of teaching hours:** Lecture: 30

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st week</td>
<td>Lecture: Principles of health care law</td>
</tr>
</tbody>
</table>
2nd week:
Lecture: System of health services

3rd week:
Lecture: Health care system, primary care, outpatient and inpatient care, other health services

4th week:
Lecture: Professional requirements of health services

5th week:
Lecture: Health care organization and management

6th week:
Lecture: Public health

7th week:
Lecture: Health promotion, family and women’s care, youth health care, sports health care, environment and settlement health, food and nutrition health

8th week:
Lecture: Radiation Health, occupational health, infectious disease control

9th week:
Lecture: Patients’ rights and obligations

10th week:
Lecture: Rights and duties of health care workers

11th week:
Lecture: Medical research on humans

12th week:
Lecture: Special procedures related to human reproduction, research involving human embryos and gametes, sterilization

13th week:
Lecture: Treatment and care of psychiatric patients

14th week:
Lecture: Organ and tissue transplantation, blood provision

15th week:
Lecture: Provisions related to the deceased, disaster medical care

Requirements

Year, semester: 3rd year/2nd semester
Number of teaching hours: 30
Lecture: 30

Department of Preventive Medicine, Faculty of Public Health

Subject: BASICS OF QUALITY ASSURANCE
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: 15
Seminar: 15

1st week:
Lecture: Importance of quality management in healthcare, general definitions of quality, evolution of quality thinking

2nd week:
Seminar: What quality means to me?

3rd week:
Lecture: Dimensions and structure of quality in healthcare, definition of criteria, standard, guideline, protocol, indicator

4th week:
Seminar: Discussion of Donabedian model

5th week:
Lecture: Assessment of quality of healthcare services, types of audit

6th week:
Seminar: Measurement of quality of healthcare by Donabedian model

7th week:
Lecture: Quality problems in healthcare

8th week:
Seminar: Prioritising quality problems

9th week:
Lecture: Quality improvement and quality tools

10th week:
Seminar: Planning a quality improvement project

11th week:
Lecture: Importance of clinical effectiveness in the
improvement of healthcare service; Steps of clinical effectiveness in the improvement of healthcare service

12th week:
Lecture: Clinical audit

13th week:
Seminar: Planning of a clinical audit projects by teams

14th week:
Seminar: Presentation and discussion of quality improvement projects 1.

15th week:
Seminar: Presentation and discussion of quality improvement projects 2.

Requirements

Regular attending for the course
Presentation of a quality improvement project
Examination:
Written form

Subject: FIELD AND LABORATORY PRACTICE I.
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Practical: 180

Requirements
This course aims to equip students with the knowledge and skills to make valuable contributions to environmental health, food and nutrition, child and youth health, radiation and chemical safety, as well as communicable diseases, health promotion and health administration and management.

The course focuses on: The health status of the population, risk factors and the analysis of them, risk assessment and prevention;
Effective public health rules: in the fields of enviromental health, radiation, chemical safety, food and nutrition;
Control of communicable diseases;
Laboratory methods of preventive medicine;
Health promotion activities to prevent diseases;
Health administration tasks;
Supervision of nursing, childhood care and pharmaceutics

Subject: PUBLIC HEALTH MEDICINE IV.
Year, Semester: 3rd year/2nd semester
Number of teaching hours:
Lecture: 30
Practical: 30

1st week:
Lecture: Clinical diagnosis
History, physical examination, investigations
Laboratory diagnosis, Imaging techniques, Functional tests

2nd week:
Lecture: Diseases of the circulatory system
Schaemic heart disease, AMI, Hypertension and its complications, Thrombo-embolic diseases, Stroke

3rd week:
Lecture: Haematological diseases
Anaemia, myeloproliferative diseases

4th week:
Lecture: Neoplasia
Breast, lung and throat cancers, Colorectal cancers, Cervical, uterine, and ovarian cancers, Stomach cancer, Prostate carcinoma, Cancers of the mouth, Kidney tumours, Scrotal tumours, Malignant haematologic diseases
5th week:
Lecture: Diseases of the digestive system. Diseases of the stomach. Diseases of the liver, gall bladder and pancreas

6th week:
Lecture: Metabolic diseases. Diabetes, Hyperlipidaemia, Gout, Porphyria

7th week:
Lecture: Diseases of the pulmonary system. Bronchial asthma, Chronic obstructive pulmonary disease

8th week:
Lecture: Infectious diseases. Acute and chronic infectious diseases

9th week:
Lecture: Diseases of the musculoskeletal system. Bones, joint and muscular diseases (with emphasis on osteoporosis)

10th week:
Lecture: Endocrinological diseases

11th week:
Lecture: Diseases of the kidney

12th week:
Lecture: Neurological diseases

13th week:
Lecture: Psychiatry. Psychosis, schizophrenia, alcoholism, delirium

14th week:
Lecture: Paediatric diseases. Dental diseases

15th week:
Lecture: The fundamentals of surgery. The operating theatre and surgical procedures

Requirements
Clinical diagnosis; Diseases of the circulatory system; Haematological diseases; Neoplasia; Diseases of the digestive system; Metabolic diseases; Diseases of the pulmonary system; Infectious diseases; Diseases of the musculoskeletal system; Endocrinological diseases; Diseases of the kidney; Neurological diseases; Psychiatry; Paediatric diseases; Dental diseases; The fundamentals of surgery

CHAPTER 12
ACADEMIC PROGRAMME FOR THE 4TH YEAR

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

Subject: HEALTH CARE LAW III.
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: 30

1st week:
Lecture: Evolution of the welfare state and social service systems

2nd week:
Lecture: Health care as part of the social system

3rd week:
Lecture: Principles of the Social Security Act, system of benefits

4th week:
Lecture: Institutional social care and management

5th week:
Lecture: European Social Charter and its Rules

6th week:
Lecture: The evolution of social insurance systems

7th week:
Lecture: Forms of social insurance: health insurance; pension insurance

8th week:
Lecture: Accident insurance benefits in Hungary and in Western Europe

9th week:
Lecture: Health insurance benefits, the duration of the incapacity benefits (sick pay)

10th week:
Lecture: Health insurance benefits provided in nature
11th week:  
Lecture: System of maternity benefits: maternity leave, childcare benefits, family support system, principles and concepts

12th week:  
Lecture: Pension insurance systems in Western Europe

13th week:  
Lecture: Forms of personal pension schemes, special rules of old-age and invalidity pension

14th week:  
Lecture: Forms of dependent’s pension schemes, the rules for Western European institutions

15th week:  
Lecture: Special rules of private pension funds, principles and schemes

Requirements

Year, semester: 4th year/1st semester  
Number of teaching hours: 30  
Lecture: 30  

Department of Preventive Medicine, Faculty of Public Health

Subject: FIELD AND LABORATORY PRACTICE II.  
Year, Semester: 4th year/1st semester  
Number of teaching hours:  
Practical: 180

Requirements

This course aims to equip students with the knowledge and skills to make valuable contributions to environmental health, food and nutrition, child and youth health, radiation and chemical safety, as well as communicable diseases, health promotion and health administration and management.

