The University of Pécs Medical School

GENERAL MEDICINE Major

STUDY PROGRAM 2011/2012

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Elective subjects
**Course director:**

**DR. JÓZSEF ORBÁN, assistant lecturer**  
Department of Biophysics

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**Number of hours/semester:**  
0 lectures + 0 practices + 28 seminars = total of 28 hours

**Headcount limitations (min-max.):**  
min. 5 – max. 25

**Prerequisites:**

- 

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**Topic**

The course addresses the chapters of physics which are necessary for a proper understanding of biophysics. Beyond theoretical discussions, example problems are solved.

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**Conditions for acceptance of the semester**

Making up for missed classes

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**Reading material**

Lectures

Practices

Seminars

1. Mathematical basics  
2. Mathematical basics  
3. Physical quantities and units  
4. Scalars and vectors  
5. Motion on a straight line. Velocity, acceleration  
6. Newton’s laws  
7. Frictional forces  
8. Uniform circular motion  
10. Motion of rigid bodies. Torque  
11. Work and energy. The work-energy theorem  
12. Conservation of mechanical energy  
13. Kinetic theory of gases  
14. First law of thermodynamics  
15. Second law of thermodynamics.  
16. Thermodynamic potentials  
17. Harmonic oscillations  
18. Waves  
19. Hydrostatics  
20. Hydrodynamics  
21. Electrostatics  
22. Ohm’s law, Kirchhoff’s laws  
23. Electromagnetic induction. Alternating current  
24. Electromagnetic waves  
25. Propagation of light. Refraction, reflection, interference  
26. Geometrical optics  
27. Test writing  
28. Test writing

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**Exam topics/questions**

Can be found on the website of the Department of Biophysics ([http://biofizika.aok.pte.hu](http://biofizika.aok.pte.hu))

**Participants**

Barkó Szilvia (BASFAA.T.JPTE), Dr. Grama László (GRLHAAO.PTE), Dr. Orbán József (ORJAAA.T.JPTE), Huber Tamás (HUTEAB.T.JPTE), Kardos Roland (KARFAB.T.JPTE), Szatmári Dávid Zoltán (SZDHAAT.PTE), Ujfalusi Zoltán (UJZDAA.T.JPTE), Vig Andrea Teréz (VIAFAAO.PTE)
OAEELH OBESITY - THE "EPIDEMIC" OF THE MODERN AGE

Course director: DR. DÉNES MOLNÁR, professor
Department of Paediatrics

1 credit • midsemester grade • Elective module • both semesters semester • recommended semester: 1

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 20

Prerequisites: -

Topic

The general aim of the course is to emphasise the importance of (primary) prevention within medicine and to develop preventive approach in students. Obesity, childhood obesity is a problem, which became a common disease by nowadays, and it is one of the main risk factors of the leading cardiovascular and cancerous deaths. The review of the significance and deficiency of health promotion and the phenomenon and consequences of globalisation.

Those who accomplish the course will have the opportunity to give presentations in this topic in primary and secondary schools, thus making use of their knowledge gained, and as future doctors participating in the development of the health care system.

For the accomplishment of the course and for the presentations HuMSIRC points are given, which are counted at the application to summer exchange practice organised by HuMSIRC.

Conditions for acceptance of the semester

By the Code of the Studies and Examinations. Participation in seminars, passing a multiple choice test with at least 70%. 2 absences are permitted. Making up for missed classes according to personal discussion.

Making up for missed classes

Reading material

The material of the seminars

Lectures

Practices

Seminars

1 Introduction, course outline, aims of the course. The significance of obesity. References to Public Health (Dr. Dénes Molnár, professor)
2 Introduction, course outline, aims of the course. The significance of obesity. References to Public Health (Dr. Dénes Molnár, professor)
3 Physiological and pathophysiological background: Factors influencing the regulation of body weight. (Dr. Zoltán Szélényi, professor)
4 Physiological and pathophysiological background: Factors influencing the regulation of body weight. (Dr. Zoltán Szélényi, professor)
5 Psychological aspects of nutritional disorders. (Dr. János Kállai)
6 Psychological aspects of nutritional disorders. (Dr. János Kállai)
7 The effects of globalisation on lifestyle and health. Health promotion. (Dr. Éva Kovács)
8 The effects of globalisation on lifestyle and health. Health promotion. (Dr. Éva Kovács)
9 Types and the importance of prevention, methods of prevention.
10 Types and the importance of prevention, methods of prevention.
11 Visit of a dietitian, nutritionist. Role of physical activity, inactivity.
12 Visit of a dietitian, nutritionist. Role of physical activity, inactivity.
13 Writing the test.
14 Writing the test.

Exam topics/questions

Participants

Dr. Molnár Dénes (MODHAEE.PTE)
# Course: Medical Hungarian 1A - Communication Skills

**Course director:** Dr. Gábor Rébék-Nagy, associate professor
Department of Languages for Specific Purposes

**2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 1**

**Number of hours/semester:**
0 lectures + 28 practices + 0 seminars = total of 28 hours

**Headcount limitations (min-max.):**
min. 3 – max. 25

**Prerequisites:**
OAEH1B parallel

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**Topic**
To establish basic skills in reading, writing, listening and speaking Hungarian in preparation for effective medical communication.

**Conditions for acceptance of the semester**
Participation in class work is obligatory. In case absences exceed 30% of total class time, the course will be regarded as uncompleted. In the case of absences up to 30% of total class time, oral examination will have to be taken.

**Making up for missed classes**
To be discussed with the course tutor in each individual case.

**Reading material**
In-house course book: at the homepage of the institute:

**Lectures**

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**Exam topics/questions**
Two written test papers, and oral presentations

**Participants**
Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Horváth Lilla Anita (HOLFABP..PTE), Kurdíné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Ronczykné Berta Anikó (BEAAAL.B.JPTE), Tóth Ida (TOIHABE.PTE), Váradi Katalin (VAKHAAE.PTE)
# OAEH1B Medical Hungarian 1B - Language Points

**Course director:** Dr. Gábor Rébék-Nagy, associate professor  
Department of Languages for Specific Purposes

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<td>Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours</td>
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<tr>
<td>Headcount limitations (min-max.): min. 3 – max. 25</td>
</tr>
<tr>
<td>Prerequisites: OAEH1A parallel</td>
</tr>
</tbody>
</table>

**Topic**
Familiarizing foreign students with basic paradigms used in specific conversations.

**Conditions for acceptance of the semester**
Participation in class work is obligatory. In case absences exceed 30% of total class time, the course will be regarded as uncompleted. In the case of absences up to 25% of total class time, oral examination will have to be taken.

