

**BULLETIN**

**UNIVERSITY OF DEBRECEN**

**ACADEMIC YEAR 2020-2021**

**FACULTY OF PUBLIC HEALTH**

**BSc in Public Health**

**EDUCATIONAL OFFICE FACULTY OF PUBLIC HEALTH**



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# CHAPTER 1

## INTRODUCTION

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

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

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

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

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

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

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

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

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

## HIGHER EDUCATION IN DEBRECEN

### *A Brief History*

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

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

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

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

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

The special training of dentists began in 1976. As a further development, the University Medical School established the Health College of Nyíregyháza in 1991. In 1993, as part of a nationwide programme, the University was given the rights to issue scientific qualifications and new PhD

programmes were also launched. Several new programmes (e.g. the training of molecular biologists, pharmacists, general practitioners) were commenced in the '90s. The Faculty of Public Health was established in 1999, while the Faculty of Dentistry was founded in 2000.

### *Education at the University of Debrecen*

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

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

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

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

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

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

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

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

The accredited PhD programmes include the following topics:

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

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

### *Medical Activity at the Faculty of Medicine*

The Faculty of Medicine is not only the second largest medical school in Hungary, but it is also one

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

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

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

## HISTORY OF THE FACULTY OF PUBLIC HEALTH

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

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

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

## ORGANIZATIONAL STRUCTURE OF THE FACULTY OF PUBLIC HEALTH

Department of Biostatistics and Bioinformatics

Department of Health Promotion

Department of Humanities for Health Care

Department of Intervention Epidemiology

Department of Habilitation Medicine

Division of Public Health Medicine

Department of Physiotherapy

Department of Hospital Hygiene and Infection Control

Department of Health Management and Quality Assurance

Unit of Leadership Training for Health Care

## MISSION OF THE FACULTY OF PUBLIC HEALTH

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



## BSC AND MSC PROGRAMMES AT THE FACULTY OF PUBLIC HEALTH

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

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

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

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

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

## CHAPTER 2

### ORGANISATION STRUCTURE

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#### RECTOR OF THE UNIVERSITY OF DEBRECEN

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

#### COORDINATING CENTER FOR INTERNATIONAL EDUCATION

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

#### FACULTY OF PUBLIC HEALTH

Dean	Judit Zsuga M.D., PhD.
Address	4028 Debrecen, Kassai út 26/b.
Phone	+36-52-512-765
Fax	+36-52-512-769
E-mail	zsuga.judit@med.unideb.hu

Vice-Dean for Educational Affairs	Ilona Veres-Balajti MSc., Ph.D.
Address	4028 Debrecen, Kassai út 26/b.
Phone	+36-52-512-765/77134, 77135
E-mail	balajti.ilona@sph.unideb.hu

## CHAPTER 3

### ADMINISTRATIVE UNITS

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#### EDUCATIONAL ORGANIZATIONAL OFFICE OF FACULTY OF PUBLIC HEALTH

Kassai str. 28, Debrecen, 4028, Tel: 52-512-765/77408

E-mail: info@sph.unideb.hu, Web: <http://nk.unideb.hu>

Head	Ms. Zsuzsa Nagy-Belgyár
Education Officer, Contact Person	Ms. Andrea Debreczeni
	Ms. Zita Nagy
	Ms. Andrea Szűcs
	Ms. Tímea Varga-Géber

#### COORDINATING CENTER FOR INTERNATIONAL EDUCATION

Nagyerdei krt. 94., Debrecen, 4032 Telephone: +36-52-258-058

E-mail: info@edu.unideb.hu, Web: [www.edu.unideb.hu](http://www.edu.unideb.hu)

Director	Prof. Attila Jenei M.Sc., Ph.D.
Program Coordinator	Prof. Ferenc Erdódi M.Sc., Ph.D., D.Sc.
BMC Coordinator	Ms. Beáta Lontay M.Sc., Ph.D.
Manager Assistant	Ms. Márta Hajdu M.A.
Agent&Marketing Coordinator	Tamás Zabán M.Sc.
Marketing Coordinator	Ms. Eszter Balázs M.Sc.
	Ms. Dóra Mónus M.A.
Financial Coordinator	Ms. Rita Kovács J.D.
Agent Coordinator	József Harmati J.D.
Ranking and Marketing Coordinator	Ms. Zsófia Münnich M.Sc.
English Program Coordinators	Ms. Dóra Benkő (Admission, Visa Issues, BMC, US Loans)
	Ms. Regina Berei (Tuition fee, Financial certificates, Refunds)
	Ms. Marianna Gyuris (Admission, Visa issues, USMLE, MCCEE, Stipendium Hungaricum Scholarship, Wyckoff Heights)
	Ms. Ildikó Lakatos M.A. (Admission, Visa Issues)
	Ms. Krisztina Németh M.Sc. (Bulletin)
	Ms. Enikő Sallai M.Sc. (Tuition fee, Health Insurance)
	Ms. Mária Tóth M.Sc. (Stipendium Hungaricum Scholarship)
IT Project Coordinator	Imre Szűcs B.Sc.

## CHAPTER 5

# UNIVERSITY CALENDAR

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### UNIVERSITY CALENDAR FOR THE BSC IN PUBLIC HEALTH PROGRAM ACADEMIC YEAR 2020/2021

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

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## CHAPTER 6

# ACADEMIC PROGRAM FOR CREDIT SYSTEM

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

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

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

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

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

The general principles of the credit system are the following:

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

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

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

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

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

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

semesters.

The diploma work is worth 20 credits.

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

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

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

## CHAPTER 7

	Subject	Subject type: compulsory/elective	Lec	Sem	Pract	TOT	Cr	Ass	Pre- requirement
I.SEMESTER	Applied Health Sciences I.	compulsory	56	42		98	6	ESE	
	Anatomy	compulsory	42	28		70	6	ESE	
	General principles in nursing and clinical propedeutics	compulsory	42	14	42	98	6	ESE	
	Introduction to basics of biostatistics	compulsory		14	14	28	2	AW5	
	Health informatics I.	compulsory	10		18	28	2	AW5	
	First aid	compulsory	14		14	28	2	AW5	
	Work safety and fire protection	compulsory		14		14	1	AW5	
	Latin language	compulsory			28	28	2	AW5	
	Roger's conversation	compulsory	7	7		14	1	AW5	
	Elective subjects	elective					3		
	Physical education I.	compulsory			28	28		Sign	
<b>Total</b>			<b>171</b>	<b>119</b>	<b>116</b>	<b>434</b>	<b>31</b>		
II.SEMESTER	Applied Health Sciences II.	compulsory	56	42		98	4	ESE	Applied Health Sciences I.
	Basics of biostatistics	compulsory	14	28		42	3	ESE	Introduction to basics of biostatistics
	Basics of dietetics	compulsory	14	14		28	2	ESE	General principles in nursing and clinical propedeutics
	Health informatics II.	compulsory	10		18	28	2	AW5	Health informatics I.
	Physiology I.	compulsory	28	14		42	3	ESE	General principles in nursing and clinical propedeutics
	Basics of epidemiology	compulsory	14	14		28	5	ESE	
	Communication	compulsory		14		14	1	AW5	Roger's conversation
	Basics of research methodology	compulsory	28			28	2	ESE	Introduction to basics of biostatistics Health informatics I.
	Basics of quality assurance	compulsory	14	14		28	2	ESE	
	Ecology	compulsory	28	14		42	4	ESE	
	Hungarian language I.	compulsory	0		28	28	0	Sign	
	Elective subjects	elective					2		
	Physical education II.	criteria			28	28		Sign	
<b>Total</b>			<b>206</b>	<b>154</b>	<b>74</b>	<b>434</b>	<b>30</b>		

	Subject	Subject type: compulsory/elective	Lec	Sem	Pract	TOT	Cr	Ass	Pre- requirement
III. SEMESTER	Basics of psychology I.	compulsory	28			28	2	ESE	
	Professional Hungarian language I.	compulsory			42	42	3	AW5	
	Physiology II	compulsory	28	14	14	56	4	ESE	Physiology I.
	Introduction to law	compulsory	28			28	2	ESE	
	Microbiology I.	compulsory	14	14		28	2	ESE	Applied Health Sciences II.
	Public health medicine I.	compulsory	28	28		56	6	ESE	Basics of dietetics
	Epidemiology of communicable and non-communicable diseases I.	compulsory	14	42		56	6	ESE	Basics of epidemiology
	Hungarian language II.	compulsory	0	0	28	28	0	Sign	
	Elective subjects	elective					4		
	<b>Total</b>		<b>140</b>	<b>98</b>	<b>56</b>	<b>294</b>	<b>29</b>		
IV. SEMESTER	Professional Hungarian language II.	compulsory			42	42	3	AW5	Professional Hungarian language I.
	Principles of Health Sciences	compulsory	14			14	1	ESE	Anatomy, Physiology II.
	Health care law	compulsory	14			14	1	ESE	Introduction to law
	Environmental health	compulsory	28	28		56	6	ESE	Ecology
	Microbiology II.	compulsory	14	14		28	2	ESE	Microbiology I.
	Public health medicine II.	compulsory	28	28		56	6	ESE	Public health medicine I.
	Psychological and Addictological Knowledge	compulsory	28			28	2	ESE	Basics of psychology I.
	Epidemiology of communicable and non-communicable diseases II.	compulsory	14	28		42	4	ESE	Epidemiology of communicable and non-communicable diseases I.
	Elective subjects	elective					3		
	<b>Total</b>		<b>140</b>	<b>98</b>	<b>42</b>	<b>280</b>	<b>28</b>		



	Subject	Subject type: compulsory/elective	Lec	Sem	Pract	TOT	Cr	Ass	Pre- requirement
V.SEMESTER	Basics of pedagogy	compulsory	14			14	1	ESE	
	Basics of sociology	compulsory	14			14	1	ESE	
	Health promotion and health policy	compulsory	14	28		42	4	ESE	Health care law
	Philosophy	compulsory	14			14	1	ESE	
	Occupational health	compulsory	28	20	8	56	6	ESE	Basics of epidemiology Environmental health
	Economics and management	compulsory	28			28	2	ESE	
	Pharmacology	compulsory	28			28	3	ESE	Physiology II., Microbiology II.
	Immunology	compulsory	28			28	3	ESE	Applied Health Sciences II.
	Infectology	compulsory	14		14	28	2	ESE	Microbiology II.
	Health Care Law I.	compulsory	28			28	3	ESE	Health care law
	Public health medicine III.	compulsory	28		28	56	6	ESE	Public health medicine II.
	<b>Total</b>		<b>238</b>	<b>48</b>	<b>50</b>	<b>336</b>	<b>32</b>		
VI.SEMESTER	Bioethics	compulsory	14			14	1	ESE	
	Health sociology	compulsory	28			28	2	ESE	Basics of sociology
	Health anthropology	compulsory		15		15	2	ESE	
	Child and adolescent health	compulsory	28			28	3	ESE	
	Health Care Law II.	compulsory	28			28	3	ESE	Health Care Law I.
	Public health medicine IV.	compulsory	28		28	56	6	ESE	Public health medicine III.
	Field and laboratory practice I.	compulsory			168	168	8	AW5	Basics of epidemiology
	Terrestrial environmental protection	compulsory	18			18	2	AW5	Ecology
	Thesis I.	compulsory					4	AW5	Basics of research methodology
	<b>Total</b>		<b>144</b>	<b>0</b>	<b>196</b>	<b>355</b>	<b>31</b>		