The course focuses on: The health status of the population, risk factors and the analysis of them, risk assessment and prevention;  
Effective public health rules: in the fields of enviromental health, radiation, chemical safety, food and nutrition;  
Control of communicable diseases;  
Laboratory methods of preventive medicine;  
Health promotion activities to prevent diseases;  
Health administration tasks;  
Supervision of nursing, childhood care and pharmaceutics

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

1st week:  
Lecture: History of public health and health promotion

2nd week:  
Lecture: International infrastructure of health promotion

3rd week:  
Lecture: Basics of communication

4th week:  
Lecture: Life course perspective of health: childhood as determinant of health

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5th week: Lecture: Integrative model of health
6th week: Lecture: Self-knowledge, professional self-reflexion
7th week: Lecture: Changing health behavior 1: theories of behavior change
8th week: Lecture: Changing health behavior 2: health education by written material
9th week: Lecture: Changing health behavior 3: oral health education
10th week: Lecture: Community development

11th week: Lecture: Changing community behavior 1: Basics of project planning
12th week: Lecture: Changing community behavior 2: Practical: project planning
13th week: Lecture: Public health problems of disadvantaged groups
14th week: Lecture: Evidence-based policies to promote health in populations
15th week: Lecture: Presenting project plans, feedback session

Requirements
Attendance of the lectures is highly recommended. Attendance of the seminars and practicals is obligatory and is a precondition of signing the lecture book. Maximum two absences are allowed in the semester, but absences from practicals must be made up for.
Examination:
Type of the exam: end-of-semester examination.
Form of exam:
Written exam (covers the topics of all lectures and seminars and the required literature). Evaluation: Fail / pass on a scale 1-5.
Individual oral presentation on a preselected topic. Evaluation: Fail / pass on a scale 1-5.
Group presentation of a project plan: Evaluation: Fail / pass on a scale 1-5 for all group members.
The final grade equals the mathematical average of the 3 sub-parts of the exam.

Subject: NUTRITIONAL HEALTH AND FOOD SAFETY
Year, Semester: 4th year/1st semester
Number of teaching hours:
Lecture: 15
Seminar: 30

1st week: Lecture: Introduction to nutritional health
Seminar: Foods and nutrients. Food composition tables

2nd week: Lecture: Nutrition and metabolism
Seminar: Food balance tables

3rd week: Lecture: Energy and protein requirements
Seminar: Energy practical

4th week: Lecture: Nutritional surveys
Seminar: Food frequency questionnaires

5th week: Lecture: Nutritional deficiency diseases
Seminar: Prevention of nutritional deficiency diseases.

Program planning

6th week: Lecture: Epidemiology of obesity
Seminar: Nutritional assessment. Anthropometric methods

7th week: Lecture: Diet and cardiovascular diseases
Seminar: Diet and prevention of chronic diseases. Poster presentations

8th week: Lecture: Diet and cancer
Seminar: Role of different foods and nutrients in health and disease. Student presentations 1.

9th week: Lecture: Anticarcinogenic phytochemicals
Seminar: Role of different foods and nutrients in health
and disease. Student presentations 2.

10th week:
Lecture: Dietary recommendations
Seminar: Role of different foods and nutrients in health and disease. Student presentations 3.

11th week:
Lecture: Food safety. HACCP.
Seminar: Food preservations. Food additives

12th week:
Lecture: Epidemiology of foodborne diseases
Seminar: Outbreak of foodborne disease. Case study

13th week:
Lecture: Food allergy and intolerance
Seminar: Foodborne disease investigation. Food hygiene

14th week:
Lecture: Genetically modified foods
Seminar: Regulation and legislation related to food chain

15th week:
Lecture: Food choice
Seminar: Consultation

Requirements

Attendance of lectures is not obligatory but highly recommended. Attendance of the group seminars and practices is obligatory.
Examination:
Written test, which assessed on five-grade scale.

Subject: THESIS I.
Year, Semester: 4th year/1st semester
Number of teaching hours:
Practical: 15

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

Subject: HEALTH CARE LAW IV.
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Lecture: 30

1st week:
Lecture: The development of labour law, the appearance of civil service employment law

2nd week:
Lecture: Labour law principles, introductory provisions of the Code of Labour, the scope of the Act on Legal Status of Civil Servants

3rd week:
Lecture: Subjects and establishment of civil service legal relationship

4th week:
Lecture: Content of civil service legal relationship, fundamental rights and obligations

5th week:
Lecture: Carrier development of civil servants

6th week:
Lecture: Working time and rest time rules for the civil service

7th week:
Lecture: Remuneration of civil servants

8th week:
Lecture: Liability of civil servants, disciplinary liability

9th week:
Lecture: Civil servant’s liability for damages
**ENGLISH PROGRAM BULLETIN BSC IN PUBLIC HEALTH**

<table>
<thead>
<tr>
<th>10th week:</th>
<th>13th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Employer's liability for damages</td>
<td></td>
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<tr>
<td><strong>Lecture:</strong> Special conditions of employment in the civil service</td>
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<thead>
<tr>
<th>11th week:</th>
<th>14th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Termination of the civil service legal relationship 1</td>
<td></td>
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<tr>
<td><strong>Lecture:</strong> The institutions of collective labour law</td>
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<tr>
<th>12th week:</th>
<th>15th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Termination of the civil service legal relationship 2</td>
<td></td>
</tr>
<tr>
<td><strong>Lecture:</strong> Summary, Q &amp; As, testing in a written form.</td>
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</tbody>
</table>

**Requirements**

Year, semester: 4th year/2nd semester
Number of teaching hours: 30
Lecture: 30

**Subject: HEALTH SYSTEM MANAGEMENT**

Year, Semester: 4th year/2nd semester
Number of teaching hours:
Lecture: **30**

<table>
<thead>
<tr>
<th>1st week:</th>
<th>9th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> The background of the Hungarian health system in the aspect of law. Basic definitions.</td>
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<tr>
<td><strong>Lecture:</strong> PR in tools.</td>
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<thead>
<tr>
<th>2nd week:</th>
<th>10th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> The construction and the levels of the health system, its conditions of functions and obligations.</td>
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<td><strong>Lecture:</strong> Effective communication in connection with tenders in the projects’ preparatory, effectuative and later stages.</td>
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<thead>
<tr>
<th>3rd week:</th>
<th>11th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> The constitution of financing according to the sources (OEP, state support, own income or other sources) in health institutes.</td>
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<tr>
<td><strong>Lecture:</strong> Tendering possibilities in public health nowadays.</td>
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<thead>
<tr>
<th>4th week:</th>
<th>12th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> The actual questions and the background of patient documentation according to the rules of law. The patient documentation system of the UDMHSC.</td>
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<tr>
<td><strong>Lecture:</strong> Quality control and quality assurance in health institutes (tasks and opportunities). Quality assurance as a supportive tool of decision preparation.</td>
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<tr>
<th>5th week:</th>
<th>13th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> The basic rules of employing manpower in the health system.</td>
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<tr>
<td><strong>Lecture:</strong> The social circumstances and the background of quality assurance in the aspect of law, profession and economy.</td>
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<tr>
<th>6th week:</th>
<th>14th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> The tools of human resource from recruitment to labour development.</td>
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<tr>
<td><strong>Lecture:</strong> The estimation and the measurement of the level of health care nowadays.</td>
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<tr>
<th>7th week:</th>
<th>15th week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Conflict management – amicable settlement of disputes during work.</td>
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</tr>
<tr>
<td><strong>Lecture:</strong> Summary, Q &amp; As, testing in a written form.</td>
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</table>
Requirements

Examination:
final examination

Form of examination:

The students are required to make an essay from a freely chosen topic in the field of health system management by using the literature they explore and elaborate on their own. The essay’s volume is required to be 10,000-15,000 characters and has to be submitted by the 14th educational week.

Department of Preventive Medicine, Faculty of Public Health

Subject: FIELD AND LABORATORY PRACTICE III.
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: 180

Requirements

This course aims to equip students with the knowledge and skills to make valuable contributions to environmental health, food and nutrition, child and youth health, radiation and chemical safety, as well as communicable diseases, health promotion and health administration and management.