**Making up for missed classes**
Participation is obligatory.

**Reading material**

**Lectures**

<table>
<thead>
<tr>
<th>Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Basics of Hungarian Phonetics and Morphology</td>
</tr>
<tr>
<td>2 Basics of Hungarian Phonetics and Morphology</td>
</tr>
<tr>
<td>3 Personal Pronouns - formal and informal style</td>
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<tr>
<td>4 Personal Pronouns - formal and informal style</td>
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<tr>
<td>5 Constructing Questions - Question Words</td>
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<tr>
<td>6 Constructing Questions - Question Words</td>
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<tr>
<td>7 Numerals - Cardinal, Ordinal, Labels</td>
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<td>8 Numerals - Cardinal, Ordinal, Labels</td>
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<tr>
<td>9 Verbs - Definite and Indefinite Conjugation</td>
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<tr>
<td>10 Verbs - Definite and Indefinite Conjugation</td>
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<tr>
<td>11 Expressing Frequency</td>
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<tr>
<td>12 Expressing Frequency</td>
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<tr>
<td>13 Test 1</td>
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<tr>
<td>14 Articles</td>
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<tr>
<td>15 Modality - necessity</td>
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<tr>
<td>16 Modality - necessity</td>
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<tr>
<td>17 Objective Case</td>
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<td>18 Objective Case</td>
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<td>19 Verbal prefixes</td>
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<tr>
<td>20 Verbal prefixes</td>
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<tr>
<td>21 Expressing Time</td>
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<tr>
<td>22 Expressing Time</td>
</tr>
<tr>
<td>23 Expressing Location - Trinity of Directions</td>
</tr>
<tr>
<td>24 Expressing Location- Trinity of Directions</td>
</tr>
<tr>
<td>25 Dative Case</td>
</tr>
<tr>
<td>26 Dative Case</td>
</tr>
<tr>
<td>27 Test 2</td>
</tr>
<tr>
<td>28 Course Evaluation</td>
</tr>
</tbody>
</table>

**Seminars**

**Exam topics/questions**

**Participants**
Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Horváth Lilla Anita (HOLFABP.PTE), Kursiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szocsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Molnár Annamária (MOAFAC.B.JPTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
Topic
The main objectives of this course are to stimulate interest in students toward the experimental approach to cell biology, to develop their interpretation, problem-solving skills and their creative way of thinking. This is an advanced course tightly connected to the compulsory subject Molecular Cell Biology. The lectures cover the important discoveries of cell and molecular biology, using an experimental approach. On the small-group-discussions phenomena of molecular cell biology are described and discussed using problem-based learning techniques (e.g. figure analysis, planning of experiments, application tests) developed in the Department of Medical Biology. The compulsory subject deals with these same topics with more conventional educational methods. Although the course helps to understand principles and processes in cell biology, it is in no way required to successfully complete the compulsory subject.

Conditions for acceptance of the semester
According to the code of studies.

Making up for missed classes
None.

Reading material
Szeberényi J.: Experiments in Molecular Cell Biology.

Lectures
1 Methods to study vesicular transport
2 Methods to study gene regulation
3 Methods to study DNA synthesis
4 Methods to study protein synthesis
5 Methods to study cell defense mechanisms
6 Test
7 Methods to study RNA synthesis
8 Methods to study the cell cycle
9 Methods to study the chromatin
10 Methods to study gene function
11 Methods to study gene structure
12 Educational objectives of the course
Dr. Szeberényi József
13 Methods of morphology
14 Final test

Practices
Seminars
1. Test
2. Examples for the analysis of transcription and RNA processing
3. Examples for the analysis of the cell cycle
4. Examples for the analysis of DNA
5. Examples for the use of separation techniques
6. Examples for the use of radioactive and non-radioactive labeling labeling
7. Examples for the analysis of secretion and endocytosis
8. Examples for the analysis of chromatin
9. Examples for the analysis of cell defense
10. Examples for the analysis of gene regulation
11. Final test
12. Examples for the analysis of DNA replication and repair
13. Examples for the analysis of translation
14. Description of problem-solving exercises used in the course

Exam topics/questions
Multiple-choice test.

Participants
Dr. Pap Marianna (PAMFAO.PTE), ifj. Dr. Sétáló György (SEGMAAO.PTE), Kiss Katalin (KIKFABO.PTE)
Course director: **KÁTALIN FOGARASI**, language teacher
Department of Languages for Specific Purposes

**OAEN06 MEDICAL TERMINOLOGY**

**Course director:**

**KÁTALIN FOGARASI, language teacher**
Department of Languages for Specific Purposes

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 1</th>
</tr>
</thead>
</table>

**Number of hours/semester:** 14 lectures + 0 practices + 14 seminars = total of 28 hours

**Headcount limitations (min-max.):** min. 5 – max. 250

**Prerequisites:** -

**Topic**

Introduction into the basics of Medical Terminology pertaining to Anatomy and Clinical aspects focusing on word building and breaking down medical terms.

**Conditions for acceptance of the semester**

Making up for missed classes
To be discussed with the instructor.

**Reading material**

University Script
This resource is also available via thePoint (http://thepoint.lww.com/cohen5e)

**Lectures**

1. Introduction into Medical Terminology. The importance of Medical terminology in practice.
   Ronczykné Berta Anikó
2. The human body. Technical language use pertaining to anatomy and clinical practice.
   Ronczykné Berta Anikó
3. Terminii and clinical references pertaining to the digestive system
   Ronczykné Berta Anikó
4. Terminii pertaining to the respiratory system
   Ronczykné Berta Anikó
5. The heart. Terminology pertaining to cardiology.
   Ronczykné Berta Anikó
6. Terminology pertaining to blood and lymphatis system
   Ronczykné Berta Anikó
7. Terminology pertaining to the genito-urinary system
   Ronczykné Berta Anikó
8. Anatomical and clinical references pertaining to the genital organs
   Ronczykné Berta Anikó
9. Sensory perception and its terminology
   Ronczykné Berta Anikó
10. Characteristics of the technical language use pertaining to the brain and nervous system
    Ronczykné Berta Anikó
11. Terms pertaining to bones, muscles, joints, ligaments and the relevant traumas
    Ronczykné Berta Anikó
12. Terms pertaining to dentistry. Anatomy of the teeth and clinical aspects
    Ronczykné Berta Anikó
13. Comparison of anatomical and clinical language usages based on authentic examples
    Ronczykné Berta Anikó
14. Test paper
    Ronczykné Berta Anikó