	<b>Subject</b>	<b>Subject type: compulsory /elective</b>	<b>Lec</b>	<b>Sem</b>	<b>Pract</b>	<b>TO T</b>	<b>Cr</b>	<b>Ass</b>	<b>Pre-requirement</b>
<b>VII.SEMESTER</b>	Health promotion	compulsory	10		18	28	4	ESE	Health promotion and health policy
	Health promotion in primary care	compulsory			14	14	1	AW 5	Health promotion and health policy
	Professional Health Care Communication (Communication of Health Information for Not Qualified People)	compulsory	14		14	28		ESE	Communication
	Epidemiological and Biostatistical Knowledge	criteria	14			14	1	ESE	Basics of epidemiology Basics of biostatistics
	Hospital Hygiene	compulsory	14		14	28	2	ESE	Infectology
	Field and laboratory practice II.	compulsory			168	168	8	AW 5	Field and laboratory practice I.
	Nutritional health and food safety	compulsory	14		28	42	5	ESE	Microbiology II.
	Aquatic environmental protection	compulsory	18			18	2	AW 5	Ecology
	Thesis II.	compulsory					4	AW 5	Thesis I.
<b>Total</b>			<b>84</b>	<b>0</b>	<b>88</b>	<b>340</b>	<b>29</b>		
<b>VIII.SEMESTER</b>	Applied epidemiology	compulsory	14		14	28	3	ESE	Basics of epidemiology
	Infection Control	compulsory	14		14	28	3	ESE	Hospital Hygiene
	Planning Public Health Programs	compulsory	14		14	28	3	ESE	Health promotion, Epidemiological and Biostatistical Knowledge
	Field and laboratory practice III.	compulsory			168	168	8	AW 5	Field and laboratory practice II.
	Cardiopulmonary Resuscitation (CPR)	criteria			14	14	1	AW 5	
	Thesis III.	compulsory			14	14	12	AW 5	Thesis II.
<b>Total</b>			<b>42</b>	<b>0</b>	<b>238</b>	<b>280</b>	<b>30</b>		
<b>Subtotal</b>			<b>1165</b>	<b>517</b>	<b>786</b>	<b>2725</b>	<b>240</b>		

## CHAPTER 8

### ACADEMIC PROGRAMME

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Subject: **APPLIED HEALTH SCIENCES I.**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **56**

Seminar: **42**

#### **1. week**

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

1. Basic chemical concepts, structure of atoms.

#### **2. week**

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

2. Types and law radioactive decay.

#### **3. week**

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

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

#### **4. week**

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

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

#### **5. week**

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

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

#### **6. week**

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

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

#### **7. week**

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

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

#### **8. week**

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

2. Radiation and its interaction with absorbing matter. Detection of radiation. Radiation biophysics: target theory, direct and indirect action of radiation, dosimetry, the biological effect of radiation. Experimental, diagnostic and therapeutic applications of radioactive isotopes; accelerators.

**9. week**

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

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

**10. week**

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

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

**11. week**

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

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

**12. week**

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

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

**13. week**

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

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

**14. week**

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

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

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

Subject: **ANATOMY**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **42**

Seminar: **28**

**1. week**

Lecture: 1. Covering and lining epithelia 2. Glandular epithelium 3. Connective tissues

Seminar: -

**2. week**

Lecture: 1. Adipose tissue. Cartilage 2. Bone. Bone formation 3. Muscle tissue

Seminar: Histology: Epithelial tissues

**3. week**

Lecture: 1. Blood vessels 2. Blood 3. Bone marrow and blood formation

Seminar: Histology: Connective tissue

**4. week**

Lecture: 1. Histology of lymphatic organs I. 2. Histology of lymphatic organs II. 3. Fertilization and cleavage

Seminar: Histology: Adipose tissue, cartilage and bone

**5. week**

Lecture: 1. Gastrulation, formation of the mesoderm 2. Differentiation of the ectoderm and mesoderm 3. Differentiation of the entoderm, folding of the embryo

Seminar: Histology: Bone formation and muscle tissue

**6. week**

Lecture: 1. Fetal membranes and placenta. The fetal period. Twins 2. Osteology and arthrology -introduction 3. The upper limb

Seminar: Histology: Blood vessels and blood. Bone marrow and blood formation

**7. week**

Lecture: 1. The lower limb 2. The skull and the back 3. Anatomy of the head and neck

Seminar: Histology: Histology of lymphatic organs

**8. week**

Lecture: 1. Nasal and oral cavities 2. The pharynx and the larynx 3. The heart I.

Seminar: Anatomy: Upper and lower limbs on Histology seminar: **1st Self Control Test**

**9. week**

Lecture: 1. The heart II. 2. The trachea, lungs and pleura 3. Histology of the lung

Seminar: Anatomy: The anatomy of the head, neck and back

**10. week**

Lecture: 1. Development of the lung and heart 2. Circulatory system. The vascular system of the embryo 3. The oesophagus and the stomach

Seminar: Histology: The histology of the respiratory system

**11. week**

Lecture: 1. Small and large intestines 2. The pancreas. The liver I.

3. The liver II. The system of the portal vein seminar: Anatomy: The anatomy of the heart and the respiratory system

**12. week**

Lecture: 1. The peritoneum and the retroperitoneum 2. Neuroendocrine regulation.

Hypothalamo-hypophyseal system 3. Epiphysis, thyroid, parathyroid and adrenal glands

Seminar: Histology: The histology of the alimentary system

**13. week**

Lecture: 1. The kidney 2. The urinary system 3. Male genital organs

Seminar: Histology: Histology of the endocrine system

**14. week**

Lecture: 1. Female genital organs I. 2. Female genital organs II. 3. Development of the urogenital

system

Seminar: Histology: Histology of the kidney and genital organs

Anatomy: The anatomy of the alimentary system and the urogenital apparatus

2nd Self Control Test

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

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **42**

Seminar: **14**

Practical: **42**

**1. week**

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

**2. week**

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

**3. week**

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

**4. week**

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

**5. week**

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

**6. week**

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

**7. week**

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

**8. week**

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

**9. week**

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

**10. week**

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

**11. week**

Lecture: Physical examination of the respiratory and cardiovascular system.

**12. week**

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

**13. week**

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

**14. week**

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

**Requirements**

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

Subject: **INTRODUCTION TO BASICS OF BIOSTATISTICS**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Seminar: **14**

Practical: **14**

**1st week:**

Lecture: The role and importance of statistical analysis

Practical: Introduction to Microsoft Excell

**2nd week:**

Lecture: Basic data management, types of variables

Practical: Data management 1

**3rd week:**

Lecture: Presenting data by measures and charts

Practical: Data management 2, charts, descriptive statistics

**4th week:**

Lecture: Theoretical basics of interval estimation

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

**5th week:**

Lecture: Estimating the population mean

Practical: Confidence Interval for a Population Mean

**6th week:**

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

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

**7th week:**

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

Practical: One-sample t-test of mean

**8th week:**

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

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

**9th week:**

Lecture: Comparing more means

Practical: One-way analysis of variance (ANOVA)

**10th week:**

Lecture: Nonparametric and distribution-free statistics

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

**11th week:**

Lecture: Estimating probability, proportion and odds

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

**12th week:**

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

Practical: Chi-square test statisti

**13th week:**

Lecture: Introduction to the regression modeling

Practical: Simple linear regression

**14th week:**

Lecture: The multiple linear regression model

Practical: Multiple linear regression



Subject: **HEALTH INFORMATICS I.**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **10**

Practical: **18**

### **1. week**

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

Introduction

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

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

### **2. week**

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

### **3. week**

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

### **4. week**

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

### **5. week**

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

### **6. week**

TEST (MOODLE: Multiple Choice from the Lecture material)

### **7. week**

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

### **8. week**

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

### **9. week**

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

### **10. week**

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

**11. week**

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

**12. week**

MS EXCEL: PIVOT Table + practice

**13. week**

MS EXCEL: practice

**14. week**

TEST (Practical EXCEL (exercises solving with computer))

Subject: **FIRST AID**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **14**

Practical: **14**

**1. week**

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

**2. week**

Lecture: Unconsciousness; airway obstruction; airway opening maneuvers.

**3. week**

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

**4. week**

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

**5. week**

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

**6. week**

Practical: AVPU, ABCDE approachment.

**7. week**

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

**8. week**

Practical: Practicing the ventilation.

**9. week**

Practical: Complex CPR training, usage of AED.

**10. week**

Practical: Practical exam.

**11. week**

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

**12. week**

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

**13. week**

Practical: Basic trauma care.

**14. week**

Practical: Consultation, written test.

Self Control Test

### **Requirements**

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

Subject: **WORK SAFETY AND FIRE PROTECTION**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Seminar: **14**

Subject: **LATIN LANGUAGE**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Practical: **28**

**1. week**

Class introduction and Introduction to medical terminology

**2. week**

Anatomical positions, planes and directions

**3. week**

Parts of the body

**4. week**

Basic elements of Latin grammar

**5. week**

Regions of the human body

**6. week**

Formation of adjectives

**7. week**

Mid-term Test

**8. week**

The skeletal system 1

**9. week**

The skeletal system 2; Plural forms

**10. week**

Joints; complex adjectives

**11. week**

The muscular system

**12. week**

Greek roots; Latin and Greek prefixes

**13. week**

End-term Test

**14. week**

Evaluation; re-take tests (if needed)

Subject: **ROGER'S CONVERSATION**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Lecture: **7**

Seminar: **7**

Subject: **PHYSICAL EDUCATION I.**

Year, Semester: 1st year/1st semester

Number of teaching hours:

Practical: **28**

Content:

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

Pilates, Speed Minton, cardio-workout

## Requirements

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

Registering for the Physical Education courses:

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

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

If you have any question don't hesitate to ask: [nvkata@med.unideb.hu](mailto:nvkata@med.unideb.hu)

Subject: **APPLIED HEALTH SCIENCES II.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **56**

Seminar: **42**

### 1. week

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

### 2. week

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

### 3. week

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

### 4. week

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

### 5. week

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

### 6. week

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

### 7. week

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

### 8. week

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

### 9. week

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

**10. week**

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

**11. week**

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

**12. week**

1. Coagulation and the complement system 2. Biophysics of respiration 3. Intracellular Ca<sup>2+</sup>

**13. week**

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

**14. week**

1. Biochemistry of bones and cartilages. Vitamins

Subject: **BASICS OF DIETETICS**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

**8. week**

Introduction of dietetic nutrition. Basic definitions. Energy and food requirements. Nutrients.

**9. week**

Characteristics for the nutrition of the Hungarian population. Hungarian nutrition recommendation.

**10. week**

Food product knowledge. Food preparation methods. Basics of menu planning.

**11. week**

Counting appropriate energy and nutrient intake for individuals.

**12. week**

Obesity. Opportunities the healthy losing weight.

**13. week**

Diet of Diabetes mellitus. Diet in Osteoporosis. Diet in Celiac Disease.

**14. week**

Eating disorders. Possibilities of roboration. Food allergies treatment.

Subject: **HEALTH INFORMATICS II.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **10**

Practical: **18**

**1. week**

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

**2. week**

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

Operations of a relational data model. Normalization.

**3. week**

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

**4. week**

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

**5. week**

TEST (MOODLE: Multiple Choice from the Lecture material)

**6. week**

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

**7. week**

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

**8. week**

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

**9. week**

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

**10. week**

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

**11. week**

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

**12. week**

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

**13. week**

DATABASE MANAGEMENT: Task Solution I.