The course focuses on: The health status of the population, risk factors and the analysis of them, risk assessment and prevention;
Effective public health rules: in the fields of environmental health, radiation, chemical safety, food and nutrition;
Control of communicable diseases;
Laboratory methods of preventive medicine;
Health promotion activities to prevent diseases;
Health administration tasks;
Supervision of nursing, childhood care and pharmaceutics

Subject: THESIS II.
Year, Semester: 4th year/2nd semester
Number of teaching hours:
Practical: 60

CHAPTER 13
REQUIRED ELECTIVE COURSES

Department of Behavioural Sciences, Faculty of Public Health

Subject: NARRATIVE CASE STUDIES
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: 7
Practical: 7

1st week:
Lecture: Introduction to qualitative research methodology
Role of case studies in research

2nd week:
Lecture: Investigating subjective reflections
Narrative
based methods

3rd week:
Practical: Interview-1 Interview-2

4th week:
Practical: Interview-3 Interview-4

5th week:
Practical: Preparation of written documentation-1 Preparation of written documentation-2

Requirements

Evaluation of presented project work has to reach at least the satisfactory (2) level. Term mark (assessment of work, 5-grade)

Department of Preventive Medicine, Faculty of Public Health

Subject: APPLIED EPIDEMIOLOGY
Year, Semester: 3rd year/1st semester
Number of teaching hours:
Practical: 30

1st week:
Practical: Evolution of epidemiological methods

2nd week:
Practical: Experimental and observational approaches

3rd week:
Practical: Defining study questions

4th week:
Practical: Model preparation

5th week:
Practical: Most frequently used study designs

6th week:
Practical: Statistical inference

7th week:
Practical: Statistics in epidemiology (95% confidence interval)

8th week:
Practical: Statistics in epidemiology (t-test, chi-square test, ANOVA)

9th week:
Practical: Statistics in epidemiology (risk/odds ratio, Mantel-Haenszel odds ratio)

10th week:
Practical: Statistics in epidemiology (linear, logistic and Cox regression)

11th week:
Practical: Statistics in epidemiology (standardization)

12th week:
Practical: Evaluating validity (confounding factors)

13th week:
Practical: Evaluating validity (selection bias)

14th week:
Practical: Evaluating validity (measurement bias)

15th week:
Practical: Answering study question and practical conclusions

Requirements

Evaluation of presented project work has to reach at least the satisfactory (2) level. Examinations:
Term mark (assessment of work, 5-grade)
Subject: **BASICS OF RESEARCH METHODOLOGY**  
Year, Semester: 2\(^{nd}\) year/1\(^{st}\) semester  
Number of teaching hours:  
Lecture: 15  
Practical: 15  

<table>
<thead>
<tr>
<th>1(^{st}) week:</th>
<th>9(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> The principles of scientific inquiry. Validity, reliability, precision of research</td>
<td><strong>Lecture:</strong> Data sources</td>
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<tr>
<th>2(^{nd}) week:</th>
<th>10(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Ethics of science</td>
<td><strong>Lecture:</strong> Measures of occurrence and association</td>
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<tr>
<th>3(^{rd}) week:</th>
<th>11(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Types of scientific research</td>
<td><strong>Lecture:</strong> Designing a scientific inquiry (study design)</td>
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<tr>
<th>4(^{th}) week:</th>
<th>12(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Methods of quantitative research I</td>
<td><strong>Lecture:</strong> Interpreting and publishing results</td>
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<tr>
<th>5(^{th}) week:</th>
<th>13(^{th}) week:</th>
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</thead>
<tbody>
<tr>
<td><strong>Lecture:</strong> Methods of quantitative research II</td>
<td><strong>Lecture:</strong> Rules of scientific publication</td>
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<tr>
<th>6(^{th}) week:</th>
<th>14(^{th}) week:</th>
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</thead>
<tbody>
<tr>
<td><strong>Lecture:</strong> Methods of qualitative research</td>
<td><strong>Lecture:</strong> Presenting results</td>
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<tr>
<th>7(^{th}) week:</th>
<th>15(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Orientation in the scientific literature I</td>
<td><strong>Lecture:</strong> Requirements for diploma thesis</td>
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<tr>
<th>8(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Orientation in the scientific literature II</td>
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**Requirements**

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

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Subject: **CLINICAL AUDIT**  
Year, Semester: 2\(^{nd}\) year/2\(^{nd}\) semester  
Number of teaching hours:  
Lecture: 8  
Seminar: 6  

<table>
<thead>
<tr>
<th>1(^{st}) week:</th>
<th>5(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Importance of clinical audit</td>
<td><strong>Seminar:</strong> Presentation and discussion of clinical audit projects by teams 1.</td>
</tr>
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</table>

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<tr>
<th>2(^{nd}) week:</th>
<th>6(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Steps of clinical audit</td>
<td><strong>Seminar:</strong> Presentation and discussion of clinical audit projects by teams 2.</td>
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<tr>
<th>3(^{rd}) week:</th>
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<tbody>
<tr>
<td><strong>Lecture:</strong> Quality indicators</td>
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<tr>
<th>4(^{th}) week:</th>
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<tbody>
<tr>
<td><strong>Seminar:</strong> Planning of clinical audit projects by teams</td>
<td></td>
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</table>
Requirements

Regular attending for the course

Subject: ENVIRONMENTAL PROTECTION
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: 15

1st week:
Lecture: Human impacts on the Biosphere. Examination of global environmental problems.

2nd week:

3rd week:

4th week:
Lecture: Temperature changes. External forcings (greenhouse gases; aerosols and soot; solar variation). Climate models and effects of recent climate change. Responses to global warming (mitigation, adaptation, UNFCCC).

5th week:

6th week:

7th week:
Lecture: Renewable energy technologies: wind power; hydropower; solar energy; biomass; geothermal energy. Passive, Active and Autonomous houses.

8th week:

9th week:

10th week:

11th week:

12th week:

13th week:

14th week:

15th week:
Requirements

Concerning attendance, the rules written in the Regulations Governing Admission, Education and Examinations of the University are valid.

Examination:
At the end of the semester students are required to take a Final Exam. The exam includes 20 multiple choice test questions and 5 short questions (25 x 2 points). The control tests, including the topics of the lectures, will be given during the semester.

Tests will be assessed as follows:

<table>
<thead>
<tr>
<th>Percentage (%)</th>
<th>Mark</th>
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<tbody>
<tr>
<td>0-50</td>
<td>fail (1)</td>
</tr>
<tr>
<td>51-59</td>
<td>pass (2)</td>
</tr>
<tr>
<td>60-69</td>
<td>satisfactory (3)</td>
</tr>
<tr>
<td>70-79</td>
<td>good (4)</td>
</tr>
<tr>
<td>80-100</td>
<td>excellent (5)</td>
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</table>

The maximum score is 100% and the examination takes 50 minutes.

Compulsory and recommended literature: All the topics of lectures.

Subject: HEALTH IMPACT ASSESSMENT
Year, Semester: 2nd year/2nd semester
Number of teaching hours:
Lecture: 9
Practical: 6

1st week:
Lecture: Introduction into impact assessments

2nd week:
Lecture: Regulatory, environmental and social impact assessment

3rd week:
Lecture: History of health impact assessment (HIA)

4th week:
Lecture: International organizations, regulatory background of HIA (WHO, EU, World Bank)

5th week:
Lecture: Health impact assessment activities in countries

6th week:
Lecture: History and legal background of HIA in Hungary

7th week:
Lecture: General characteristics and types of HIA (rapid, intermediate, comprehensive)
Subject: **INTERNET IN MEDICINE**  
Year, Semester: 2nd year/1st semester  
Number of teaching hours:  
Lecture: 20

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture/Seminar</th>
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<tbody>
<tr>
<td>1st week</td>
<td>What does web 2.0 mean?Web 2.0 in medicine: Introduction</td>
</tr>
<tr>
<td>2nd week</td>
<td>The medical blogosphereFrom the first comment to blog carnivals: Step by step</td>
</tr>
<tr>
<td>3rd week</td>
<td>Being up-to-date with RSSMicroblogging in medicine: Twitter and Friendfeed</td>
</tr>
<tr>
<td>4th week</td>
<td>Everything you have to know about WikipediaMedical wikis</td>
</tr>
<tr>
<td>5th week</td>
<td>Medical communities: onlineE-Patients on the web</td>
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<tr>
<td>6th week</td>
<td>Second Life: Virtual medicine I.Second Life: Virtual medicine II.</td>
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<tr>
<td>7th week</td>
<td>Medical practices on the webEducation online: medical resources</td>
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<tr>
<td>8th week</td>
<td>Podcasts and medical videosA new way of collaboration: Google Docs</td>
</tr>
<tr>
<td>9th week</td>
<td>Medical search enginesThe Google phenomenon</td>
</tr>
<tr>
<td>10th week</td>
<td>The dangers of web 2.0Future: is there a web 3.0?</td>
</tr>
</tbody>
</table>

**Requirements**

Two questionnaires must be filled in.