**Practices**
Seminars

3. Introduction into the terminology pertaining to the digestive system, diagnoses.
4. Characteristics of the terminology pertaining to the respiratory system. Case studies from the field of pulmonology.
5. About the heart in nutshell. Symptoms, diagnoses, procedures in the field of cardiology.
6. Basic termini and diseases pertaining to blood and lymphatic system.
7. Test paper
8. Basic termini pertaining to the genito-urinary system. Diagnostic features of nephrology and urology.
9. Anatomical designations pertaining to the genitalia. Diagnostic methods, procedures, interventions in the fields of gynaecology and andrology.
10. Sensory perception. Diagnostic procedures, making diagnosis in the fields of dermatology, ophthalmology and otorhinolaryngology.
11. Terminii pertaining to the brain and neurology. Disorders of the brain, diagnoses in the field of neurology.
12. Bones, muscles, articulations, ligaments. Introduction into the language of traumatology
13. Terminii pertaining to dentistry. Anatomical and clinical expressions pertaining to the buccal cavity.
14. Introduction into the technical language of pharmaceutics

Exam topics/questions

Participants
Hábel Gabriella, Ronczykné Berta Anikó (BEAAAI.B.JPTE)
**Topic**

The purpose of the course is to give an opportunity for reviewing the progress in medicine historically, from the ancient times up to the present époque, on the basis of cultural background. The understanding of the fact that the contemporary medicine is the result of the efforts of several centuries will be hopefully stimulatory for the students in the professional improvement, realizing that both the theoretical basis and healing practice are due to the devoted work of previous generations. Accordingly, the progress from healing art to healing science will be illustrated in relation to the culture of previous centuries.

Since the students of our University come from countries of different cultures and traditions, the progress in medicine of Islamic traditions, in ancient Greek and Persian culture are equally reviewed, besides the European medicine where English and German relations are of outstanding importance, as reflected by the fact that in German universities, high number of weekly hours are devoted for the history of medicine. Accordingly, within the frame of the 14 weeks of the semester, at least two or three will be offered for studying German medicine and the clinical schools in England, playing a prominent role in the European progress, having for basis the volumes of "Illustrierte Geschichte der Medizin" in the library of the University.

The activity of some prominent persons of Hungarian medical history will be shortly reviewed. Hereby, our aim is to demonstrate that each culture represents a value which contributes to the common treasure of humanity, however, in different proportions.

Since the development of medicine is connected with the organisation of the universities, the history of the University of Pécs is planned to be demonstrated by visiting the Museum of University History at the end of each lecture, for small groups, in the frame of seminars.

**Conditions for acceptance of the semester**

- Written essay surveying the medical practice and theory of a selected historical period. (2-4 pages)

**Making up for missed classes**

**Reading material**

- Delano: The story of medicine, London

**Lectures**

1. Archaic medicine  
   Dr. Rúzsás Csilla
2. Healing art and healing science  
   Dr. Rúzsás Csilla
3. Medicine in ancient civilisations  
   Dr. Rúzsás Csilla
4. Egypt, Mesopotamia, India and China  
   Dr. Rúzsás Csilla
5. Medicine of Greek and Hellenic culture and in Roman times  
   Dr. Rúzsás Csilla
6. Hippocratic medicine, Roman Empire  
   Dr. Rúzsás Csilla
7. Medicine of Islamic traditions  
   Dr. Rúzsás Csilla
8. Health and disease in Islamic culture  
   Dr. Rúzsás Csilla
9. Medieval medicine in Europe  
   Dr. Rúzsás Csilla
10. Medicine in the Middle-ages  
    Dr. Rúzsás Csilla
11. Rise and the foundation of the universities  
    Dr. Rúzsás Csilla
12. Education, pharmacies and hospitals  
    Dr. Rúzsás Csilla
13. Medicine of the Renaissance  
    Dr. Rúzsás Csilla
14 Medicine and humanism  
Dr. Rúzsás Csilla

15 Medicine of the 17th: a golden age of science  
Dr. Rúzsás Csilla

16 Iatrophysics and iatrochemistry  
Dr. Rúzsás Csilla

17 The age of the 18th century  
Dr. Rúzsás Csilla

18 The age of enlightenment  
Dr. Rúzsás Csilla

19 Beginnings of modern medicine in the 19th century  
Dr. Rúzsás Csilla

20 Medical schools in Europe  
Dr. Rúzsás Csilla

21 Specialisation of medicine  
Dr. Rúzsás Csilla

22 New equipments in medicine  
Dr. Rúzsás Csilla

23 Medicine in the 20th century  
Dr. Rúzsás Csilla

24 Trends of modern medicine  
Dr. Rúzsás Csilla

25 Psychosomatic concept of diseases and medical ethics in modern medicine  
Dr. Rúzsás Csilla

26 From psychoanalysis to cognitive psychology  
Dr. Rúzsás Csilla

27 The history of the University of Pécs  
Dr. Rúzsás Csilla

28 Relations with prominent European scientists  
Dr. Rúzsás Csilla

Practices

Seminars

Exam topics/questions

Participants

Dr. Rúzsás Csilla (RUCHAAE.PTE)
OAEANA  MEDICAL ENGLISH 2/A - PRESENTATION TECHNIQUES
Course director: DR. GÁBOR RÉBÉK-NAGY, associate professor
Department of Languages for Specific Purposes

2 credit  •  midterm grade  •  Elective module  •  both semesters  •  recommended semester: 2
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 3 – max. 200
Prerequisites: -

Topic
Preparing, understanding and giving biomedical presentations in English. Preparing for presentations in Student Researchers Association in English.

Conditions for acceptance of the semester
Participation in practicals is obligatory. Absences exceeding 15% but below 30% of the total number of contact hours can be excused by the group tutor. In case absences exceed 30% of the total number of contact hours the course must be regarded as uncompleted.

Making up for missed classes
To be discussed with the course tutor in each individual case.