**14. week**

DATABASE MANAGEMENT: Task solution II.

**15. week**

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

Subject: **PHYSIOLOGY I.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **28**

Seminar: **14**

**1. week**

Lecture: Membrane transport mechanisms; cell-cell communication; humoral regulation of cell function; Ligands, ligand-binding receptors, signalisation pathways. Basis of the excitatory processes, resting potential, local response, action potential. Propagation of the action potential, synaptic function.

Seminar: Course requirements.

**2. week**

Lecture: Compartmentalization of body fluids; blood as a circulating body fluid; plasma and formed

elements (red blood cells, white blood cells, platelets). Blood typing. Haemostasis.

Seminar: Membrane transport mechanisms, electric characteristics of the cell membrane. Synaptic function.

### **3. week**

Lecture: 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.

Seminar: Compartmentalization of body fluids. The blood as a circulating body fluid. Homeostasis.

### **4. week**

Lecture: Characteristics of peripheral circulation; principles of haemodynamics; functional characteristics of blood vessels; vascular tone; main determinants of arterial blood pressure.

Seminar: Cardiac functions.

### **5. week**

Lecture: Regulation of visceral functions; common and different features of sympathetic and parasympathetic regulation; characteristics of the connections between autonomic nerves and the innervated structures. Integrated function of the sympathetic nervous system and the adrenal medulla. Neural and humoral regulation of the cardiovascular system.

Seminar: Characteristics of the peripheral circulation.

### **6. week**

Lecture: Respiratory physiology: mechanics of breathing; alveolar ventilation; gas transport in the blood; neural and chemical control of breathing

Seminar: 1<sup>st</sup> mid-semester test: cell physiology, blood, circulatory system

### **7. week**

Lecture: Function of the digestive system. Motor and secretory function of the gastrointestinal tract; digestion, absorption

Seminar: Function of the respiratory system.

### **8. week**

Lecture: Nutrition (food requirements, regulation of food intake); energy balance, thermoregulation.

Seminar: Function of the digestive system.

### **9. week**

Lecture: General aspects of renal function; glomerular filtration; types of tubular transport processes; characteristic parameters of the renal function

Seminar: Quantitative and qualitative aspects of diet. Thermoregulation and energy balance.

### **10. week**

Lecture: Hormonal regulation; paracrine and endocrine mechanisms; hypothalamo-hypophyseal system; neurohormones and tropic hormones

Seminar: 2<sup>nd</sup> mid-semester test: respiration, digestive system, kidney

### **11. week**

Lecture: Thyroid hormones (T3 and T4); endocrine regulation of basal metabolic rate.

Physiological effects of corticosteroids. Significance of the ionized calcium concentration in the blood; regulation of calcium handling. PTH and calcitonin.

Seminar: Basics of the hormonal regulation.

### **12. week**

Lecture: Endocrine function of the pancreas; significance and complex hormonal regulation of blood glucose level

Seminar: Complex hormonal regulation of the intermediate metabolism.

### **13. week**

Lecture: Sexual hormones. Overview of the complex neural regulation. Somatic and autonomic nervous system; voluntary and reflex regulation

Seminar: Osteoporosis. Abnormal blood glucose level.

### **14. week**

Lecture: Sensory function of the nervous system. Physiological basis of vision and hearing. Motor function of nervous system: function of skeletal muscles, neural regulatory mechanisms.



Seminar: Function of skeletal muscles, neural regulatory mechanisms  
3<sup>rd</sup> mid-semester test: hormonal and neural regulation

### Requirements

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

Evaluation during the semester

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

Examination

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

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

0 – 54 % fail (1)

55 – 64 % pass (2)

65 – 74 % satisfactory (3)

75 – 84 % good (4)

85 – 100 % excellent (5)

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

Subject: **BASICS OF EPIDEMIOLOGY**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

#### **1. week**

Introduction, history of epidemiology

Student demonstrations - classical epidemiology

#### **2. week**

Population observation: basics of demography

Demographic measures

#### **3. week**

Epidemiological measures 1: frequency measures

Epidemiological measures 1: frequency measures

#### **4. week**

Epidemiological measures 2: association measures

Epidemiological measures 2: association measures

#### **5. week**

Study types

Study types

#### **6. week**

Descriptive studies: cross-sectional, ecological

Descriptive studies: cross-sectional, ecological

#### **7. week**

Cohort study

Cohort study

**8. week**

Case control study

Case control study

**9. week**

Interventional study

Interventional study

**10. week**

Standardization

Standardization

**11. week**

Random error, selection bias

Random error, selection bias

**12. week**

Accuracy, validity

Accuracy, validity

**13. week**

Confounders

Confounders

**14. week**

Information bias, causation

Information bias, causation

Subject: **COMMUNICATION**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Seminar: **14**

**1. week**

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

**2. week**

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

**3. week**

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

**4. week**

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

**5. week**

Lecture: Communication Disorders. Special issues in communication. Management of the conflicts occurred during the helping relationship. Communication with the elderly. Communication with impaired persons. Communication with the 'difficult' patient. Communication with acute patients.

Practical: Discussing the semester's tasks, the conditions of getting a mark, preparation for the field practice. Getting acquainted, introduction. Expectations and fears.

**6. week**

Practical: Review of the basic concepts of communication, communication channels.

**7. week**

Practical: Verbal and non-verbal communication.

**8. week**

Practical: Empathy, problems of empathy, active listening. Collaborative communication.

**9. week**

Practical: Significance of the first impression. Analysis of our own communication styles.

Aggressive, passive and assertive communication. Persuasive communication.

**10. week**

Practical: Film – the doctor.

**11. week**

Practical: Film – analyzing its communicational aspect.

**12. week**

Practical: Field practice – observation (no course).

**13. week**

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

**14. week**

Practical: Presentation of the field practice and feedbacks.

Subject: **BASICS OF RESEARCH METHODOLOGY**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **28**

**1. week**

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

**2. week**

Lecture: Types and process of scientific research

**3. week**

Lecture: Ethics of science

**4. week**

Lecture: Methods of quantitative research I

**5. week**

Lecture: Methods of quantitative research II

**6. week**

Lecture: Methods of qualitative research

**7. week**

Lecture: Orientation in the library

**8. week**

Lecture: Orientation in the scientific literature I

**9. week**

Lecture: Orientation in the scientific literature II

**10. week**

Lecture: Study design

**11. week**

Lecture: Collecting data, measurements, observations

**12. week**

Lecture: Data storage, processing, and analysis

**13. week**

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

**14. week**

Lecture: Rules of scientific publication

### **Requirements**

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

topics. E-learning course contains the course material.

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

<54%: (1) fail

55-64%: (2) pass

65-74%: (3) satisfactory

75-84%: (4) good

85-100%: (5) excellent

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

Subject: **BASICS OF QUALITY ASSURANCE**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

**1. week**

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

**2. week**

Seminar: What quality means to me?

**3. week**

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

**4. week**

Seminar: Discussion of Donabedian model

**5. week**

Lecture: Assessment of quality of healthcare services, types of audit

**6. week**

Seminar: Measurement of quality of healthcare by Donabedian model

**7. week**

Lecture: Quality problems in healthcare

**8. week**

Seminar: Prioritizing quality problems

**9. week**

Lecture: Quality improvement and quality tools

**10. week**

Seminar: Planning a quality improvement project

**11. week**

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

**12. week**

Lecture: Clinical audit

**13. week**

Seminar: Planning of a clinical audit projects by teams

**14. week**

Seminar: Presentation and discussion of quality improvement projects 1.

## Requirements

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

Subject: **ECOLOGY**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Lecture: **28**

Seminar: **14**

### **1. week**

Lecture: Introduction to the course

Seminar: Mountain Sickness

### **2. week**

Lecture: Role of small habitat islands in human transformed landscapes – nature conservation, cultural and ecosystem services

Seminar: Global warming and its health impacts – „Six Degrees Could Change the World”

### **3. week**

Lecture: Island biogeography

Seminar: The Large Hadron Collider.

### **4. week**

Lecture: Conservation and management of grassland ecosystems

Seminar: Thermoregulation, blood glucose homeostasis and osmoregulation.

### **5. week**

Lecture: First exam and consultation

Seminar: Relationships between species: African trypanosomes.

### **6. week**

Lecture: Ecological succession

Seminar: Big Forest of Debrecen and Lesser Mole Rat Reserve of Hajdúbágos.

### **7. week**

Lecture: Application of remote sensing in ecology

Seminar: Orchid Habitat Restoration and Preservation.

### **8. week**

Lecture: Ecosystem ecology, ecological systems

Seminar: Coral reefs in danger

### **9. week**

Lecture: Ecosystem services and ecological footprint

Seminar: Water ecosystems

### **10. week**

Lecture: Second exam and consultation

Seminar: Social life of ants.

### **11. week**

Lecture: Ecological impacts of invasive plant and animal species in a changing world

Seminar: Genetically modified organisms.

### **12. week**

Lecture: Urbanisation, urban ecology

Seminar: Origin of the Earth's atmosphere

### **13. week**

Lecture: Third exam

Seminar: Industrially important bacteria

#### **14. week**

Lecture: Possibility for repeating exams

Seminar: Bacteria as Multicellular Organisms

#### **Requirements**

*- for a signature*

Participation at classes is compulsory. A student must attend the classes and may not miss more than three times during the semester. In case a student does so, the subject will not be signed and the student must repeat the course. In case of more than three absences, a medical certificate needs to be presented.

*-an offered grade:*

During the semester there are three midterm tests related to the lectures and a multiple choice test related to the seminars which is at the end of the semester.

The offered grade is the average of them.

The minimum requirement for the tests (and also for the exam) is 60%. The grade for the tests and the examination is given according to the following table:

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

*- for a grade*

The course ends in a written exam. If a student takes the exam, the calculation of the final grade is the average of the grade for the written exam and the grade for the seminar.

For the grades please refer the table above.

#### **Literature**

- Pásztor L., Botta-Dukát Z., Magyar G., Czárán T., Meszéna G. (2016) Theory-Based Ecology A Darwinian approach. Oxford University Press, pp. 301. ISBN: 978-01-995-7785-9

- Robert J. Whittaker, José María Fernández-Palacios (2007): Island Biogeography Ecology, evolution, and conservation Oxford University Press, USA ISBN 978-01-985-6612-0

Subject: **HUNGARIAN LANGUAGE I.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Practical: **28**

#### **1. week**

Practical: 1. lecke (Greetings, the alphabet, numbers 0-20, colours, everyday expressions)

#### **2. week**

Practical: 2. lecke (Nationalities, languages, numbers 21-29)

#### **3. week**

Practical: 3. lecke, 4. lecke (Names of places, the days of the week, numbers 30-100, the time, hány óra van?, Test Your Knowledge 1)

#### **4. week**

Practical: 5. lecke (adjectives and adverbs, verbs expressing activities 1, times of day, hány órákor?, numbers 1000-1000000000)

**5. week**

Practical: 6. lecke (verbs expressing activities 2, everyday expressions, ordinal numbers)

**6. week**

Practical: 7. lecke (Revision 1 Units 1-6)

**7. week**

Practical: Midterm test

**8. week**

Practical: 8. lecke (everyday objects, food and drink, adverbs of frequency)

**9. week**

Practical: 9. lecke (Food, drink, fruit, vegetables, the menu, ordering in a restaurant, shopping in the market, the uses of tessék)

**10. week**

Practical: 10. lecke (the weather, the seasons and months, clothes)

**11. week**

Practical: 11. lecke (Test Your Knowledge 2) , 12. lecke I. rész (body parts)

**12. week**

Practical: 12. lecke II.rész (adjectives and descriptions, accessories) , 13. lecke (jobs, places, personal details and filling in a form, family relations)

**13. week**

Practical: 14. lecke (Revision 2 Units 8-13)

**14. week**

Practical: End term test

### Requirements

Requirements of the course: Attending language classes is compulsory. Students should not be absent from more than 10 percent of the classes. If a student is late it is considered as an absence. If a student misses more than two occasions, the final signature may be refused and the student must repeat the course.