Subject: **INTRODUCTION TO THE GENERAL LABORATORY PRACTICE**  
Year, Semester: 3rd year/1st semester  
Number of teaching hours:  
Practical: 15

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture/Seminar</th>
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<tbody>
<tr>
<td>1st week</td>
<td>Safety precautions in the laboratory</td>
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<tr>
<td>2nd week</td>
<td>Glassware used in the laboratory</td>
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<tr>
<td>3rd week</td>
<td>Cleaning glassware</td>
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<tr>
<td>4th week</td>
<td>Equipments used in the cell culture</td>
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<tr>
<td>5th week</td>
<td>Volumetric flasks used in the laboratory</td>
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<tr>
<td>6th week</td>
<td>Pipettes and pipettors used in the laboratory</td>
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<tr>
<td>7th week</td>
<td>Types of balances used in the laboratory</td>
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</tbody>
</table>

Maximum two absences from seminars are allowed.  
Examination:  
The subject ends with a written exam assessing knowledge taught on lectures and seminars. To pass, students are required to give correct answers to at least 50% of the 10 multiple choice and 10 short open questions.
8\textsuperscript{th} week: 
\textbf{Practical:} Calibration of pipettors

9\textsuperscript{th} week: 
\textbf{Seminar:} Measurement of pH

10\textsuperscript{th} week: 
\textbf{Practical:} Calibration of pH meters

11\textsuperscript{th} week: 
\textbf{Seminar:} Buffers used in the laboratory

12\textsuperscript{th} week: 
\textbf{Seminar:} Types of solutions used in the laboratory

\textbf{13\textsuperscript{th} week:} 
\textbf{Seminar:} Types of centrifuges used in the laboratory

\textbf{14\textsuperscript{th} week:} 
\textbf{Seminar:} Spectrophotometric measurements

\textbf{15\textsuperscript{th} week:} 
\textbf{Practical:} Spectrophotometric determination of protein concentration

\textbf{Requirements}

Attendance of the seminars and laboratory practices is obligatory. The module coordinator can refuse to sign the lecture book if a student is absent more than twice from seminars and practices in the semester even if he/she has an acceptable excuse.

Examination:
At the end of the course students are required to take a written exam consisting of multiple choice test questions. The test covers the topics of the seminars and practices. If the test is graded unsatisfactory students should repeat the exam.

\textbf{Subject:} \textbf{MATHEMATICAL BASICS OF BIOSTATISTICS}

Year, Semester: 1\textsuperscript{st} year/2\textsuperscript{nd} semester

Number of teaching hours:
Lecture: 15
Practical: 45

\textbf{1\textsuperscript{st} week:} 
\textbf{Lecture:} Mathematical notation, formulas, operations
\textbf{Seminar:} Mathematical notation, formulas, operations

\textbf{2\textsuperscript{nd} week:} 
\textbf{Lecture:} Equations, inequalities
\textbf{Seminar:} Equations, inequalities

\textbf{3\textsuperscript{rd} week:} 
\textbf{Lecture:} The concept of sets, set operations
\textbf{Seminar:} The concept of sets, set operations

\textbf{4\textsuperscript{th} week:} 
\textbf{Lecture:} Combinatorics
\textbf{Seminar:} Combinatorics

\textbf{5\textsuperscript{th} week:} 
\textbf{Lecture:} Relations, functions
\textbf{Seminar:} Relations, functions

\textbf{6\textsuperscript{th} week:} 
\textbf{Lecture:} Number sequences and series

\textbf{7\textsuperscript{th} week:} 
\textbf{Seminar:} Number sequences and series

\textbf{8\textsuperscript{th} week:} 
\textbf{Lecture:} The concept of limit
\textbf{Seminar:} The concept of limit

\textbf{9\textsuperscript{th} week:} 
\textbf{Lecture:} Calculus
\textbf{Seminar:} Calculus

\textbf{10\textsuperscript{th} week:} 
\textbf{Lecture:} Mathematical investigation of functions
\textbf{Seminar:} Mathematical investigation of functions

\textbf{11\textsuperscript{th} week:} 
\textbf{Lecture:} Basic concepts of probability
\textbf{Seminar:} Basic concepts of probability

\textbf{12\textsuperscript{th} week:} 
\textbf{Lecture:} Classical probability
\textbf{Seminar:} Classical probability
12th week:
Lecture: The mathematical concept of probability
Seminar: The mathematical concept of probability

13th week:
Lecture: Total probability theorem, Bayes’ theorem
Seminar: Total probability theorem, Bayes’ theorem

14th week:
Lecture: Random variables, expected value, standard deviation
Seminar: Random variables, expected value, standard deviation

15th week:
Lecture: Probability distributions
Seminar: Probability distributions

Requirements
Participation in seminars and practices is obligatory. In the case of more than two absences signature is refused. During the course a practical mark will be given to the students on the base of classroom tasks, homeworks, and tests.

Subject: MODERN MORPHOLOGICAL METHODS AND POSSIBLE APPLICATIONS
Year, Semester: 2nd year/1st semester
Number of teaching hours:
Lecture: 22
Practical: 8

1st week:

2nd week:

3rd week:

4th week:
Lecture: Application of FISH. Detection of translocation of chromosome segments using whole chromosome painting probes. Detection of gene amplification in interphase tumor cells with locus specific DNA probes different fluorochromes for chromosome analysis. Clinical application of FISH.

5th week:
Lecture: FISH in the research laboratory. Practice, protocol demonstration for small groups.

6th week:

7th week:
Lecture: Epigenetic alterations and diseases.

8th week:
Lecture: The underlying principles of conventional immunohistochemical methods. Immunohistochemical reactions on paraffin embedded and on frozen tissue sections, multiple labeling (fluorescent and enzymatic). Simultaneous detection of genetic alteration and protein expression (combination of FISH and immunohistochemical methods, demonstration).

9th week:

10th week:
Lecture: Laser microdissection. Practice for small groups.

11th week:
Lecture: Polymerase chain reaction. Basic principle and use in research and diagnosis.

12th week:
Lecture: PCR instrument. Practice for small groups.

13th week:
Lecture: Basic principle of microgel electrophoretic technique for the detection of DNA strand breaks and repair. Fluorescence microscopic demonstration of the digital image analysis software for the evaluation of comet assay images.

14th week:
15th week:
Lecture: Summary and consultation. Pre-exam test.

Requirements

Molecular biology and biomedical research have recently experienced a revolutionary change with the development of new methods. The aim of the course is to introduce students into these new technical approaches that are used at the field of environmental health and molecular medicine and research. During the lectures, we will discuss the basics of the methods in details and highlight the possible applications at different fields. The course will help the students to join the scientific work at the University and understand the principal of the modern molecular techniques (e.g. microscopy, polymerase chain reaction, comet assay and fluorescence in situ hybridization).

Examination:
At the end of the semester students will be examined (end-semester-exam: ESE). The form of examination is a written form. Evaluation of the written test is assessed on a fivegrade scale.

CHAPTER 14
LIST OF TEXTBOOKS

BMC
Introduction to Biophysics I.:
Serway/Vuille: College Physics.
University of Debrecen.

Introduction to Medical Chemistry I.:

Introduction to Medical Chemistry II.:
F., Erdődi, Cs., Csortos: Organic Chemistry for Premedical Students.
University of Debrecen, 2011.

Hungarian Language for BMC students:
Marschalkó, Gabriella: Hungarolingua Basic Level 1.
Debreceni Nyári Egyetem, 2011.

Introduction to Biology I.:

Introduction to Biophysics II.:
100
**ENGLISH PROGRAM BULLETIN BSC IN PUBLIC HEALTH**


**1st year**

**Chemistry:**
Gergely, P.: Organic and Bioorganic Chemistry for Medical Students. 3rd edition. Medical and Health Science Center, University of Debrecen, 2008.