Reading material
Mark Powel (1996): Presenting in English (how to give successful presentations)
Joan MacLean: Presenting at Medical Meetings (in-house handout)
In-house materials

Lectures
1  Three planes of biomedical presentations
   Dr. Rébék-Nagy Gábor
2  Three planes of biomedical presentations
   Dr. Rébék-Nagy Gábor
3  Textual orientation in BMPs
   Dr. Rébék-Nagy Gábor
4  Textual orientation in BMPs
   Dr. Rébék-Nagy Gábor
5  Interpersonal communication in BMPs
   Dr. Rébék-Nagy Gábor
6  Interpersonal communication in BMPs
   Dr. Rébék-Nagy Gábor
7  Factual communication patterns in BMPs
   Dr. Rébék-Nagy Gábor
8  Factual communication patterns in BMPs
   Dr. Rébék-Nagy Gábor
9  The macrostructure of BMPs and the microstructure of individual sections
   Dr. Rébék-Nagy Gábor
10 The macrostructure of BMPs and the microstructure of individual sections
    Dr. Rébék-Nagy Gábor
11 Discourse markers in BMPs
   Dr. Rébék-Nagy Gábor
12 Discourse markers in BMPs
   Dr. Rébék-Nagy Gábor
13 Politeness strategies in BMPs
   Dr. Rébék-Nagy Gábor
14 Politeness strategies in BMPs
   Dr. Rébék-Nagy Gábor
15 Evaluation criteria of BMPs
   Dr. Rébék-Nagy Gábor
16 Evaluation criteria of BMPs
   Dr. Rébék-Nagy Gábor
17 Physical features of BMPs
   Dr. Rébék-Nagy Gábor
18 Physical features of BMPs  
Dr. Rébék-Nagy Gábor
19 Criteria of good practice of BMPs  
Dr. Rébék-Nagy Gábor
20 Criteria of good practice of BMPs  
Dr. Rébék-Nagy Gábor
21 Materials collection for BMPs  
Dr. Rébék-Nagy Gábor
22 Materials collection for BMPs  
Dr. Rébék-Nagy Gábor
23 Power point presentation tips  
Dr. Rébék-Nagy Gábor
24 Power point presentation tips  
Dr. Rébék-Nagy Gábor
25 Presentation by students  
Dr. Rébék-Nagy Gábor
26 Presentation by students  
Dr. Rébék-Nagy Gábor
27 Presentation by students  
Dr. Rébék-Nagy Gábor
28 Course evaluation  
Dr. Rébék-Nagy Gábor

Practices

Seminars

Exam topics/questions
1/ A 10-minute presentation in English on a biomedical subject
2/ An essay of 900-1000 words on the theory of giving presentations

Participants
Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE)
OAEANB  MEDICAL ENGLISH 2/b - TAKING MEDICAL CASE HISTORIES IN ENGLISH

Course director: DR. WARTA, VILMOS, Sprachlehrer
Department of Languages for Specific Purposes

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 3 – max. 100
Prerequisites: -

Topic
Communication with English-speaking patients during clinical training. Preparation for clinical training in English-speaking environment.

Conditions for acceptance of the semester
Participation in practicles is obligatory. Absences exceeding 15% but below 25% of the total number of contact hours can be excused by the group tutor. In case absences exceed 25% of the total number of contact hours the course must be regarded as uncompleted.

Making up for missed classes
To be discussed with the course tutor in each individual case.

Reading material
M. Györffy (2001) English for Doctors (Authentic Consulting Room Activities for Doctors, Dentists, Students and Nurses)
Idióma Bt., Pécs
In-house materials

Lectures
1  Introduction
   Dr. Warta Vilmos
2  Introduction
   Dr. Warta Vilmos
3  Politeness startegies
   Dr. Warta Vilmos
4  Politeness startegies
   Dr. Warta Vilmos
5  Internal medicine (1)
   Dr. Warta Vilmos
6  Internal medicine (1)
   Dr. Warta Vilmos
7  PoliInternal medicine (2)
   Dr. Warta Vilmos
8  PoliInternal medicine (2)
   Dr. Warta Vilmos
9  Obstetrics and gynaecology
   Dr. Warta Vilmos
10 Obstetrics and gynaecology
    Dr. Warta Vilmos
11 Surgery
   Dr. Warta Vilmos
12 Surgery
   Dr. Warta Vilmos
13 Urology
   Dr. Warta Vilmos
14 Urology
   Dr. Warta Vilmos
15 Paediatrics
   Dr. Warta Vilmos
16 Paediatrics
   Dr. Warta Vilmos
17 Face Threatening Activities (1)
   Dr. Warta Vilmos
18 Face Threatening Activities (1)  
   Dr. Warta Vilmos
19 Face Threatening Activities (2)  
   Dr. Warta Vilmos
20 Face Threatening Activities (2)  
   Dr. Warta Vilmos
21 General Practitioners  
   Dr. Warta Vilmos
22 General Practitioners  
   Dr. Warta Vilmos
23 Written test  
   Dr. Warta Vilmos
24 Written test  
   Dr. Warta Vilmos
25 Consolidation  
   Dr. Warta Vilmos
26 Consolidation  
   Dr. Warta Vilmos
27 Course evaluation  
   Dr. Warta Vilmos
28 Course evaluation  
   Dr. Warta Vilmos

Practices

Seminars

Exam topics/questions  
1) four history takings  
2) one written test

Participants
OAEBSK  BIOINORGANIC CHEMISTRY

Course director: DR. ATTILA AGÓCS, assistant professor
Department of Biochemistry and Medical Chemistry

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 2

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 60
Prerequisites: OAAOM1 completed

Topic
The course deals with biological importance of elements (metals and nonmetals) in the living organisms discussing the effects of common toxic elements. Basic respect of studying the interaction of ions, molecules and biopolymers. It gives a basic knowledge and facilitates to understand certain chapters of medical biochemistry.

Conditions for acceptance of the semester
Successful written examination.