Absentees can make up the missed classes in the same week. Maximum one language class may be made up with another group. Students have to ask for the teacher's written permission (by e-mail) 24 hours in advance. Students can attend any class (make up or regular) only if they take their course book with them.

The teacher evaluates active participation in each class. Students are not supposed to share course books in the classes therefore if they fail to bring the course book to the class for the second time the attendance is refused.

Testing, evaluation

In each Hungarian language course, students must sit for 2 written language tests and an oral exam. A further minimum requirement is the knowledge of 200 words per semester divided into 10 word quizzes. There are five word quizzes before and another five after the midterm test. If students fail or miss any word quizzes they cannot start their written test and have to take a vocabulary exam that includes all 100 words before the midterm and end term tests. A word quiz can be postponed by a week and students can take it only with their own teacher. Students can get bonus points (5-5%) by taking two extra quizzes containing 20 sentences each before the midterm and end term tests. The sentences are taken from the units of the course book.

The oral exam consists of a role-play from a list of situations covered in the course book. If students fail the oral exam, they fail the whole course. The results of the written tests and the oral exam are combined and averaged.

Based on the final score the grades are given as follows.

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

If the final score of the written tests is below 60, the student can take a written remedial exam once covering the whole semester's material.

**Course book:** See the website of the Department of Foreign Languages: [ilekt.med.unideb.hu](http://ilekt.med.unideb.hu).

Audio files to the course book, oral exam topics and vocabulary minimum lists are also available on the website.

Subject: **PHYSICAL EDUCATION II.**

Year, Semester: 1st year/2nd semester

Number of teaching hours:

Practical: **28**

Subject: **BASICS OF PSYCHOLOGY I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

**1. week**

Lecture: Introduction

**2. week**

Lecture: Nature of psychology: main fields, theories and methods.

**3. week**

Lecture: Early attachment, mother-child bonding. Intimate relationships in adulthood.

**4. week**

Lecture: Phases of psychological development. The newborn's skills. Cognitive development in childhood.

**5. week**

Lecture: Normative life crises (Erikson). The course of dying. Death, grief.

**6. week**

Lecture: Learning and conditioning: different approaches of learning. Classical and operant conditioning.

**7. week**

Lecture: Motivation: rewards and incentives, urges, homeostasis, hunger and sexuality

**8. week**

Lecture: Emotions: arousal, expression of emotions, reactions to emotional states, aggression.

**9. week**

Lecture: Personality: psychoanalytic, behavioral and phenomenological approach.

**10. week**

Lecture: Stress and coping: stress-provoking events, psychological and physiological reactions to stress. The effects of stress on health. Coping skills.

**11. week**

Lecture: Social behavior: attitudes, attraction, obedience, resistance and identification. Collective decisions.

**12. week**

Lecture: Biopsychosocial model. Health behaviors: definition, demographic determinants. The



model of health beliefs, variables influencing health attitudes.

**13. week**

Lecture: Illness behaviors: definition, the experience of illness, patient role. Representations and benefits of illness. Illness cognitions.

**14. week**

Lecture: Illness as crisis. Chronic illness, hospitalization.

### **Requirements**

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

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Practical: **42**

**1. week**

Practical: 1. fejezet: Emlékszik?

**2. week**

Practical: 1. fejezet: Emlékszik? / Tegezés-Önözés

**3. week**

Practical: 2. fejezet: Tegezés-Önözés

**4. week**

Practical: 3. fejezet: Élelmiszerek 1.

**5. week**

Practical: 4. fejezet: Élelmiszerek 2.

**6. week**

Practical: 5. fejezet: Étkezések, étteremben 1.

**7. week**

Practical: 6. fejezet: Étkezések étteremben 2.

**8. week**

Practical: 7. fejezet: Összefoglalás, midterm test

**9. week**

Practical: 8. fejezet: A városban 1.

**10. week**

Practical: 9. fejezet: A városban 2.

**11. week**

Practical: 10. fejezet: Édes otthon 1.

**12. week**

Practical: 11. fejezet: Édes otthon 2.

**13. week**

Practical: 12. fejezet: Összefoglalás

**14. week**

Practical: 13. fejezet: Preparing for the oral exam, end term test

### **Requirements**

Requirements of the course:

Attendance

Attending language classes is compulsory. Students should not be absent from more than 10 percent of the classes. If a student is late it is considered as an absence. If a student misses more than two

occasions, the final signature may be refused and the student must repeat the course.

Absentees can make up the missed classes in the same week. Maximum one language class may be made up with another group. Students have to ask for the teacher's written permission (by e-mail) 24 hours in advance. Students can attend any class (make up or regular) only if they take their course book with them.

The teacher evaluates active participation in each class. Students are not supposed to share course books in the classes therefore if they fail to bring the course book to the class for the second time the attendance is refused.

Testing, evaluation

In each Hungarian language course, students must sit for 2 written language tests and an oral exam. A further minimum requirement is the knowledge of 200 words per semester divided into 10 word quizzes. There are five word quizzes before and another five after the midterm test. If students fail or miss any word quizzes they cannot start their written test and have to take a vocabulary exam that includes all 100 words before the midterm and end term tests. A word quiz can be postponed by a week and students can take it only with their own teacher. Students can get bonus points (5-5%) by taking two extra quizzes containing 20 sentences each before the midterm and end term tests. The sentences are taken from the units of the course book.

The oral exam consists of a role-play from a list of situations covered in the course book. If students fail the oral exam, they fail the whole course. The results of the written tests and the oral exam are combined and averaged.

Based on the final score the grades are given as follows.

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

If the final score of the written tests is below 60, the student once can take a written remedial exam once covering the whole semester's material.

**Course book:** See the website of the Department of Foreign Languages: [ilekt.med.unideb.hu](http://ilekt.med.unideb.hu).

Subject: **PHYSIOLOGY II.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

Seminar: **14**

Practical: **14**

Topics

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

Regulation of visceral functions; characteristics of sympathetic and parasympathetic regulation.

Subject: **INTRODUCTION TO LAW**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

**1. week**

Introduction to law, concept of law

**2. week**

The legal system, legal norm

**3. week**

Sources of law, scope of legislation

**4. week**

The state and its functions

**5. week**

Branches of governance, separation of powers

**6. week**

The parliament, the government

**7. week**

The president, the constitutional court

**8. week**

The judicial system

**9. week**

Legal relationships

**10. week**

Civil, political and personal rights

**11. week**

Corporations

**12. week**

Property law

**13. week**

Contractual law

**14. week**

Civil law - Criminal law

Subject: **MICROBIOLOGY I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

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

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

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

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

Bacterial vaccines. Antimicrobial drugs. Chemoprophylaxis. Antibiotic sensitivity.

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

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

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

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

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

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

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

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

General mycology. Medically important fungi. General properties of fungi. Dermatomycoses, Subcutaneous mycoses. Systemic and opportunistic mycoses. Clinical diagnosis.

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

Subject: **PUBLIC HEALTH MEDICINE I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **28**

Seminar: **28**

**1. week**

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

**2. week**

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

**3. week**

Lecture: Haematological diseases. Anaemia, myeloproliferative diseases

**4. week**

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

**5. week**

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

**6. week**

Lecture: Metabolic diseases. Diabetes, Hyperlipidaemia, Gout, Porphyria

### **7. week**

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

### **8. week**

Lecture: Infectious diseases. Acute and chronic infectious diseases

### **9. week**

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

### **10. week**

Lecture: Endocrinological diseases

### **11. week**

Lecture: Diseases of the kidney

### **12. week**

Lecture: Neurological diseases

### **13. week**

Lecture: Psychiatry. Psychosis, schizophrenia, alcoholism, delirium.

### **14. week**

Lecture: Paediatric diseases. Dental diseases

## **Requirements**

**Attendance of both lectures and practices is mandatory.** Presence is going to be recorded on your attendance sheet (to be brought for each occasion by the student). At the end of lectures/practices every student is going to get a stamp and signature from the lecturer/practice leader. In case of absence signature will be refused (except for cases of documented serious diseases or other reasonable causes - to be discussed with your educational coordinator).

On week 14. lecture books are going to be signed by the coordinator if all the necessary stamps and signatures have been collected

### **Evaluation:**

Lecture and practice topics will be asked at the end of the semester.

Lectures will be available on the following website: <http://www.nepegeszseg.hu/pdf/>

*Compulsory reading: Topics of lectures and practices*

*Further reading:*

*CURRENT Medical Diagnosis and Treatment, Edited by Stephen J. McPhee, Maxine A. Papadakis, Michael W. Rabow 2012, Fifty-First Edition (LANGE CURRENT Series), McGraw-Hill, 2011.*

*Harrison's Principles of Internal Medicine, Dan Longo, Anthony Fauci, Dennis Kasper, Stephen Hauser, J. Jameson, Joseph Loscalzo 18th Edition, 2011*

*Oxford Handbook of Public Health Practice Edited by Charles Guest, Walter Ricciardi, Ichiro Kawachi, and Iain Lang (2013, Third Edition)*

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

Those who fail 2 times on the written exam during the exam period are going to take an oral exam (exam topics are the same as lecture and practice topics).