**Ecology:**

**Basics of Informatics:**:
: Handbooks of MS Office applications, Internet sources.

**Psychology:**
Segerstrale, U., Peter Molnár: Non-verbal communication: where nature meets culture.
Lawrence Erlbaum Associate, Mahwah, New Jersey, 1997.

**Communication skills:**
Segerstrale, U., Peter Molnár: Non-verbal communication: where nature meets culture. .
Lawrence Erlbaum Associate, Mahwah, New Jersey, 1997.

**Bioethics:**

**1st year**

**Chemistry:**
Gergely, P.: Organic and Bioorganic Chemistry for Medical Students. 3rd edition. Medical and Health Science Center, University of Debrecen, 2008.

**Ecology:**

**Basics of Informatics:**:
: Handbooks of MS Office applications, Internet sources.

**Psychology:**
Segerstrale, U., Peter Molnár: Non-verbal communication: where nature meets culture.
Lawrence Erlbaum Associate, Mahwah, New Jersey, 1997.

**Communication skills:**
Segerstrale, U., Peter Molnár: Non-verbal communication: where nature meets culture. .
Lawrence Erlbaum Associate, Mahwah, New Jersey, 1997.

**Bioethics:**

**First aid:**

**Hungarian Language I.:**

**Introduction to Nursing and Clinical Medicine:**

**Sociology:**

**Introduction to public health:**

**Cell Biology:**

**Medical latin:**
Répás László, 2012.

Basic anatomy:
T. W. Sadler: Langman's Medical Embriology.
Sobotta: Atlas of Human Anatomy I.-II.
A. Birinyi (Ed): Anatomy.
L.P. Gartner: Concise Histology.

Biostatistics:

Health (& Library) informatics I.:
Parker J.C., E. Thorson: Health Communication in the New Media Landscape.
Greenhalgh T : How to Read a Paper: The Basic of Evidence Based Medicine.

Genetics and molecular biology:

Hungarian Language II.:

Basics of pedagogy:
Glanz, Rimer, Lewis eds.: Health behavior and health education.

Health sociology:
SAGE., 2012. ISBN: (Chapters 1., 2.).
Helman, C. G. : Culture, Health and Illness. .
CRC Press,(Chapter 1.). .
K. White: An Introduction to the Sociology of Health and Illness.
102

W.C. Cockerham: The Blackwell Companion to Medical Sociology.

2nd year

Introduction to law I.:

Physiology:
J. B. West: Best and Taylor's Physiological Basis of Medical Practice.
Guyton, A. C., Hall, J. E.: Textbook of Medical Physiology

Public health medicine I.:
McPhee, Stephen J.; Papadakis, Maxine A.; Tierney, Lawrence M.: Current Medical Diagnosis and Treatment. 2008.

Basic epidemiology:
Woodward M.: Epidemiology: Study design and data analysis.
Hennekens CH., Buring JE.: Epidemiology in Medicine.
Little, Brown and Company, Boston, Toronto,.

Basic microbiology:
Levinson, W.: Review of Medical Microbiology and Immunology.

Health (& Library) informatics II.:
Greenhalgh T : How to Read a Paper: The Basic of Evidence Based Medicine.

Basic Biochemistry:
Harvey, Ferrier: Biochemistry.

**Professional Hungarian I.**
Győrffy Erzsébet, Ph.D.: Hogy s mint? I.
2013.

**Basics of research methodology:**
Trochim, WMK: Research methods knowledge base.
URL: http://www.socialresearchmethods.net/kb/contents.php

URL: http://www.wpro.who.int/publications/docs/Health_research_methodology.pdf

**Modern morphological methods and possible applications:**

**Environmental protection:**
Carson R.: Silent Spring.
Lynas M.: Six Degrees: Our Future on a Hotter Planet.
Whitacre D.M. (ed.): Reviews of Environmental Contamination and Toxicology. Vol. 223.

**Internet in medicine:**

**Narrative case studies:**
J. Launer: Narrative based medicine.

**Introduction to law II.:**

**Environmental health:**
Power points slides of the lectures and seminars available at: www.nepegeszseg.hu/pdf.

Dade W. Moeller: Environmental Health.

**Public health medicine II.:**
McPhee St. J., M. Papadakis: Current Medical Diagnosis and Treatment.

**Epidemiology of communicable and non-communicable diseases I.:**
Heyman DL (ed.).: Control of communicable diseases manual.
Giesecke J.: Modern infectious disease epidemiology.
Gregg MB. (ed.): Field Epidemiology.
Webber R.: Communicable disease epidemiology and control. A global perspective.

**Professional Hungarian II.:**
Győrffy Erzsébet, Ph.D.: Hogy s mint? I.
2013.

**Health impact assessment:**
Health Impact Assessment: a practical guidance.

**Clinical audit:**

**Biochemistry:**
3rd year

Pharmacology:

Basics in health promotion and policy:

Immunology:
Abbul K. Abbas, Andrew H. Lichtman, Shiv Pillai: Basic Immunology.

Public health medicine III.:
McPhee, Stephen J.; Papadakis, Maxine A.; Tierney, Lawrence M.: Current Medical Diagnosis and Treatment. 2008.

Epidemiology of communicable and non-communicable diseases II.:
Morrison: Screening in chronic disease.
Brownson, Remington, Davis: Chronic disease epidemiology and control.
Mayor: Essential Evidence-Based Medicine.
Schottenfeld, Fraumeni: Cancer Epidemiology and Prevention.
Weiss: Clinical Epidemiology.
Marmot, Elliott: Coronary Heart Disease Epidemiology - From aetiology to public health.
Narayan, Williams, Gregg, Cowie: Diabetes Public Health - From Data to Policy.

Occupational health:

Health care law I.:

Introduction to the general laboratory practice:

Applied epidemiology:
R. Beaglehole, R. Bonita, T. Kjellström: Basic epidemiology.

Health care law II.:
Jonathan Montgomery: Health Care Law.
**Basics of quality assurance:**

**Public health medicine IV:**
McPhee, Stephen J.; Papadakis, Maxine A.; Tierney, Lawrence M.: Current Medical Diagnosis and Treatment. 2008.

**Field and laboratory practice I:**

**Child and adolescent health:**

**4th year**

**Health care law III.:**

**Health promotion:**

**Nutritional health and food safety:**

**Field and laboratory practice II.:**

**Health system management:**

**Health care law IV.:**

**Field and laboratory practice III.:**
CHAPTER 15

TITLES OF THESES

Department of Anatomy, Histology and Embryology
1. Title: Inhibition mediated by GABAA and GABAB receptors in the superficial spinal dorsal horn in health and disease
2. Title: Molecular organization of the endogenous cannabinoid signaling apparatus in the superficial spinal dorsal horn in health and disease
Tutor: Miklós Antal M.D., Ph.D., D.Sc.
3. Title: Role of the extracellular matrix in the plasticity of the vestibular system.
4. Title: Termination of the vestibulospinal tract in the rat
Tutor: Klára Matesz M.D., Ph.D., D.Sc.
5. Title: Dendritic impulse propagation in mice showing symptoms of Alzheimer’s disease – computer modelling
Tutor: Ervin Wolf M.Sc., Ph.D.
6. Title: Basic mechanisms of visual contour integration in the primary visual cortex using voltage sensitive dye imaging.
7. Title: Dendritic integration of inhibitory and excitatory cortico-cortical inputs in the primary visual cortex
8. Title: Functional mapping of callosal inputs on the dendritic arbour of neurons in the visual cortex
10. Title: Synaptic mapping of identified excitatory and inhibitory neurons in the primary visual cortex. Immunoelectron microscopic study.
11. Title: Investigation of signaling mechanisms that regulate cartilage maturation
Tutor: Róza Zákány M.D., Ph.D.
12. Title: Investigation of neuronal network development in the spinal cord
Tutor: Zoltán Mészár M.Sc., Ph.D.
13. Title: Identification of genes and proteins which play important role in the induction and maintenance of chronic inflammatory pain. Supervisor: Krisztina Hollo MSc, PhD
Tutor: Krisztina Hollo M.Sc., Ph.D.
14. Title: Correlative physiological and morphological investigation of propriospinal connections in the spinal dorsal horn
Tutor: Zsófia Antal M.D.