Making up for missed classes

Reading material
P. Gergely (Ed.): Introduction to Bioinorganic chemistry for medical students (Univ. Med. School of Debrecen, latest edition)

Lectures
1. Introduction to bioinorganic chemistry I.
   Dr. Tóth Gyula
2. Introduction to bioinorganic chemistry II.
   Dr. Tóth Gyula
3. Structure of biocomplex compounds
   Dr. Tóth Gyula
4. Chelates
   Dr. Tóth Gyula
5. Life essential elements
   Dr. Tóth Gyula
6. Evolution of inorganic chemicals
   Dr. Tóth Gyula
7. Evolution of organic chemicals
   Dr. Tóth Gyula
8. Uptake of metallic elements
   Dr. Tóth Gyula
9. Uptake of anions, molecules
   Dr. Tóth Gyula
10. Biological importance of alkali metals
    Dr. Berente Zoltán
11. Biological importance of alkaline earth metals
    Dr. Berente Zoltán
12. Bioinorganic chemistry of Fe-ions
    Dr. Berente Zoltán
13. Bioinorganic chemistry of Cu-ions
    Dr. Berente Zoltán
14. Bioinorganic chemistry of Zn-ion
    Dr. Berente Zoltán
15. Bioinorganic chemistry of transition metals I.
    Dr. Berente Zoltán
16. Bioinorganic chemistry of transition metals II.
    Dr. Berente Zoltán
17. Bioinorganic chemistry of transition metals III.
    Dr. Berente Zoltán
18. Test Paper I.
    Dr. Tóth Gyula
19 Biological role of aluminium  
Dr. Tóth Gyula
20 Biological role of silicon  
Dr. Tóth Gyula
21 Function of nitrogen in biological systems  
Dr. Agócs Attila
22 Function of phosphorus in biological systems  
Dr. Agócs Attila
23 Dioxygen, oxygen free radicals I.  
Dr. Agócs Attila
24 Dioxygen, oxygen free radicals II.  
Dr. Agócs Attila
25 Boron, Selenium  
Dr. Agócs Attila
26 Arsenic and other non-metallic elements  
Dr. Agócs Attila
27 Biological functions of halogenes  
Dr. Agócs Attila
28 Test Paper II.  
Dr. Tóth Gyula

Practices

Seminars

Exam topics/questions  

Participants
OAEBVK CHEMISTRY OF BIOACTIVE ORGANIC COMPOUNDS

Course director: DR. TAMÁS LÓRÁND, associate professor
Department of Biochemistry and Medical Chemistry

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 2

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 50

Prerequisites: OAAOM1 completed

Topic
The course discusses the chemical and biological properties of the vitamins, some alkaloids and the more important antibiotics. In the case of antibiotics as a major goal, the program affords a short overview of the structure of these compounds, biological effect, relationships and the biochemical mechanism of action.

It gives a basic knowledge and helps in the understanding of the later subjects such as biochemistry, microbiology, as well as pharmacology.

Conditions for acceptance of the semester
Successful written examination.

Making up for missed classes

Reading material
P. Gergely (Ed.): Organic and bioorganic chemistry for medical students (Univ. Med. School of Debrecen, latest edition)

Lectures
1. General overview of nutrients I.
   Dr. Tóth Gyula
2. General overview of nutrients II.
   Dr. Tóth Gyula
3. General overview of the vitamins
   Dr. Tóth Gyula
4. General overview of the provitamins
   Dr. Tóth Gyula
5. The history of vitamin research I.
   Dr. Tóth Gyula
6. The history of vitamin research II.
   Dr. Tóth Gyula
7. Fat soluble vitamins I: A- and D-vitamins
   Dr. Tóth Gyula
8. Fat soluble vitamins II: E- and K-vitamins
   Dr. Tóth Gyula
9. Water soluble vitamins
   Dr. Tóth Gyula
10. Vitamin C
    Dr. Tóth Gyula
11. B-group vitamins
    Dr. Tóth Gyula
12. Test Paper I.
    Dr. Tóth Gyula
13. Introduction to the antibiotics
    Dr. Lóránd Tamás
14. Beta-lactame antibiotics I
    Dr. Lóránd Tamás
15. B- lactame antibiotics II. (cephalosporins, carbapenems, etc.)
    Dr. Lóránd Tamás
16. Aminoglycosides I.
    Dr. Lóránd Tamás
17. Aminoglycosides II.
    Dr. Lóránd Tamás
18. Macrolides
    Dr. Lóránd Tamás
19 Ansamycines  
   Dr. Lóránd Tamás  
20 Tetracyclins I.  
   Dr. Lóránd Tamás  
21 Tetracyclins II.  
   Dr. Lóránd Tamás  
22 Glycopeptides  
   Dr. Lóránd Tamás  
23 Other antibiotics I.  
   Dr. Lóránd Tamás  
24 Other antibiotics II.  
   Dr. Lóránd Tamás  
25 The short overview of the alkaloids  
   Dr. Tóth Gyula  
26 Classification of alkaloids  
   Dr. Tóth Gyula  
27 Most common alkaloids  
   Dr. Tóth Gyula  
28 Test Paper II.  
   Dr. Tóth Gyula  

Practices  

Seminars  

Exam topics/questions  

Participants
OAEEMA Basic Principles of Electron Microscopy in Clinical Practice and Biological Research

Course director: Dr. Hajnalka Ábrahám, associate professor
Central Electron Microscope Laboratory

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 2

Number of hours/semester: 24 lectures + 4 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 20
Prerequisites: OAAMB1 completed

Topic
Methods of electron microscopic fixation, embedding and sectioning and the use of the electron microscope. Demonstration of the subcellular elements in details and of a few tissues and organs. Demonstration of the electron microscopic methods used in the biological research. The use of electron microscopic methods in the clinical practice.

The basic principles of electron microscopy will be discussed and we provide information about the mode and the use of electron microscopy in the basic research and in the clinical practice.

Conditions for acceptance of the semester
Participation on 80% of the seminars. Oral examination with analysis of electron microscopic photographs

Making up for missed classes

Reading material
Suggested only:
Dr. Szabolcs Virágh: Ultrastructural pathology and diagnostic electron microscopy
Leon Weiss: Histology. Cell and Tissue Biology