Subject: **EPIDEMIOLOGY OF COMMUNICABLE AND NON-COMMUNICABLE DISEASES I.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Lecture: **14**

Seminar: **42**

Vaccinations, Vaccines

Vaccine efficacy

The world health report

Levels of prevention, preventive strategies

Emerging and re-emerging infectious diseases

HFA database

The theoretical basis for screening programs

HFA database (2)

Public Health Databases

The advantages and disadvantages of different preventive strategies

Health monitoring

Screening programs

Literature Research

Epidemiology and prevention of cardiovascular diseases

Health Surveys

Study design- a measurement the frequency of a non-communicable disease - a theoretical framework

Study Writing

Literature search using PubMed

Epidemiology of metabolic disorders

Study design- a measurement the frequency of a non-communicable disease – presentation

Epidemiology of liver and gastrointestinal diseases

Study design- a measurement the frequency of a non-communicable disease – presentation

Cancer Epidemiology and Prevention

Epidemiology of cancer

Epidemiology of chronic respiratory diseases

The epidemiology of cancer - presentation

The epidemiology and prevention of accidents and musculoskeletal disorders

Basics of health economics

Subject: **HUNGARIAN LANGUAGE II.**

Year, Semester: 2nd year/1st semester

Number of teaching hours:

Practical: **28**

**1. week:** 1. lecke: Itt az ideje gyakorolni revision

**2. week:** 2. lecke: Zoli, a debreceni randiguru

**3. week:** 3. lecke: UniBike és a Nagyerdő

**4. week:** 4. lecke: Debrecenbe utazik a családom

- 5. week:** 5. lecke: Panoráma a Nagytemplomból
- 6. week:** 6. lecke: Együtt a család Debrecenben (Revision)
- 7. week:** 7. lecke: Van kedved moziba menni?
- 8. week:** 8. lecke: Megyünk az egyetemre
- 9. week:** 9. lecke: Mit csinálsz a Malomparkban?
- 10. week:** 10. lecke: Kirándulunk Hortobágyon
- 11. week:** 11. lecke: Ez az utolsó óra? (Revision)
- 12. week:** Szóbeli vizsgára készülés
- 13. week:** Revision/End-term
- 14. week:** Oral exam

Subject: **PROFESSIONAL HUNGARIAN LANGUAGE II.**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Practical: **56**

- 6. week:** Ismétlés, Emlékszel?
- 7. week:** Testrészek, Tünetek
- 8. week:** Tünetek, Gyógyszerek
- 9. week:** Klinikák és szakorvosok
- 10. week:** Lassítsunk egy kicsit! Összefoglalás
- 11. week:** Zárthelyi dolgozat, Szoktál kanapészörfölni?, Jó és rossz szokások
- 12. week:** Tessék mondani
- 13. week:** Anamnézis
- 14. week:** Összefoglaló, Zárthelyi dolgozat; Szóbeli vizsga

Subject: **PRINCIPLES OF HEALTH SCIENCES**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

Subject: **HEALTH CARE LAW**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

**1. week**

Introduction to administrative law

Sources of administrative law

**2. week**

Management and control in public administration

Principles of public administration

**3. week**

Administrative proceedings

Types of cases

**4. week**

Significance of administrative proceedings

Administrative sanctioning measures

**5. week**

Application, request, suit

Nonsuit

**6. week**

Probative proceedings

**7. week**

The president, the constitutional court

Evidence

**8. week**

Closure of the procedure

Termination

**9. week**

Representation and suspension

Agency

**10. week**

Rulings

Case study

**11. week**

Procedural documents

Documents, public documents, official certificates

**12. week**

Fines

Sanctions of public administration

**13. week**

Timeline

Deadlines

**14. week**

Licensing health care services. Minimum requirements of health care services

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

Subject: **ENVIRONMENTAL HEALTH**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **28**

Seminar: **28**

**1. week**

Lecture: Scope of environmental health

Seminar: Introduction to the seminar work, requirement of the subjects, instructions for preparing power point presentation by the 14th week of the semester

**2. week**

Lecture: Introduction to toxicology

Seminar: The disaster of Seveso – case study

**3. week**

Lecture: Air pollution and health

Seminar: The London smog of December 1952 – case study

**4. week**

Lecture: Water pollution and health

Seminar: Environmental arsenic poisoning – case study

**5. week**

Lecture: Soil contamination and health

Seminar: Environmental cadmium poisoning – case study

**6. week**

Lecture: Health effects of non-ionising radiation and electromagnetic fields

Seminar: Mobile phone use and brain cancer risk



### **7. week**

Lecture: Health effects of ionising radiation and radioactive substances

Seminar: Nuclear accidents and protection of the general public

### **8. week**

Lecture: Food-borne diseases, food poisoning

Seminar: Midterm test

### **9. week**

Lecture: Health effects of noise and vibration

Practice: Chemical and microbiological examination of drinking water  
(laboratory practice for small group)

### **10. week**

Lecture: Hazardous substances in the environment

Practice: Chemical and microbiological examination of drinking water  
(laboratory practice for small group)

### **11. week**

Lecture: Body defence mechanisms against the adverse effects of environmental exposures

Seminar: Environmental lead poisoning – case study

### **12. week**

Lecture: Health implications of waste and hazardous waste

Seminar: Chemical safety

### **13. week**

Lecture: Global environmental changes and human health

Seminar: Environmental PCB poisoning – case study

### **14. week:**

Lecture: Environmental justice and environmental health policy

Seminar: Student presentations

Subject: **MICROBIOLOGY II.**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **14**

### **1. week**

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

### **2. week**

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

### **3. week**

Lecture: Structure of bacterial cells. Essential and nonessential components. Exotoxins and endotoxins. Non-toxic virulence factors

### **4. week**

Lecture: Overview of the major Gram- positive bacteria

### **5. week**

Lecture: Overview of the major and Gram-negative bacteria

### **6. week**

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

### **7. week**

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

### **8. week**

Lecture: General mycology. Medically important fungi

**9. week**

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

**10. week**

Lecture: Respiratory tract infections caused by viruses

**11. week**

Lecture: Agents of viral gastroenteritis. Hepatitis viruses

**12. week**

Lecture: Agents of viral skin rash. Congenital virus infections

**13. week**

Lecture: The protozoal diseases

**14. week**

Lecture: Helminths. Ectoparasites

### Requirements

The students are required to attend the lectures.

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

Subject: **PUBLIC HEALTH MEDICINE II.**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **28**

Seminar: **28**

**1. week**

Lecture: Clinical diagnosis. History, physical examination, investigations. Laboratory diagnosis, Imaging techniques, Functional tests

**2. week**

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

**3. week**

Lecture: Haematological diseases. Anaemia, myeloproliferative diseases

**4. 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

**5. week**

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

**6. week**

Lecture: Metabolic diseases. Diabetes, Hyperlipidaemia, Gout, Porphyria

**7. week**

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

**8. week**

Lecture: Infectious diseases. Acute and chronic infectious diseases

**9. week**

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

**10. week**

Lecture: Endocrinological diseases

**11. week**

Lecture: Diseases of the kidney

**12. week**

Lecture: Neurological diseases

**13. week**

Lecture: Psychiatry. Psychosis, schizophrenia, alcoholism, delirium

**14. week**

Lecture: Paediatric diseases. Dental diseases

**Requirements**

**Attendance of both lectures and practices is mandatory.** Presence is going to be recorded on your attendance sheet (to be brought for each occasion by the student). At the end of lectures/practices every student is going to get a stamp and signature from the lecturer/practice leader. In case of absence signature will be refused (except for cases of documented serious diseases or other reasonable causes - to be discussed with your educational coordinator).

On week 14. lecture books are going to be signed by the coordinator if all the necessary stamps and signatures have been collected

**Evaluation:**

Lecture and practice topics will be asked at the end of the semester.

Lectures will be available on the following website: <http://www.nepegeszseg.hu/pdf/>

*Compulsory reading: Topics of lectures and practices*

*Further reading:*

*CURRENT Medical Diagnosis and Treatment, Edited by Stephen J. McPhee, Maxine A. Papadakis, Michael W. Rabow 2012, Fifty-First Edition (LANGE CURRENT Series), McGraw-Hill, 2011.*

*Harrison's Principles of Internal Medicine, Dan Longo, Anthony Fauci, Dennis Kasper, Stephen Hauser, J. Jameson, Joseph Loscalzo 18th Edition, 2011*

*Oxford Handbook of Public Health Practice Edited by Charles Guest, Walter Ricciardi, Ichiro Kawachi, and Iain Lang (2013, Third Edition)*

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

Subject: **PSYCHOLOGICAL AND ADDICTOLOGICAL KNOWLEDGE**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **28**

Subject: **EPIDEMIOLOGY OF COMMUNICABLE AND NON-COMMUNICABLE DISEASES II.**

Year, Semester: 2nd year/2nd semester

Number of teaching hours:

Lecture: **14**

Seminar: **28**

**1. week**

Lecture: Vaccinations, Vaccines

Seminar: Vaccine efficacy

**2. week**

Lecture: The world health report, Levels of prevention, preventive strategies

**3. week**

Lecture: Emerging and re-emerging infectious diseases

Seminar: HFA database

**4. week**

Lecture: The theoretical basis for screening programs

Seminar: HFA database (2)

**5. week**

Lecture: Public Health Databases

Seminar: The advantages and disadvantages of different preventive strategies

**6. week**

Lecture: Health monitoring

Seminar: Screening programs

**7. week**

Lecture: Literature Research

Seminar: Epidemiology and prevention of cardiovascular diseases

**8. week**

Lecture: Health Surveys

Seminar: Study design- a measurement the frequency of a non-communicable disease – a theoretical framework

**9. week**

Lecture: Study Writing

Seminar: Literature search using PubMed

**10. week**

Lecture: Epidemiology of metabolic disorders

Seminar: Study design- a measurement the frequency of a non-communicable disease

**11. week**

Lecture: Epidemiology of liver and gastrointestinal diseases

Seminar: Study design- a measurement the frequency of a non-communicable disease

**12. week**

Lecture: Cancer Epidemiology and Prevention

Seminar: Epidemiology of cancer

**13. week**

Lecture: Epidemiology of chronic respiratory diseases

Seminar: The epidemiology of cancer (2)

**14. week**

Lecture: The epidemiology and prevention of accidents. Basics of health economics

Subject: **BASICS OF PEDAGOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

**1. week**

Lecture: Basic concepts of pedagogy

**2. week**

Lecture: Principles of pedagogical activity

**3. week**

Lecture: Theories and trends in pedagogy

**4. week**

Lecture: Elements of pedagogical influence

**5. week**

Lecture: Values and aims/Process of pedagogical influence

**6. week**

Lecture: Fields of personality development

**7. week**

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

**8. week**

Lecture: Process of teaching and learning

**9. week**

Lecture: Edifying conduct

**10. week**

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

**11. week**

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

**12. week**

Lecture: Key participants and their communication

**13. week**

Lecture: Consultation

**14. week**

Lecture: Theoretical and practical issues of planning

Subject: **BASICS OF SOCIOLOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

**1. week**

Lecture: Introduction to sociology. Basic concepts. Sociology and public health. Problems and perspectives

**2. week**

Lecture: Social structures. Social stratification. Systems of stratification. Basic theories of stratification

**3. week**

Lecture: Social class. Ethnicity. Agism. Gender. Minority groups

**4. week**

Lecture: Culture, norms and deviance

**5. week**

Lecture: Marriage, family and kinship

**6. week**

Lecture: Global sociology, global poverty

**7. week**

Lecture: Sociological research methods

### Requirements

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

Subject: **HEALTH PROMOTION AND HEALTH POLICY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

Seminar: **28**

**1. week**

Lecture: Fundamentals, aims and objectives of health policy. Objectives of health policy – prevention and treatments.

Seminar: Replay Health game

**2. week**

Lecture: The parties in health policy and power.

Seminar: The parties in health policy and power in your country.

**3. week**

Lecture: Health care market is special. Economic models to demand, supply, and their interaction in the medical economy. Rationale for health policy.

Seminar: Sicko 1.

**4. week**

Lecture: Health care systems. Financing options and allocation of health care resources.

Seminar: Sicko 2.

**5. week**

Lecture: Cost effectiveness in health programs

Seminar: How to compare cost-effectiveness of healthcare programs?

**6. week**

Lecture: Health Policy in an international context.

Seminar: TrustWHO.

**7. week**

Lecture: Impact of health policy. Performance measurement in the health care.

Seminar: Indicators of the performance measurement in the health care.

**8. week**

Lecture: Smoking policy and anti-smoking legislation.

Seminar: The Insider 1.

**9. week**

Lecture: Sugary drink tax and similar policies

Seminar: The Insider 2.

**10. week**

Lecture: Principles and actions of health promotion.

Seminar: Action for disease prevention and health promotion

**11. week**

Lecture: Models of health

Seminar: Infrastructure of health promotion

**12. week**

Lecture: Good presentation, bad presentation.