Department of Biochemistry and Molecular Biology
1. Title: Apoptosis of differentiating adipocytes
2. Title: Development of effective recombinant tissue transglutaminase production systems. Development of assays to test transglutaminase activity. Studying superGTPase tissue transglutaminases.
Tutor: László Fésüs M.D., Ph.D., D.Sc., M.H.A.Sc.
3. Title: Genetic modification of mesenchymal stem cells and differentiation into macrophages.
4. Title: Investigation of the phagocytosis of apoptotic cells
5. Title: The anti-inflammatory role of adenosine A2A receptor.
6. Title: The anti-inflammatory role of membrane-bound TNFalpha
7. Title: The potential role of LXR receptor in the dexamethasone-induced phagocytosis of apoptotic cells.
8. Title: The role of adenosine A3 receptor in mediating anti-inflammatory action of apoptotic cells.
9. Title: The role of transglutaminase 2 in calcium homeostasis.
Tutor: Zsuzsa Szondy M.D., Ph.D., D.Sc.
10. Title: The role of retroviral proteases in the retroviral life cycle.
Tutor: József Tőzsér M.Sc., Ph.D., D.Sc.
11. Title: The role of tissue transglutaminase in rolling and adhesion of neutrophil granulocytes
Tutor: Zoltán Balajthy M.Sc., Ph.D.
12. Title: Saliva biomarkers of oral cancer.
Tutor: Beáta Scholtz M.Sc., Ph.D.
13. Title: Production of dendritic cells and macrophages from embryonic stem cells.
14. Title: Transcriptional reprogramming of murine embryonic stem cell progenitors.
Tutor: István Szatmári M.Sc., Ph.D.
15. Title: The epigenetic components of transcriptional regulation.
Tutor: Bálint Bálint L. M.D., Ph.D.
16. Title: Identification and regulation of the endogenous RXR ligand.
Tutor: Ralph Rühl M.Sc., Ph.D.
17. Title: Modification of the enzymatic activity of transglutaminase 2 by site-directed mutagenesis. Therapeutic utilization of modified transglutaminase 2.
Tutor: Róbert Király M.Sc., Ph.D.
18. Title: Characterization of primary cells from patients with high risk for coeliac disease: immunofluorescent staining, migration assays, mobility assays.
19. Title: The effect of auto-antibodies from coeliac disease patients on the activity of tissue transglutaminase. Epitope mapping of auto-antibodies, development of a specific
diagnostic test for coeliac disease, therapeutic applications.
Tutor: Ilma Korponay-Szabó M.D., Ph.D.

20. Title: Quantitative proteomic analysis of the tear proteins of diabetic patients.
Tutor: Éva Csőszi M.Sc., Ph.D.

21. Title: Identification of regulatory SNPs in promoter regions of different species by bioinformatic analyses.
Tutor: Endre Barta M.Sc., Ph.D.

22. Title: The role of aim2 protein and native immune response in inhibiting cell proliferation
Tutor: Máté Demény M.D., Ph.D.

23. Title: Alterations in structural properties of the transcription machinery in relation to disease development
24. Title: Molecular factors in cell differentiation
25. Title: Studying the re-programming mechanisms of viral proteins.
26. Title: The role of signaling pathway perturbations in cancer development
Tutor: Mónika Fuxreiter M.Sc., Ph.D., D.Sc.

Department of Biophysics and Cell Biology

1. Title: Investigation of cell surface distribution of erbB-2 oncprotein in breast tumor cell lines.
2. Title: Role of tumor stem cells in trastuzumab resistant breast tumors
Tutor: János Szöllősi M.Sc., Ph.D., D.Sc.

3. Title: Studying the inactivation of voltage gated potassium ion channels in heterologous expression systems.
Tutor: György Panyi M.D., Ph.D., D.Sc.

4. Title: Epigenetic regulation of nucleosome-DNA cohesion
5. Title: Interactions between ABC transporters and their membrane environment
Tutor: Gábor Szabó M.D., Ph.D., D.Sc.

6. Title: Mathematical analysis and computer modelling of the topology of cell surface proteins.
7. Title: Role of MHC in the organization of cell surface proteins
Tutor: László Mátyus M.D., Ph.D., D.Sc.

8. Title: Examination of the channel function properties of the P170 multidrug pump by patch-clamp.
Tutor: Zoltán Krasznai M.Sc., Ph.D.

9. Title: Cytometry of cytotoxic lymphocytes
10. Title: Physiological roles of the multidrug resistance transporter P-glycoprotein.
Tutor: Zsolt Bacsó M.D., Ph.D.

11. Title: Elucidation of the catalytic mechanism of ABC transporters
Tutor: Katalin Goda M.Sc., Ph.D.

12. Title: 3-dimensional reconstruction of chromosome conformations based on whole-genome contact probability data
13. Title: Histone point mutations affecting epigenetic modifications: impact on chromosome architecture
Tutor: Lóránt Székvölgyi M.Sc., Ph.D.

14. Title: Biophysical analysis and functional significance of cell surface protein patterns in T cell-mediated immune responses
Tutor: Andrea Dóczi-Bodnár M.Sc., Ph.D.

15. Title: Studying nuclear receptor function by modern microscoppy techniques
Tutor: György Vámossy M.Sc., Ph.D.

16. Title: Quantitative investigation of the associations of ErbB proteins using biophysical and molecular biological methods
17. Title: The correlation between the metastatic potential and chemoresistance of breast tumors with the expression level and association state of ErbB proteins
Tutor: Péter Nagy M.D., Ph.D.

18. Title: Molecular mechanisms of anticancer immune therapy.
19. Title: Role of molecular interactions between receptor tyrosine kinases and integrins in the therapy resistance of tumors.
Tutor: György Vereb M.D., Ph.D., D.Sc.

20. Title: Comparative study on Kv1.3 channels conjugated with fluorescent proteins
Tutor: Péter Hajdu M.Sc., Ph.D.

Department of Human Genetics

1. Title: Characterization of factor-C protein family using sequence databases.
2. Title: Expression of WT1 and its splice variants in different diseases studied by real time PCR.

3. Title: Study of a gene regulating differentiation in bacteria.

4. Title: Study of the WT1 gene in urogenital malformations.

5. Title: Human disease models in animals and lower eukaryotes (review).
Tutor: Zsigmond Fehér M.D., Ph.D.

6. Title: Ca++-binding proteins in Streptomyces
7. Title: Isolation of mono-ADP-ribosylated proteins from pro- and eukaryotic cells.
Tutor: András Penyige M.Sc., Ph.D.