Lectures
1. Purpose and indication of the electron microscopic examination. The role of fixation in tissue preservation, the recognition of cells, cellular organelles etc.
   Dr. Seress László
2. Most frequent failures in the electron microscopic practice
   Dr. Seress László
   Dr. Seress László
4. Samples taken by autopsy or biopsy. Perfusion of experimental animals for electron microscopy.
   Dr. Seress László
5. The ultrastructure of the cell I.
   Dr. Seress László
6. The ultrastructure of the cell II.
   Dr. Seress László
7. The ultrastructure of the cell III.
   Dr. Seress László
8. The ultrastructure of the cell IV.
   Dr. Seress László
9. The ultrastructure of the cell V
   Dr. Ábrahám Hajnalka
10. The ultrastructure of the cells VI
    Dr. Ábrahám Hajnalka
11. Ultrastructures of neurons (axon, dendrite, synapses)
    Dr. Seress László
12. Ultrastructure of glial cells
    Dr. Seress László
13. The ultrastructure of kidney
    Dr. Ábrahám Hajnalka
14. The ultrastructure of the liver
    Dr. Ábrahám Hajnalka
15. Ultrastructure of the muscle
    Dr. Ábrahám Hajnalka
    Dr. Ábrahám Hajnalka
17 Combined light and electron microscopic methods, such as Golgi/EM, Timm/EM, immunocytochemistry/EM.
   Dr. Seress László
18 Combination of degeneration and axon transport methods with electron microscopy.
   Dr. Seress László
19 Ultrastructure of bacteria and viruses.
   Dr. Ábrahám Hajnalka
20 Cytoskeleton
   Dr. Seress László
21 Intercellular connections
   Dr. Seress László
22 The use of EM in the biological research I
   Dr. Seress László
23 The use of EM in biological research II.
   Dr. Seress László
24 Examination
   Dr. Seress László

Practices
1 Electron microscopic grids and coating membranes. The use of transmission electron microscope (light, focus, contrast, photo).
2 Analysis of tissue in the electron microscope, virus, bacteria
3 Analysis of tissue in the electron microscope, liver, muscle.
4 Analysis of tissue in the electron microscope, neurons, glial cells.

Seminars
Exam topics/questions
None
Participants
Dr. Ábrahám Hajnalka (ABHMAAO.PTE), Dr. Seress László (SELMAAO.PTE)
OAEH2A  MEDICAL HUNGARIAN 2A - COMMUNICATION SKILLS

Course director: DR. GÁBOR RÉBÉK-NAGY, associate professor
Department of Languages for Specific Purposes

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 2 – max. 25
Prerequisites: OAEH2B parallel + OAEH1A completed

Topic
This course is meant to serve as a transition between general and specific (doctor-patient) communication skills development.

Conditions for acceptance of the semester
Participation in class work is obligatory. In case absences 30 % of total class time the course will be regarded as uncompleted. In the case of absences up to 30% of total class time, oral examination will have to be taken.

Making up for missed classes
In the case of absences up to 30% of total class time, oral examination will have to be taken.

Reading material
http://aok.pte.hu/index.php?page=egyseg&egy_id=60&nyelv=eng&menu=okt_anyag

Lectures

Practices
1 Logical relations, comparison
2 Logical relations, comparison
3 Giving orientation, informing people
4 Giving orientation, informing people
5 Giving descriptions, requesting and providing information
6 Giving descriptions, requesting and providing information
7 Cause and consequence
8 Cause and consequence
9 Narratives
10 Narratives
11 Giving advice
12 Giving advice
13 Expressing uncertainty
14 Expressing uncertainty
15 Test 1
16 Test 1
17 Descriptions, warning
18 Descriptions, warning
19 Polite request, command and warning
20 Polite request, command and warning
21 Parts of the human body, pain, basic symptoms
22 Parts of the human body, pain, basic symptoms
23 History taking: presenting complaints, location, direction and character of pain
24 History taking: presenting complaints, location, direction and character of pain
25 Simple examinations, diagnostic procedures
26 Simple examinations, diagnostic procedures
27 Test 2
28 Course evaluation

Seminars

Exam topics/questions

Participants
Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Horváth Lilla Anita (HOLFABP..PTE), Kurdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAB.PTE), MészégetőnÉ Halmos Éva (MEHHABE.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAL.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
**OAEH2B**  MEDICAL HUNGARIAN 2B - LANGUAGE POINTS

**Course director:**

**Course director:**

**DR. GÁBOR RÉBÉK-NAGY**, associate professor
Department of Languages for Specific Purposes

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**2 credit • midsession grade • Elective module • spring semester • recommended semester: 2**

**Number of hours/semester:**

0 lectures + 28 practices + 0 seminars = total of 28 hours

**Headcount limitations (min-max.):**

min. 3 – max. 25

**Prerequisites:**

OAEH2A parallel + OAEHB completed

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**Topic**

This course is meant to provide the language basis for advanced communication between doctors and patients.

**Conditions for acceptance of the semester**

Participation in class work is obligatory. In case absences exceed 30% of total class time, the course will be regarded as uncompleted. In the case of absences up to 30% of total class time, oral examination will have to be taken.

**Making up for missed classes**

Participation is obligatory.

**Reading material**

http://aok.pte.hu/index.php?page=egyseg&egy_id=60&nyelv=eng&menu=okt_ANYAG

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**Lectures**

**Practices**

1. Expressing possessing, genitive case
2. Expressing possessing, genitive case
3. Adjectives and nouns: eg. nátha-náthás, nominalization: eg köhög-köhögés
4. Adjectives and nouns: eg. nátha-náthás, nominalization: eg köhög-köhögés
5. Question words, concerning time and location and adverbs of time
6. Question words, concerning time and location and adverbs of time
7. Expressing cause, giving explanation
8. Expressing cause, giving explanation
9. Functions of past tense in medical Hungarian
10. Functions of past tense in medical Hungarian
11. Future tense, modality expressing ability and volition
12. Future tense, modality expressing ability and volition
13. Impersonalization
14. Impersonalization
15. Consolidation test 1
16. Test 1
17. Modality expressing necessity, possibility and prohibition
18. Modality expressing necessity, possibility and prohibition
19. Definite and indefinite conjugation, prefixed verbs
20. Definite and indefinite conjugation, prefixed verbs
21. Imperative forms
22. Imperative forms
23. Giving instructions to patients
24. Giving instructions to patients
25. Giving instructions to patients
26. Consolidation
27. Test1
28. Course evaluation

**Seminars**

**Exam topics/questions**

**Participants**

Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Horváth Lilla Anita (HOLFABP.PTE), Kurdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAL.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
OAEMOM MOLECULAR MEDICINE

Course director: DR. JÓZSEF SZEBERÉNYI, professor
Department of Medical Biology

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 2
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 –
Prerequisites: -

Topic
Short description of the course: The course covers overlapping fields of molecular cell biology and clinical genetics, discusses the significance of molecular genetics in clinical medicine. Main topics: the relationship between genotype and phenotype; human genome and phenome program; mosaicism; microsatellite instability; genomic imprinting; embryo cloning; gene therapy; ethical aspects of molecular medicine.
The main educational task of the subject: The aim of the course is to develop connections between basic science and clinical medicine; to convince students that knowledge of molecular biology is essential to understand the pathomechanism of diseases; to give students the chance to face clinical problems even at the beginning of their medical studies.