Seminar: Critical reading.

**13. week**

Lecture: Effective communication.

Seminar: Critical evaluation of the sources of scientific information (UD Library, PubMed, Cochrane Reviews, WHO, CDC)

**14. week**

Lecture: Health education

Seminar: Search for background materials in health topics (nutrition, physical activity, psychoactive substances, sexual behaviour, estimation of cardiovascular risk)

### **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. The subject leader may refuse to sign the lecture book if a student is absent more than twice in a semester even if he/she has an acceptable excuse.

Examination:

Type of the exam: end-of-semester examination.

Form of exam: Students are required to perform an oral presentation regarding a health policy topic during the semester. During the exam period the students are required to take an online written test which will cover the topics of all lectures and seminars of the semester. The final mark is determined by the presentation score (33%) and the exam result (66%).

Evaluation: five-grade scale

Subject: **PHILOSOPHY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

**1. week**

Lecture: Martin Heidegger: What is Metaphysics?

**2. week**

Lecture: Martin Heidegger: What is Metaphysics?

**3. week**

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

**4. week**

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

**5. week**

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

**6. week**

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

**7. week**

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

**8. week**

## Requirements

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

Subject: **OCCUPATIONAL HEALTH**

Year, Semester: 3rd year/1st semester

Number of teaching hours: **56**

Lecture: **28**

Seminar: **20**

Practice: **8**

### **1. week**

Lecture: Introduction to occupational health and safety. History and the subject of occupational medicine and occupational hygiene

Seminar/practice Organizational structure of occupational health and safety

### **2. week**

Lecture: A Physiology of work, fitness to work. Occupational hazard and risk

Seminar/practice: Criteria, classification and reporting of occupational diseases

### **3. week**

Lecture: Workplace prevention. Environmental and biological monitoring

Seminar/practice: Occupational exposure limits

### **4. week**

Lecture: Physical workplace hazards (noise, vibration, temperature, pressure)

Seminar/practice: Measurement and evaluation of occupational noise and heat exposure

### **5. week**

Lecture: Physical workplace hazards (ionizing and non-ionizing radiation)

Seminar/practice: Measurement and evaluation of occupational exposure to radiation

### **6. week**

Lecture: Chemical workplace hazards (metals, gasses)

Seminar/practice: Chemical safety

### **7. week**

Lecture: Chemical workplace hazards (solvents, plastics, pesticides)

Seminar/practice: Measurement and evaluation of occupational chemical exposures

### **8. week**

Lecture: Workplace aerosol exposure (dusts and fibers)

Seminar/practice: Measurement and evaluation of occupational aerosol exposures

### **9. week**

Lecture: Chemical workplace hazards (mutagens, carcinogens, teratogens)

Seminar/practice: Mutagenicity tests (laboratory practice)

### **10. week**

Lecture: Biological workplace hazards

Seminar/practice: Measurement and evaluation of occupational biological exposures

### **11. week**

Lecture: Mechanical (ergonomic) workplace hazards, occupational accidents

Seminar/practice: Occupational safety

### **12. week**

Lecture: Occupational psychosocial hazards

Seminar/practice: Workplace communication (situation exercise)

### **13. week**



Lecture: Occupational health and safety evaluation of industrial processes I  
Seminar/practice: Preparation for student presentations

**14. week**

Lecture: Occupational health and safety evaluation of industrial processes II  
Seminar/practice: Student presentations

Subject: **ECONOMICS AND MANAGEMENT**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

**1. week**

Lecture: The background of the Hungarian health system in the aspect of law. Basic definitions.

**2. week**

Lecture: The construction and the levels of the health system, its conditions of functions and obligations.

**3. week**

Lecture: The constitution of financing according to the sources (OEP, state support, own income or other sources) in health institutes.

**4. week**

Lecture: The actual questions and the background of patient documentation according to the rules of law. The patient documentation system of the UDMHSC.

**5. week**

Lecture: The basic rules of employing manpower in the health system.

**6. week**

Lecture: The tools of human resource from recruitment to labor development.

**7. week**

Lecture: Conflict management – amicable settlement of disputes during work.

**8. week**

Lecture: Fame, reputation and image. The determination and the complex interpretation of the institute's image. Interdependence between image and PR. The tools of PR and PR in tools.

**9. week**

Lecture: PR as Public Affairs, connection with the media and press, relations to the government, issue management/conflict management.

**10. week**

Lecture: Effective communication in connection with tenders in the projects' preparatory, effectuate and later stages.

**11. week**

Lecture: Tendering possibilities in public health nowadays.

**12. week**

Lecture: Quality control and quality assurance in health institutes (tasks and opportunities). Quality assurance as a supportive tool of decision preparation.

**13. week**

Lecture: The social circumstances and the background of quality assurance in the aspect of law, profession and economy.

**14. week**

Lecture: The estimation and the measurement of the level of health care nowadays.

## 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.

With the agreement of the teacher correction of the mark is possible by making a new essay on a different topic.

Subject: **PHARMACOLOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

### **1. week**

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

### **2. week**

Lecture: Introduction to general pharmacology: pharmacokinetics and pharmacodynamics

### **3. week**

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

### **4. week**

Lecture: Noradrenergic transmission and other peripheral mediators

### **5. week**

Lecture: The heart. Drugs that affect cardiac function

### **6. week**

Lecture: The vascular system. Atherosclerosis and lipoprotein metabolism

### **7. week**

Lecture: Respiratory pharmacology. The kidney

### **8. week**

Lecture: Drugs used in the treatment of infections

### **9. week**

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

### **10. week**

Lecture: Endocrine drugs

### **11. week**

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

### **12. week**

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

### **13. week**

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

### **14. week**

Lecture: Muscle relaxants

## Requirements

Prerequisites: Pathology

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

Subject: **IMMUNOLOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

**1. week**

Lecture: Tissues/organs of the immune system: Functions of central lymphoid organs. Functions of peripheral lymphoid organs. Features of antigens. Cellular and humoral immunity – Direct and indirect interactions.

**2. week**

Lecture: Cellular components of the immune system: The development of the major lineages of blood cells.

**3. week**

Lecture: Antigen recognition (non-specific or specific): Antigen recognition and effector functions of innate immune system. Antigen recognition and effector functions of adaptive immune system.

**4. week**

Lecture: T cells; types and functions: Development of T-lymphocytes, TCR variability. Structure of TCR. Cytotoxic T cells. Helper and regulatory T cells.

**5. week**

Lecture: The collaboration between innate and adaptive immunity – I. Mechanism of antigen presentation. Structure of MHC molecules. Immunological synapse – Koreceptors and costimulatory molecules.

**6. week**

Lecture: Triggering of immune response by B cells: Development of B-lymphocytes, BCR variability. Antibody production by plasma cells. Effector functions of secreted antibodies (neutralization, opsonization, phagocytosis).

**7. week**

Lecture: Structure of antibodies: Production of various antibody isotypes and their functions. Affinity maturation, somatic recombination, isotype switching.

**8. week**

Lecture: The collaboration between innate and adaptive immunity – II. Professional antigen presenting cell mediated T cell polarization. Effect of cytokines on innate immune response. Effector functions of T cells. T cell priming and activation of effector T lymphocytes. Cooperation of T and B cells. T cell-independent and Tcell-dependent B cell activation

**9. week**

Lecture: The immune response to intracellular pathogens. Immune response to viral infection. The immune response to extracellular pathogens.

**10. week**

Lecture: Inflammation. Chemokine mediated migration of leukocytes.

**11. week**

Lecture: Immunological memory. Passive and active immunisation.

**12. week**

Lecture: Hypersensitivity reactions.

**13. week**

Lecture: Mechanisms of the development of autoimmune diseases.

**14. week**

Lecture: Consultation.

Subject: **INFECTOLOGY**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **14**

Practical: **14**

Subject: **HEALTH CARE LAW I.**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

**1.week**

Introduction to administrative law Sources of administrative law

**2.week**

Management and control in public administration Principles of public administration

**3.week**

Administrative proceedings Types of cases

**4.week**

Significance of administrative proceedings Administrative sanctioning measures

**5.week**

Application, request, suit Nonsuit

**6.week**

Probative proceedings

**7.week**

The president, the constitutional court Evidence

**8.week**

Closure of the procedure Termination

**9.week**

Representation and suspension Agency

**10.week**

Rulings Case study

**11.week**

Procedural documents, Documents, public documents, official certificates

**12.week**

Fines Sanctions of public administration

**13.week**

Timeline Deadlines

**14.week**

Licensing health care services. Minimum requirements of health care services

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

Subject: **PUBLIC HEALTH MEDICINE III.**

Year, Semester: 3rd year/1st semester

Number of teaching hours:

Lecture: **28**

Practical: **28**

**1. week**

Lecture: Important gynecological disorders (STDs, gynecological neoplasms, infertility). Causes, prevention and treatment options.

Practical: General gynecological examination. Taking a proper gynecological history. The most common complaints in gynecology.

**2. week**

Lecture: Important gynecological disorders (contraception, the basics of sexual education).

Practical: General gynecological examination. Imaging techniques and laboratory tests in gynecology. Contraceptive methods. The basics of infertility. Preparing for the child.

### **3. week**

Lecture: Important disorders in obstetrics (Premature birth. Complications, prevention and treatment)

Practical: General obstetrical examination. Taking a proper obstetrical history. Obstetrical check-ups.

### **4. week**

Lecture: Different types of gastrointestinal infections (gastroenteritis)

### **5. week**

Lecture: Hepatitis

### **6. week**

Lecture: Nosocomial infections

### **7. week**

Lecture: The commonest disorders and causes of death in Pediatrics, Prevention in Pediatrics

Practical: Case reports

### **8. week**

Lecture: Oncology in Pediatrics, Prevention and rehabilitation

Practical: Case reports

### **9. week**

Lecture: Diseases of the periodontium

Practical: Prevention of periodontal disorders

### **10. week**

Lecture: The commonest disorders in Dentistry (caries)

Practical: Dental screening, prevention and treatment

### **11. week**

Lecture: The commonest types of malignancies, risk factors and social effects.

Practical: Case presentations connected to lecture topics between

### **12. week**

Lecture: Prevention and diagnosis in Oncology

Practical: Case presentations connected to lecture topics between

### **13. week**

Lecture: Clinical features and treatment options of the commonest malignancies (breast cancer, lung cancer, prostate cancer, colic cancer)

Practical: Case presentations connected to lecture topics between

### **14. week**

Lecture: Palliation. Miracle drugs in Oncology

Practical: Case presentations connected to lecture topics between

## **Requirements**

***Attendance of both lectures and practices is mandatory.*** Presence is going to be recorded on your attendance sheet (to be brought for each occasion by the student). At the end of lectures/practices every student is going to get a stamp and signature from the lecturer/practice leader. In case of absence signature will be refused (except for cases of documented serious diseases or other reasonable causes - to be discussed with your educational coordinator).

On week 14. lecture books are going to be signed by the coordinator if all the necessary stamps and signatures have been collected

### **Evaluation:**

Lecture and practice topics will be asked at the end of the semester.