8. Title: Chromosome-tracking studies in complex diseases.
Tutor: György Vargha M.D., Ph.D.

9. Title: Factor-C: a protein regulating differentiation in
<table>
<thead>
<tr>
<th>Title</th>
<th>Tutor</th>
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<tr>
<td>Functional analysis of the Streptomyces facC gene in Aspergillus</td>
<td>Melinda Paholcsek M.Sc.</td>
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<td>Global analysis of the human blood plasma epitome and interactome in</td>
<td>László Takács M.D., Ph.D., D.Sc., M.H.A.Sc.</td>
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<td>health and disease.</td>
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<td>Use of comparative monoclonal antibody proteomics to detect three</td>
<td>Dániel Ernő Beyer M.Sc., Ph.D.</td>
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<td>dimensional conservation relevant to protein function.</td>
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<td>Copy number variation of WT-1 gene in hematological conditions</td>
<td>Árpád Lányi M.Sc., Ph.D.</td>
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<td>Factor-A mediated regulation of differentiation in Streptomyces</td>
<td>Melinda Szilágyi-Bónizs M.Sc., Ph.D.</td>
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<td>Functional properties of proteins of SLAM receptor family in</td>
<td>Péter Gogolák M.Sc., Ph.D.</td>
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<td>dendritic cells</td>
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<td>Identification and functional analysis of adaptor proteins in</td>
<td>Gábor Koncz M.Sc., Ph.D.</td>
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<td>dendritic cells</td>
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<td>Investigation of effects of adjuvant factors released by allergenic</td>
<td>Viktor Dombrádi M.Sc., Ph.D., D.Sc.</td>
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<td>materials on epithelial cells</td>
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<td>Role of reactive oxygen species generated by pollen grains in the</td>
<td>Attila Bácsi M.Sc., Ph.D.</td>
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<td>pathomechanisms of allergic reactions</td>
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<td>Cellular interactions between dendritic cells and CD1 specific</td>
<td>Ilona Farkas M.Sc., Ph.D.</td>
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<td>T-lymphocytes</td>
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<td>Study of non-apoptotic cytotoxic processes during immune response,</td>
<td>Péter Bay M.Sc., Ph.D.</td>
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<td>new way of killing apoptosis resistant tumor cells</td>
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<td>Antimicrobial cell-mediated immunity measured by mRNA tests</td>
<td>Judit Keserű M.Sc., Ph.D.</td>
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<td>Evaluation of in vitro efficacy of different new antibiotics against</td>
<td>Judit Szabó M.D., Ph.D.</td>
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<td>multiresistant bacteria</td>
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<td>Role of HPV in head and neck cancers</td>
<td>Krisztina Szarka M.Sc., Ph.D.</td>
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<td>Evaluation of fungicidal effect of antifungal agents using time-kill</td>
<td>Gábor Kardos M.D., Ph.D.</td>
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<td>Multidrug-resistant acinetobacter baumanii in bloodstream infection</td>
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<td>Investigation of Ser/Thr protein phosphatase on pathogenic fungi</td>
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<td>Interaction of protein phosphatase 1 catalytic subunit with</td>
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<td>oxidative stress-induced cell death</td>
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<td>Regulation of macrophage functions</td>
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</tbody>
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**Department of Immunology**

1. Title: Functional analysis of the Streptomyces facC gene in Aspergillus
   Tutor: Melinda Paholcsek M.Sc.

11. Title: Global analysis of the human blood plasma epitome and interactome in health and disease.
   Tutor: László Takács M.D., Ph.D., D.Sc., M.H.A.Sc.

13. Title: Copy number variation of WT-1 gene in hematological conditions
   Tutor: Dániel Ernő Beyer M.Sc., Ph.D.

14. Title: Factor-A mediated regulation of differentiation in Streptomyces griseus
   Tutor: Melinda Szilágyi-Bónizs M.Sc., Ph.D.

**Department of Medical Microbiology**

1. Title: Functional properties of proteins of SLAM receptor family in dendritic cells
   Tutor: Árpád Lányi M.Sc., Ph.D.

2. Title: Identification and functional analysis of adaptor proteins in dendritic cells
   Tutor: Árpád Lányi M.Sc., Ph.D.

4. Title: Investigation of effects of adjuvant factors released by allergenic materials on epithelial cells
   Tutor: Péter Gogolák M.Sc., Ph.D.

5. Title: Role of reactive oxygen species generated by pollen grains in the pathomechanisms of allergic reactions
   Tutor: Attila Bácsi M.Sc., Ph.D.

6. Title: Cellular interactions between dendritic cells and CD1 specific T-lymphocytes
   Tutor: Péter Gogolák M.Sc., Ph.D.

7. Title: Study of non-apoptotic cytotoxic processes during immune response, new way of killing apoptosis resistant tumor cells
   Tutor: Gábor Koncz M.Sc., Ph.D.

8. Title: Evaluation of antimicrobial cell-mediated immunity measured by mRNA tests
   Tutor: József Kónya M.D., Ph.D.

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    Tutor: Árpád Lányi M.Sc., Ph.D.

14. Title: Factor-A mediated regulation of differentiation in Streptomyces griseus
    Tutor: Melinda Szilágyi-Bónizs M.Sc., Ph.D.

**Department of Medical Chemistry**

1. Title: Investigation of Ser/Thr protein phosphatase on pathogenic fungi

2. Title: Interaction of protein phosphatase 1 catalytic subunit with regulatory proteins

3. Title: Mechanism of oxidative stress-induced cell death
   Tutor: László Virág M.D., Ph.D., D.Sc.

4. Title: Regulation of macrophage functions
   Tutor: László Virág M.D., Ph.D., D.Sc.

5. Title: Scaffolding proteins in the endothelium
   Tutor: Csilla Csortos M.Sc., Ph.D.

6. Title: Structural and functional investigation of a fungus specific protein phosphatase
   Tutor: Iłona Farkas M.Sc., Ph.D.

7. Title: Study of metabolic processes with special regard to the involvement of mitochondrial activity.
   Tutor: Péter Bay M.Sc., Ph.D.

8. Title: Identification of adenosine receptor 2A interacting proteins in macrophages
   Tutor: Endre Kókai M.Sc., Ph.D.

9. Title: Study of the role of protein phosphatase in wound healing
   Tutor: Beáta Lontay M.Sc., Ph.D.

10. Title: Interaction of protein phosphatases with inhibitory molecules
    Tutor: Andrea Kiss M.Sc., Ph.D.
### Department of Internal Medicine

1. **Title:** Immunotherapy of B cell lymphomas.  
   **Tutor:** Lajos Gergely M.D., Ph.D., D.Sc.

2. **Title:** Safety profile of prolonged rituximab therapy in lymphomas.  
   **Tutor:** Péter Kovács M.D., DLA, Ph.D., D.Sc.

3. **Title:** Targeted therapy in non-Hodgkin's lymphomas  
   **Tutor:** István Lőrincz M.D., Ph.D.

4. **Title:** Clinical testing of sinus node function.  
   **Tutor:** Judit Boda M.D.

5. **Title:** Lipid abnormalities in hypothyreoidism.  
   **Tutor:** György Paragh M.D., Ph.D., D.Sc.

6. **Title:** The function of LDL in lipid metabolism  
   **Tutor:** Gyula Bakó M.D., Ph.D., D.Sc.

7. **Title:** Diagnostic tests and imaging techniques in endocrinology.  
   **Tutor:** Endre Nagy M.D., Ph.D., D.Sc.

8. **Title:** Antiarrhythmic drug treatment.  
   **Tutor:** István Tornai M.D., Ph.D.

9. **Title:** Cardiac arrhythmias in patients end-stage renal failure.  

10. **Title:** Pacemaker treatment and myocardial infarction.  

11. **Title:** Pathophysiology of neurocardiogenic syncope.  

12. **Title:** Rhythm disturbances and the autonomic system of the heart.  

13. **Title:** Ventricular repolarization and drugs.  
   **Tutor:** Judit Boda M.D.

14. **Title:** Investigations of lipoproteins in normo- and hypercholesterinemic patients.  
   **Tutor:** Gyula Bakó M.D., Ph.D., D.Sc.

15. **Title:** Characteristics of rare systemic vasculitides  
   **Tutor:** Margit Zeher M.D., Ph.D., D.Sc.

16. **Title:** Sjögren's syndrome associated with other autoimmune disease  
   **Tutor:** István Altorjay M.D., Ph.D.

17. **Title:** Effect of physical activity on physiological parameters elderly people  

18. **Title:** Incidence of thyroid diseases in elderly.  
   **Tutor:** Gyula Bakó M.D., Ph.D., D.Sc.

19. **Title:** Immunoregulatory abnormality in undifferentiated connective tissue disease  

20. **Title:** Interstitial lung diseases in MCTD  

21. **Title:** The presence of antiphospholipide antibodies in the disease course of the MCTD  

22. **Title:** Vascular involvement in mixed connective tissue disease.  

23. **Title:** Vascular risk factors in undifferentiated connective tissue disease  
   **Tutor:** Edit Bodolay M.D., Ph.D., D.Sc.

24. **Title:** Dermato/polymyositis overlap with antiphospholipide syndrome.  