Conditions for acceptance of the semester
According to the Code of Studies and Examinations

Making up for missed classes

Reading material
Gelehrter-Collins: Principles of Medical Genetics
Szeberényi József: Molekuláris sejtbiológia (tankönyv)

Lectures
1 DNA fingerprinting
   Dr. Szeberényi József
2 DNA fingerprinting
   Dr. Szeberényi József
3 Genotype-phenotype; phenotype-genotype
   Dr. Kosztolányi György
4 Genotype-phenotype; phenotype-genotype
   Dr. Kosztolányi György
5 Mosaicism
   Dr. Kosztolányi György
6 Mosaicism
   Dr. Kosztolányi György
7 Human genome project
   Dr. Szeberényi József
8 Human genome project
   Dr. Szeberényi József
9 The RNA world
   Dr. Szeberényi József
10 The RNA world
   Dr. Szeberényi József
11 Non-Mendelian monogenic inheritance
   Dr. Kosztolányi György
12 Non-Mendelian monogenic inheritance
   Dr. Kosztolányi György
13 National holiday
   Dr. Szeberényi József
14 National holiday
   Dr. Szeberényi József
15 Diseases of protein folding
   Dr. Szeberényi József
16 Diseases of protein folding
   Dr. Szeberényi József
17 Genetics and environment: epigenetics
   Dr. Kosztolányi György
18 Genetics and environment: epigenetics
   Dr. Kosztolányi György
19 Intracellular antibodies
   Dr. Szeberényi József
20 Intracellular antibodies
   Dr. Szeberényi József
21 Molecular cytogenetics
   Dr. Szeberényi József
22 Molecular cytogenetics
   Dr. Szeberényi József
23 Cloning of mammals
   Dr. Szeberényi József
24 Cloning of mammals
   Dr. Szeberényi József
25 Ethical aspects of molecular genetics
   Dr. Kosztolányi György
26 Ethical aspects of molecular genetics
   Dr. Kosztolányi György
27 Closing test
   Dr. Szeberényi József
28 Closing test
   Dr. Szeberényi József

Practices
Seminars
Exam topics/questions
Participants
OAEMS2 EXPERIMENTS IN MOLECULAR CELL BIOLOGY 2

Course director: DR. JÓZSEF SZEBERÉNYI, professor
Department of Medical Biology

2 credit • midschool grade • Elective module • spring semester • recommended semester: 2

Number of hours/semester: 14 lectures + 0 practices + 14 seminars = total of 28 hours
Headcount limitations (min-max.): min. 1 –
Prerequisites: OAEMS1 completed

Topic
The main objectives of this course are to stimulate interest in students toward the experimental approach to cell biology, to develop their interpretation, problem-solving skills and their creative way of thinking. This course is an advanced course tightly connected to the compulsory subject Molecular Cell Biology. The lectures cover the important discoveries of cell and molecular biology, using an experimental approach. On the small-group-discussions phenomena of molecular cell biology are described and discussed using problem-based learning techniques (e.g. figure analysis, planning of experiments, application tests) developed in the Department of Medical Biology. The compulsory subject deals with these same topics with more conventional educational methods. Although the course helps to understand principles and processes in cell biology, it is in no way required to successfully complete the compulsory subject.

Conditions for acceptance of the semester
According to the code of studies.

Making up for missed classes

Reading material
Szeberényi J.: Experiments in Molecular Cell Biology.

Lectures
1. Test
   Dr. Szeberényi József
2. Methods to study oncogenic viruses
   Dr. Szeberényi József
3. Methods to study tumor suppressor genes
   Dr. Szeberényi József
4. Methods to study abnormalities in the cell cycle
   Dr. Szeberényi József
5. Methods of human genetics
   Dr. Szeberényi József
6. Methods of molecular medicine
   Dr. Szeberényi József
7. Final test
   Dr. Szeberényi József
8. Methods to study cellular oncogenes
   Dr. Szeberényi József
9. Methods to study the cytoskeleton
   Dr. Szeberényi József
10. Methods to study apoptosis
    Dr. Szeberényi József
11. Methods to study growth factor and cytokine signaling
    Dr. Szeberényi József
12. Methods to study G protein-mediated signaling processes
    Dr. Szeberényi József
13. Methods to study the cell membrane and the extracellular matrix
    Dr. Szeberényi József
14. Methods to study receptor proteins
    Dr. Szeberényi József

Practices
Seminars
1  Examples for the analysis of oncogenic viruses
2  Examples for the analysis of receptors
3  Examples for the analysis of the role of tyrosine kinases
4  Examples for the analysis of abnormal cell cycle
5  Test
6  Examples for the analysis of tumor suppressor genes
7  Examples for the analysis of apoptosis
8  Examples for the analysis of the cell membrane
9  Examples for the analysis of the cytoskeleton
10 Examples for the analysis of the role of cAMP and lipid-derived second messengers
11 Examples for the analysis of cellular oncogenes
12 Examples for the methods of molecular diagnostics
13 Final test
14 Examples for the methods of cytogenetics

Exam topics/questions
Multiple-choice test.

Participants
Dr. Pap Marianna (PAMFAO.PTE), iť. Dr. Sétáló György (SEGMAAO.PTE), Kiss Katalin (KIKFABO.PTE)
Course director: DR. ANDREA LUBICS, assistant professor
Department of Anatomy

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 160

Prerequisites: OAAAA1 parallel

Topic
The course offers extra dissecting room practices in regional anatomy with the assistance of experienced teachers. To achieve advanced skill in sectioning human body, and to get a deeper understanding of it.

Conditions for acceptance of the semester
Two regions should be dissected by each student under supervision of teachers. The semester score (1 to 5) will be based on the quality of the dissection. To receive the credit, at least score 2 (satisfactory) should be received and the student must participate in more than 70% of the practices (ten).

Making up for missed classes
Individual study on the consecutive practices of the group.