Lectures will be available on the following website: <http://www.nepegeszseg.hu/pdf/>

*Compulsory reading: Topics of lectures and practices*

*Further reading:*

*CURRENT Medical Diagnosis and Treatment, Edited by Stephen J. McPhee, Maxine A. Papadakis, Michael W. Rabow 2012, Fifty-First Edition (LANGE CURRENT Series), McGraw-Hill, 2011.*  
*Harrison's Principles of Internal Medicine, Dan Longo, Anthony Fauci, Dennis Kasper, Stephen Hauser, J. Jameson, Joseph Loscalzo 18th Edition, 2011*  
*Oxford Handbook of Public Health Practice Edited by Charles Guest, Walter Ricciardi, Ichiro Kawachi, and Iain Lang (2013, Third Edition)*

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

Subject: **BIOETHICS**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **14**

**1. week**

Lecture: Introduction to modern ethics. The basics of bioethics

**2. week**

Lecture: The relationship between morality, ethics, professional ethics and the law.

**3. week**

Lecture: Ethical theories and principles

**4. week**

Lecture: Patients' Rights

**5. week**

Lecture: Confidentiality and privacy in healthcare

**6. week**

Lecture: Autonomy and self-determination

**7. week**

Lecture: Ethics of clinical research

**8. week**

Lecture: Ethics of animal experimentation

**9. week**

Lecture: Ethics at the beginning of life

**10. week**

Lecture: Ethics and end-of-life decision-making

**11. week**

Lecture: Ethics of organ transplantation

**12. week**

Lecture: Ethical theory and moral judgement

**13. week**

Lecture: Ethical case presentation

**14. week**

Lecture: Ethical case presentation

### 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: **HEALTH SOCIOLOGY**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **28**

**1. week**

Lecture: Introduction to sociology of health, revision of basic sociological concepts and the sociological perspective

**2. week**

Lecture: Theories of disease causation, the social determinants of health and disease

**3. week**

Lecture: Society and changing patterns of disease, historical and cross regional perspectives.

**4. week**

Lecture: Sociology and public health, economy and health policy. The sociology of poverty-inequality and health

**5. week**

Lecture: Social structure and health-gender, age and ethnicity

**6. week**

Lecture: Case studies: morbidity and mortality in Nigeria, China, Hungary and the UK from the sociological perspective

**7. week**

Lecture: Health behaviour and illness behaviour, the case of chronic illness

**8. week**

Lecture: The sociology of health care organisations

**9. week**

Lecture: Informal health care, community care and self help

**10. week**

Lecture: Medicalisation

**11. week**

Lecture: Deviance, sick role, anomie and stigma

**12. week**

Lecture: Sociological research methods, measuring health outcomes, the anatomy of research articles

**13. week**

Lecture: The socio-cultural aspects of the AIDS epidemic in Africa

**14. week**

Lecture: Summary, conclusions



Subject: **HEALTH ANTROPOLOGY**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Seminar: **15**

**1. week**

Lecture: Introduction, methods, tasks

**2. week**

Lecture: The importance of an anthropological perspective in public health

**3. week**

Lecture: Methods of approach I.: science vs. hermeneutics

**4. week**

Lecture: Methods of approach II: modern vs. postmodern

**5. week**

Lecture: How culture can influence disease and health issues

**6. week**

Lecture: Relationship between CAM and biomedicine I.

**7. week**

Lecture: Relationship between CAM and biomedicine II

**8. week**

Lecture: Body concepts in cultural perspectives

**9. week**

Lecture: Medicalization in cultural context

**10. week**

Lecture: Medicalization and health caresystems II.

**11. week**

Lecture: Pain and suffering in cultural context

**12. week**

Lecture: The aspects and meanings of death and dying

**13. week**

Lecture: Mental health in cultural context I.

**14. week**

Lecture: Mental health in cultural context II.

Subject: **CHILD AND ADOLESCENT HEALTH**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **28**

**1. week**

*Lecture:* Demographic, mortality and morbidity data regarding child health care.

*Seminar/practice:-*

**2. week**

*Lecture:* Child health services: organisation, place in the health care system, tasks and activities.

*Seminar/practice: -*

**3. week**

*Lecture:* Development of infants, children and adolescents. Methods of the assessment.

*Seminar/practice:-*

**4. week**

*Lecture:* Infant feeding and nutrition in childhood and adolescence.

*Seminar/practice: -*

**5. week**

*Lecture:* Primary prevention in infants, children and adolescents.

*Seminar/practice:-*

**6. week**

*Lecture:* Childhood surveillance and screening.

*Seminar/practice: -*

**7. week**

*Lecture:* Continuous care of children with chronic diseases.

*Seminar/practice: -*

**8. week**

*Lecture:* Care of infants, children, adolescents with special needs.

*Seminar/practice:-*

**9. week**

*Lecture:* Physical activity and physical education.

*Seminar/practice:-*

**10. week**

*Lecture:* Obesity and its consequences in childhood and adolescence.

*Seminar/practice:-*

**11. week**

*Lecture:* Smoking, alcohol and drug abuse in childhood and adolescence.

*Seminar/practice: -*

**12. week**

*Lecture:* Puberty, its disturbances and adolescents' sexuality.

*Seminar/practice: -*

**13. week**

*Lecture:* Psychological problems and harmful behaviours in adolescence.

*Seminar/practice:-*

**14. week**

*Lecture:* Child abuse and vulnerability. Health improvement in childhood and adolescence.

*Seminar/practice: -*

## **Requirements**

The subject leader may refuse to sign the lecture book if a student is absent more than twice in a semester even if he/she has an acceptable excuse.

Students are required to perform an oral presentation during the semester. During the exam period the students are required to take an online written test which will cover the topics of all lectures of the semester. Evaluation of the written test is assessed on a five-grade scale. The final mark is determined by the presentation score (33%) and the exam result (66%).

Subject: **HEALTH CARE LAW II.**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **28**

**1. week**

Lecture: Principles of health care law

Practical: The role of the state

**2. week**

Lecture: System of health services

Practical: Role of the government and society

**3. week**

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

Practical: Authority

**4. week**

Lecture: Professional requirements of health services

Practical: Operating principles

**5. week**

Lecture: Health care organization and management

Practical: Law and ethics

**6. week**

Lecture: Public health

Practical: Possibilities of enforcement

**7. week**

Lecture: Health promotion, family and women's care, youth health care, sports health care, environment and settlement health, food and nutrition health

Practical: Criminal and civil sanctions

**8. week**

Lecture: Radiation Health, occupational health, infectious disease control

Practical: Research Involving Human Gametes and Embryos

**9. week**

Lecture: Patients' rights and obligations

Practical: Rules and conditions of medical sterilization

**10. week**

Lecture: Rights and duties of health care workers

Practical: Procedures of authority

**11. week**

Lecture: Medical research on humans

Practical: Supporting and enforcing health-oriented legislation

**12. week**

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

Practical: Administration and coordination

**13. week**

Lecture: Treatment and care of psychiatric patients

Practical: Medical inspection

**14. week**

Lecture: Organ and tissue transplantation, blood provision

Practical: Health development

Subject: **PUBLIC HEALTH MEDICINE IV.**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Lecture: **28**

Practical: **28**

**1. week**

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

**2. week**

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

**3. week**

Lecture: Haematological diseases Anaemia, myeloproliferative diseases

**4. 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

**5. week**

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

**6. week**

Lecture: Metabolic diseases Diabetes, Hyperlipidaemia, Gout, Porphyria

**7. week**

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

**8. week**

Lecture: Infectious diseases Acute and chronic infectious diseases

**9. week**

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

**10. week**

Lecture: Endocrinological diseases

**11. week**

Lecture: Diseases of the kidney

**12. week**

Lecture: Neurological diseases

**13. week**

Lecture: Psychiatry Psychosis, schizophrenia, alcoholism, delirium

**14. week**

Lecture: Paediatric diseases Dental diseases

### Requirements

***Attendance of both lectures and practices is mandatory.*** Presence is going to be recorded on your attendance sheet (to be brought for each occasion by the student). At the end of lectures/practices every student is going to get a stamp and signature from the lecturer/practice leader. In case of absence signature will be refused (except for cases of documented serious diseases or other reasonable causes - to be discussed with your educational coordinator).

On week 14. lecture books are going to be signed by the coordinator if all the necessary stamps and signatures have been collected

**Evaluation:**

Lecture and practice topics will be asked at the end of the semester.

Lectures will be available on the following website: <http://www.nepegeszseg.hu/pdf/>

*Compulsory reading: Topics of lectures and practices*

*Further reading:*

*CURRENT Medical Diagnosis and Treatment, Edited by Stephen J. McPhee, Maxine A. Papadakis, Michael W. Rabow 2012, Fifty-First Edition (LANGE CURRENT Series), McGraw-Hill, 2011.*

*Harrison's Principles of Internal Medicine, Dan Longo, Anthony Fauci, Dennis Kasper, Stephen Hauser, J. Jameson, Joseph Loscalzo 18th Edition, 2011*

*Oxford Handbook of Public Health Practice Edited by Charles Guest, Walter Ricciardi, Ichiro Kawachi, and Iain Lang (2013, Third Edition)*

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

**Subject: FIELD AND LABORATORY PRACTICE I.**

Year, Semester: 3rd year/2nd semester

Number of teaching hours:

Practical: **168**

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 pharmaceuticals

**Subject: TERRESTRIAL ENVIRONMENTAL PROTECTION**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Lecture: **18**

Overview of global problems

Basics of restoration ecology

Key steps and aspects of ecological restoration

Social aspects of terrestrial and environmental protection and restoration  
Fire prone ecosystems and the role of fire in nature  
Biodiversity, historical and technical aspects  
Global biodiversity assessment, biodiversity hotspots  
Dispersal and seed banks supporting biodiversity  
Rangelands and grassland restoration

Subject: **THESIS I.**

Year, Semester: 3rd year/2nd semester

Subject: **HEALTH PROMOTION**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **10**

Practical: **18**

**1. week**

Lecture: History and principles of health promotion.

Seminar/practice: -

**2. week**

Lecture: Determinants of health 1: policy.

Seminar/practice: -

**3. week**

Lecture: -

Seminar/practice: Determinants of health 2: environment, health care, behaviour of individuals and groups.

**4. week**

Lecture: Lifecourse in health: childhood and adult health.

Seminar/practice: -

**5. week**

Lecture: -

Seminar/practice: Determinants of health 3: communities.

**6. week**

Lecture:-

Seminar/practice: Community development.

**7. week**

Lecture: Models of behaviour change.

Seminar/practice: -

**8. week**

Lecture: -

Seminar/practice: Behaviour change: motivation and skill improvement.

**9. week**

Lecture: -

Seminar/practice: Behaviour change among adolescents: peer education.

**10. week**

Lecture: -

Seminar/practice: Health promotion at settings.

**11. week**

Lecture: -

Seminar/practice: Basics of project planning.

## **12. week**

Lecture:-

Seminar/practice: Public health projects.

## **13. week**

Lecture: Public health problems of disadvantaged populations.

Seminar/practice: -

## **14. week**

Lecture:-

Seminar/practice: Group presentations.

### **Requirements**

Attendance of the lectures and seminars is obligatory and is a precondition of signing the lecture book, maximum two absences are allowed in the semester. The subject leader may refuse to sign the lecture book if a student is absent more than twice in a semester even if he/she has an acceptable excuse.

Students are required to perform a health promotion project plan in form of a group presentation at the end of the semester. During the exam period the students are required to take a written test which will cover the topics of all lectures and seminars of the semester. Evaluation of the written test is assessed on a five-grade scale. The final mark is determined by the presentation score (33%) and the exam result (66%).