25. **Title:** Genetical study in myositis  

26. **Title:** Improvement of quality of life in polymyositis and dermatomyositis patients by physiotherapy  
   **Tutor:** Katalin Dankó M.D., Ph.D., D.Sc.

27. **Title:** Plasmapheresis treatment in intensive therapy  
   **Tutor:** Pál Soltész M.D., Ph.D., D.Sc.

28. **Title:** Autoimmune disorders and GI tract  
   **Tutor:** Zsolt Barta M.D., Ph.D.

29. **Title:** Ischemic colitis.  

30. **Title:** Life quality of Raynaud syndrome  
   **Tutor:** Zoltán Csiki M.D., Ph.D.

31. **Title:** The disease course after stent implantation in peripheral arterial disease  
   **Tutor:** György Kerekes M.D., Ph.D.

32. **Title:** Novel therapeutical approaches in multiple myeloma  

33. **Title:** The impact of multi-drug resistance genes in the prognosis of lymphoproliferative disorders  
   **Tutor:** László Váróczy M.D., Ph.D.

34. **Title:** Inherited and acquired thrombophilia  

35. **Title:** New direct oral anticoagulants  

36. **Title:** Stem cell therapy in peripheral arterial disorders  
   **Tutor:** György Pfliegler M.D., Ph.D.

37. **Title:** Gastric cancer: clinics and treatment  

38. **Title:** Gastrointestinal bleeding  

39. **Title:** Gluten sensitive enteropathy  

40. **Title:** Inflammatory bowel diseases.  

41. **Title:** Lymphomas in the gastrointestinal tract.  
   **Tutor:** István Altormay M.D., Ph.D.

42. **Title:** Langerhans histiocytosis  

43. **Title:** Osteosclerotic myeloma  

44. **Title:** Therapeutic challenges in rare haemostatic disorders  
   **Tutor:** György Pfliegler M.D., Ph.D.

45. **Title:** Epidemiology, diagnostics and therapy of chronic hepatitis C  

46. **Title:** Pathomechanism of alcoholic hepatitis  

47. **Title:** Signs, diagnostics and treatment of portal hypertension.  

48. **Title:** Therapeutic options in primary sclerosing cholangitis  

49. **Title:** Treatment of autoimmune hepatitis  
   **Tutor:** István Tornai M.D., Ph.D.

50. **Title:** A case history of an interesting acute myeloid leukaemia patient in the 2nd Department of Medicine (connection with the literature data)  
   **Tutor:** Attila Kiss M.D., Ph.D.

51. **Title:** Chronic neutrophilic leukaemia  
   **Tutor:** Béla Telek M.D., Ph.D.

52. **Title:** Therapeutic options of CML  
   **Tutor:** László Rejtő M.D., Ph.D.

53. **Title:** Biological treatment of ulcerative colitis  
   **Tutor:** Károly Palatka M.D., Ph.D.

54. **Title:** The role of Willebrand factor in various internal conditions.
110

diseases.
Tutor: Ágota Schlammadinger M.D., Ph.D.

55. Title: Bacterial infection in liver cirrhosis
56. Title: Current therapeutic options of acute pancreatitis
Tutor: Zsuzsa Vitalis M.D., Ph.D.

57. Title: Diagnosis and treatment of chronic lymphocytic leukemia
58. Title: Novel therapeutic approaches in the treatment of multiple myeloma
59. Title: Philadelphia negative chronic myeloproliferative neoplasms - novel genetic and therapeutic improvements
60. Title: Recent advances in the management of chronic ITP
Tutor: Péter Batár M.D., Ph.D.

61. Title: Heparin-induced thrombocytopenia
Tutor: Zsolt Oláh M.D.

62. Title: Are the bacterial infections predictable in liver cirrhosis?
63. Title: Role of serological markers in prediction of disease course and response to therapy in inflammatory bowel diseases.
Tutor: Mária Papp M.D., Ph.D.

Department of Pharmacology and Pharmacotherapy
1. Title: Cardiovascular risk factors
2. Title: Metabolic link between obesity and insulin resistance
Tutor: Zoltán Szilvássy M.D., Ph.D., D.Sc.

3. Title: Optional title in pharmacology
4. Title: Pharmacological and clinical significance of adenosine receptor antagonists
Tutor: József Szentmiklósí M.D., Ph.D.

5. Title: New trends in the treatment of diabetes
6. Title: Optional title in pharmacology
7. Title: Pharmacology of herbal remedies
8. Title: Possible pharmacological exploitations of TRPV1 receptors
Tutor: Róbert Pórszász M.D., Ph.D., MBA

9. Title: Effect of colony stimulating factors or other drugs on bone marrow-derived cell lines
10. Title: How insulin resistance influences drug effects
11. Title: Selected topic in field experimental haematology
Tutor: Ilona Benkő M.D., Ph.D.

12. Title: Investigation of insulin resistance and its cardiovascular complications
13. Title: Pharmacology of neurogenic inflammation
Tutor: Barna Peitl M.D., Ph.D.

14. Title: Optional title on cancer chemotherapy
Tutor: Attila Megyeri M.D., Ph.D.

15. Title: Optional title in pharmacology
Tutor: Ágnes Cseppentő M.D.

16. Title: Optional title on antibacterial chemotherapy
Tutor: Zsuzsanna Gál M.Sc., Ph.D.

Department of Physiology
1. Title: Alterations of [Ca2+]i in pathological conditions
Tutor: László Cserey M.Sc., Ph.D., D.Sc.

2. Title: Electrophysiological properties of mammalian cardiac tissues
3. Title: Regional differences in the electrophysiological properties of cardiomyocytes
Tutor: Péter Nánási M.D., Ph.D., D.Sc.

4. Title: Significance of the alterations of the intracellular ion concentrations in the functional properties of neurones.
Tutor: Géza Szűcs M.D., Ph.D., D.Sc.

5. Title: Role of afterdepolarization mechanisms in the arrhythmogenesis
Tutor: Tamás Bánya M.D., Ph.D.

6. Title: Differential roles of protein kinase C isozymes in different cellular functions
7. Title: Studies on the vanilloid (capsaicin) receptor
Tutor: Tamás Bíró M.D., Ph.D., D.Sc.

8. Title: Expression and significance of the TASK channels in physiological and pathological conditions
Tutor: János Magyar M.D., Ph.D., D.Sc.

9. Title: Studies on ion channels incorporated into artificial membranes

Department of Physiotherapy, Faculty of Public Health
1. Title: Study of the cardiorespiratory system
Tutor: Balázs Lukács M.Sc., Ph.D.

2. Title: Cardiorespiratory parameters of university students – survey
3. Title: Knowledge of medical students about physiotherapy – survey and improvement
4. Title: Regeneration of skeletal muscle fibres – effects of physical activity (review)
Tutor: Julianna Cseri M.D., Ph.D., C.Sc.

5. Title: Effects of physiotherapy on the changes in muscle mass and strength during a long-lasting steroid therapy
6. Title: Effects of physiotherapy on the muscle strength in myositis patients
7. Title: Possibilities of physiotherapy in the care of myositis patients
8. Title: Role of biological and physiotherapy in the treatment of rheumatoid arthritis
9. Title: Role of physiotherapy in myositis in the recovery
10. Title: Improvement of proprioception by using instable instruments
Tutor: Andrea Váncsa M.D., Ph.D.

11. Title: Role of physiotherapy in prevention
Tutor: Ilona Veres-Balajti M.Sc., Ph.D.

12. Title: Investigation of the efficiency of a randomized, placebo-controlled ultrasound treatment
13. Title: Physiotherapy in degenerative joint disorders
14. Title: Physiotherapy of adhesive capsulitis in diabetes mellitus
Tutor: Roberto Gomez M.D.

15. Title: Physiotherapy in ankylosing spondilitis
Tutor: Zsuzsanna Némethné Gyurcsik M.Sc., Ph.D.

16. Title: Importance of targeted physiotherapy exercises in gerontology
17. Title: Pelvic floor training in different ages
18. Title: Spine training exercises for improving physical activity in middle-aged people
Tutor: Zsuzsa Lábicsák-Erdélyi M.Sc.