Subject: **HEALTH PROMOTION IN PRIMARY CARE**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Practical: **14**

## **1. week**

Practical: Introduction to health promotion. Determinants of health: environment and health care

## **2. week**

Practical: History and principles of health promotion. Determinants of health: policy

## **3. week**

Practical: Health promotion at settings. Prevention

## **4. week**

Practical: Prevention. Project, program, strategy. Basics of project planning

## **5. week**

Practical: Public health projects

## **6. week**

Practical: Physiotherapist in the healthcare system

## **7. week**

Practical: Physiotherapy in the primary care

### **Requirements**

Attendance at practices is compulsory. If you miss more than 2 practical hours, the signature of the Lecture Book may be refused.

Subject: **PROFESSIONAL HEALTH CARE COMMUNICATION (Communication of Health Information for Not Qualified People)**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **14**

Practical: **14**

Subject: **EPIDEMIOLOGICAL AND BIostatistical KNOWLEDGE**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Practical: **14**

Subject: **HOSPITAL HYGIENE**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Practical: **14**

Subject: **FIELD AND LABORATORY PRACTICE II.**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Practical: **168**

Epidemics

Primary determinants of epidemics

Inf.dis. Presentations by Students

Prev. Of inf.diseases

Sterilization-visit

Disinfection. Hand washing-pres.

Vaccination

Summary - examination paper

Epidemic curves

Principles of gas chromatography

Steps of outbreak investigation

Visit: plastic industry

Case control and cohort studies in epid.

Epid. Of comm. Diseases. Summary

**Subject: NUTRITIONAL HEALTH AND FOOD SAFETY**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **14**

Practical: **28**

Basic knowledge

Food guide pyramids

Nutr. Requirement of population

What is healthy eating?

Dietary and diseases risks

Assessment of nutritional status

Nutritional disorders

Prevention of the malnutrition

Food related diseases

Hygiene in catering

Food intoxications

Toxins produced by microorganisms



Summary  
Control on topic  
Principles of HACCP  
Safety requirements in communal feeding  
Obesity  
Diabetes mellitus  
Summary: food safety  
Control on topic

Subject: **AQUATIC ENVIRONMENTAL PROTECTION**

Year, Semester: 4th year/1st semester

Number of teaching hours:

Lecture: **18**

**1. week**

Lecture: Introduction to aquatic environmental protection.

**2. week**

Lecture: Hydrosphere. Water distribution on Earth. Hydrologic cycle and its components.

**3. week**

Lecture: Water management. Concept of water resources management. Water demands and water use. Static and dynamic water resources

**4. week**

Lecture: Water quality I: Water quality indicators: physical, chemical and biological parameters. Biological water quality classification (trophity, halobity, saprobity, toxicity). Water quality protection.

**5. week**

Practice: Water quality II: Evaluation of water toxicity by test organisms: Algal growth inhibition test, Daphnia acute immobilization test, Fish acute toxicity test and Seed germination (*Sinapis alba*) test.

**6. week**

Lecture: The EU Water Framework Directive (WFD). Objectives and implementation of WFD.

**7. week**

Lecture: Characterization of surface and groundwater resources. Principal sources and causes of water pollution. General categories of water contaminants. Control of water pollution.

**8. week**

Lecture: Definition and requirements of drinking water. Drinking water production.

**9. week**

Lecture: Definition of wastewater. Types and characteristics of wastewater. Wastewater treatment.

**10. week**

Lecture: Cultural eutrophication. Causes of eutrophication. Eutrophication processes. Controlling eutrophication.

**11. week**

Lecture: Wetlands. Characteristics of these habitats and the main causes of their destruction. Reservoirs of biodiversity.

**12. week**

Lecture: The main international conferences on the protection of the environment from Stockholm to present days. The Ramsar Convention.

**13. week**

Practice: Visit to the Surface Water Treatment Plant in Balmazújváros.

**14. week**

Practice: Student presentations

**Requirements:**

Attendance on the lectures is highly recommended, participation in practices is obligatory. Furthermore, during the semester students should give an oral presentation from a freely chosen topic in the fields of terrestrial environmental protection by using the scientific literature. Attendance of the practices and a well-made presentation are preconditions of fulfilling the requirements.

**Examination**

At the end of the semester, students are required to take a Final Exam. The exam includes 15 multiple choice test questions and 5 short questions (20 x 2 points). The control tests, including the topics of the lectures and practices, will be given during the semester.

Subject: **THESIS II.**

Year, Semester: 4th year/2nd semester

Subject: **APPLIED EPIDEMIOLOGY**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Lecture: **14**

Practical: **14**

**1. week**

Introduction to epidemiological studies

**2. week**

Experimental and non-experimental epidemiological studies

**3. week**

Research questions

**4. week**

Epidemiological models

**5. week**

Frequently used epidemiological studies

**6. week**

Statistical interpretation of results

**7. week**

Confidence intervals

**8. week**

t-test, Chi-square test, ANOVA

**9. week**

Risk Ratio, Odds ratio

**10. week**

Linear regression

**11. week**

Logistic regression

**12. week**

Confounders

**13. week**

Statistical tests (summary)

**14. week**

Answering the research question

Subject: **INFECTION CONTROL**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Lecture: **14**

Practical: **14**

Subject: **PLANNING PUBLIC HEALTH PROGRAMS**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Lecture: **14**

Practical: **14**

Subject: **FIELD AND LABORATORY PRACTICE III.**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **168**

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 pharmaceuticals

Subject: **CARDIOPULMONARY RESUSCITATION (CPR)**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **14**

Subject: **THESIS III.**

Year, Semester: 4th year/2nd semester

Number of teaching hours:

Practical: **14**

## CHAPTER 9

### LIST OF TEXTBOOKS

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#### **Hungarian Language:**

Gerő Ildikó-Kovács Judit: Színesen magyarul.2017.

#### **Psychology:**

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

Hergenhahn, B. R.: An Introduction to the History of Psychology. 7th edition. Cengage Learning, 2013. ISBN: 978-1133958093.

Nolen-Hoeksema, S., Fredrickson, B., Loftus, G., Wagenaar, W.: Atkinson and Hilgard's Introduction to Psychology. 15th edition. Wadsworth Pub. Co, 2009.

#### **Public health medicine (I-IV):**

Current Medical Diagnosis and Treatment, Edited by Stephen J. McPhee, Maxine A. Papadakis, Michael W. Rabow 2012, Fifty-First Edition (LANGE CURRENT Series), McGraw-Hill, 2011.

Harrison's Principles of Internal Medicine, Dan Longo, Anthony Fauci, Dennis Kasper, Stephen Hauser, J. Jameson, Joseph Loscalzo 18th Edition, 2011

Oxford Handbook of Public Health Practice Edited by Charles Guest, Walter Ricciardi, Ichiro Kawachi, and Iain Lang (2013,Third Edition)

Lectures will be available on the following website: <http://www.nepegeszseg.hu/pdf/>

#### **Communication:**

Pilling János: Medical Communication. Medicina Könyvkiadó, 2011. ISBN: 9789632263359.

Csabai, M. and Molnar, P.: Health, Illness and Care. A Textbook of Medical Psychology. Springer, Budapest, 2000.

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

#### **Bioethics:**

Tom L. Beauchamp and James F. Childress: The principles of biomedical ethics. 7th edition, (chapter given at the lectures) ISBN: 9780199924585. 2012.

#### **First aid:**

Kindersley D.: First Aid Manual .10th edition. Dorling Kindersley Publishers Ltd, 2011. ISBN: 9781-4053-6214-6.

St. John Ambulance, St. Andrew's Ambulance Association, British Red Cross Society: First Aid Manual: The Step by Step Guide for Everyone. 9th edition. Penguin, 2009. ISBN: 1-405-33537-8.

Van de Velde S, et al: European first aid guidelines. Resuscitation, 72:240-51.2007.

József Betlehem: First Things to Be Done in Emergencies – Providing First Aid for Health Professionals. Medicina Könyvkiadó Zrt., 2012.

#### **Hungarian Language I:**

Gerő Ildikó-Kovács Judit: Színesen magyarul.2017.

## **Basics of Sociology:**

Weitz, R.: The Sociology of Health, Illness, and Health Care: A Critical Approach. 6th. Wadsworth Publishing, 2012. ISBN: 1-1118-2879-2.

Denny, E., Earle, S.: Sociology for Nurses. 2nd edition. Polity Press, 2009. ISBN: 0-7456-4625-5.  
<http://www.sociologyofhealth.net>.

## **Ecology:**

Begon M., Townsend C.R., Harper J. L.: Ecology: From Individuals to Ecosystems. 4th Edition. Blackwell Publishing Ltd., 2006.

Chapman J. L., Reiss M. J.: Ecology: principles and applications. Cambridge University Press.

Schowalter T.D.: Insect Ecology: An Ecosystem Approach. Fourth Edition. Elsevier, London, 2016. ISBN: 9780128030332.

Smith R. L: Ecology and Field Biology. Harper Collins College Publishers, New York, 1996. ISBN: 9780065009767.

All topics of the lectures and seminars.

## **Health informatics:**

Handbooks of MS Office applications, Internet sources.

## **Latin language:**

Répás László: Basics of Medical Terminology, Latin and Greek Origins I. Répás László, 2016.

Martin, E.: Oxford Concise Medical Dictionary. 9th. Oxford University Press, 2015. ISBN: 978-0199-6878-17.

## **Philosophy:**

Gaardner, J.: Sophie's World: A Novel About the History of Philosophy. Reprint edition. Farrar, Straus and Giroux, 2007. ISBN: 0-5223-5934-8.

Additional Reading: Dawson, A. (ed): Public Health Ethics: Key Concepts and Issues in Policy and Practice. New York, NY. Cambridge University Press, 2011. ISBN: 978-0521689366.

## **Anatomy:**

Moore, K. L., Agur, A. M. R.: Essential Clinical Anatomy. 5th edition. Lippincott Williams & Wilkins, 2014. ISBN: 1-4511-8749-1.

Sadler, T. W.: Langman's Medical Embryology. 12th edition. Lippincott Williams & Wilkins, 2012. ISBN: 978-1-4511-4461-1.

Sobotta: Atlas of Human Anatomy I.-II.. 14th edition. Urban & Schwarzenberg, . ISBN: 978-0-443-10349-0.

A. Birinyi (Ed): Anatomy. 2nd. University of Debrecen, 2008.

L.P. Gartner: Concise Histology. Saunders, Elsevier, 2011. ISBN: 978-0-7020-3114-4.

## **Basics of biostatistics:**

Kirkwood B., Sterne JAC.: Essential medical statistics. Blackwell Science, Oxford, 2006.

Swinscow TDV, Campbell MJ: Statistics at Square One.  
(<http://resources.bmj.com/bmj/readers/statistics-at-square-one/>).

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## **CHAPTER 10**

### **TITLES OF THESES**

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**Klára Bíró PhD.**

Thesis:

Increasing expectations among healthcare consumers  
Challenges for healthcare managers

**László Kardos PhD.**

Thesis:

Cutoff optimization of classification systems on the principle of  
misclassification burden minimization

**Ágnes Tóth PhD.**

Thesis:

Magnetic Resonance Imaging of Bones and Joints

**Balázs Lukács PhD.**

Thesis:

Study of the incidence, causes and consequences of falls in the elderly  
Interventions to prevent falls in elderly

**Éva Csepregi MSc**

Thesis:

Assessment of posture among physiotherapy students