Reading material
R.S. Snell: Clinical Anatomy for Medical Students
Sobotta or Netter Atlas of Anatomy
K.L. Moore: Clinically oriented Anatomy

Lectures
Practices
1 General practical Instructions.
2 Dissection of the ventral regions of extremities.
3 Dissection of the ventral regions of extremities.
4 Dissection of the ventral regions of extremities.
5 Dissection of the ventral regions of extremities.
6 Dissection of the ventral regions of extremities.
7 Dissection of the ventral regions of extremities.
8 Dissection of the ventral regions of extremities.
9 Dissection of the ventral regions of extremities.
10 Dissection of the ventral regions of extremities.
11 Dissection of the ventral regions of extremities.
12 Dissection of the ventral regions of extremities.
13 Dissection of the ventral regions of extremities.
14 Dissection of the ventral regions of extremities.
15 Dissection of the ventral regions of extremities.
16 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
17 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
18 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
19 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
20 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
21 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
22 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
23 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
24 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
25 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
26 Dissection of the dorsal regions of extremities, nuchal region and muscles of the back.
27 Evaluation of the prepared regions.
28 Evaluation of the prepared regions.

Seminars

Exam topics/questions
http://an-server.pote.hu
Participants
Dr. Czeiter Endre (CZEFAO.PTE), Dr. Farkas Boglárka (FABFADO.PTE), Dr. Hollósy Tibor (HOTFAAO.PTE), Dr. Horváth Gabriella (HOGFAFO.PTE), Dr. Lubics Andrea (PELMAAO.PTE), Fábián Eszter (FAEGAAT.PTE), Opper Balázs (OPBFAB.TJ.PTE)
OAEAPK  PREPARATION OF ANATOMICAL DEMONSTRATION MATERIAL

Course director:  DR. PéTER KISS, assistant professor
Department of Anatomy

1 credit • midsemester grade • Elective module • both semesters semester • recommended semester: 3

Number of hours/semester:  0 lectures + 14 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 1 – max. 12

Prerequisites:  OAAAA1 completed + OAASF1 completed

Topic
In the course will be made anatomical preparations, for example preparations of head, joints, limbs, pharynx, larynx, lesser pelvic. Students with manual skills are preferred. Each student has to dissect 1 preparation during 12 course hours (4x3 hours), and to present it at the end of the course.

Conditions for acceptance of the semester
Making up for missed classes
Absences are individually made up.

Reading material
http://an-server.pote.hu

Lectures

Practices
1  Introduction
2  Preparation
3  Preparation
4  Preparation
5  Preparation
6  Preparation
7  Preparation
8  Preparation
9  Preparation
10 Preparation
11 Preparation
12 Preparation
13 Preparation
14 Evaluation of the preparation

Seminars
Exam topics/questions
http://an-server.pote.hu

Participants
Dr. Gaszner Balázs (GABFADO.PTE), Dr. Kiss Péter (KIPFABO.PTE)
Topic
The interpretation of the electrical signals from patients is not merely a matter of memorizing a few characteristic pictures; there are many unusual variations and combinations of these phenomena which must be studied, analyzed, and correlated one with another and with other available data before any definite conclusion is possible. These situations demand some acquaintance with the electrical and physiologic principles by which they are determined.

The purpose of the course is to understand the origin of the electrical signals that can be recorded from excitable living tissues, the basic properties of their behavior, the main physical and physiological processes by which these signals (action potential, ECG, EEG, event related potentials, R triggered potentials, field potentials, intracellular and extracellular single unit recording) are determined. The course includes the discussion of the physical basis of electricity, resting potential, passive and active properties of the excitable membrane, voltage and ligand gated ion channels, realistic and abstract neuronal network models, the nature of the intra and extracellular signals. The origin and the physiological significance of the diagnostically important electrical signals (ECG, EEG, EMG, VEP) will also be discussed, some clinically relevant topic will also be touched.

Conditions for acceptance of the semester
Acceptance: 3 absences out of 8 classes is allowed. Exam: oral exam

Making up for missed classes
Not possible

Reading material
The course material will be available on a CD. Students are freely allowed to copy the course CD.

Lectures

1  Electrophysics 1.
   Dr. Jandó Gábor
2  Electrophysics 2.
   Dr. Jandó Gábor
3  Excitable membrane 1.
   Dr. Jandó Gábor
4  Excitable membrane 2.
   Dr. Jandó Gábor
5  Membrane potential 1.
   Dr. Jandó Gábor
6  Membrane potential 2.
   Dr. Jandó Gábor
7  Action potential, field potential 1.
   Dr. Jandó Gábor
8  Action potential, field potential 2.
   Dr. Jandó Gábor
9  ECG basics 1.
   Dr. Jandó Gábor
10 ECG basics 2.
    Dr. Jandó Gábor
11 ECG interpretation 1.
    Dr. Jandó Gábor
12 ECG interpretation 2.
    Dr. Jandó Gábor
13 EEG - VEP 1.
    Dr. Jandó Gábor
14 EEG - VEP 2.
    Dr. Jandó Gábor
Practices

Seminars

Exam topics/questions

Students are allowed to select the most preferred topic of the course and must be prepared for the exam from that topic only. Five-ten shortly answerable questions will be asked from that topic, the mark will be established on the basis of correct answers.

Topic list:

1. Physical basis of electrophysiology, amplifiers, leads
2. Passive physiological properties of the neuron
3. Resting potential, action potential, HH model and patch-clamp technique
4. Modeling brain functions: realistic, abstract models, artificial intelligence
5. ECG basics
6. Interpretation of ECG
7. Electroencephalography and Event Related Potentials
8. Visual Evoked Potentials

Participants
UP MS General Medicine major – Elective and Optional subjects – academic year of 2011/2012

OAEEHS HUNGER, SATIETY AND DISTURBANCES OF BODY WEIGHT REGULATION

Course director: Dr. László Lénárd, professor
Department of Physiology

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 3

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 30
Prerequisites: OAABI2 completed + OAAMB2 completed

Topic

Based on recent results, feeding related physiological and pathophysiological mechanisms will be discussed. Students will be trained to understand these mechanisms. The knowledge based on this course will highly contribute to better understanding further clinical studies on human diseases.

Peripheral and central mechanisms of hunger, satiety, salt appetite and body weight regulation will be discussed. Lectures will include the following topics: Neural and humoral processes. Peripheral and central glucose-monitoring system. The role of neuropeptides in the control of feeding and hydromineral balance. Pathological processes: obesity, bulimia, anorexia.

Conditions for acceptance of the semester

Written exams.
Absence from no more than 30% of the lectures.

Making up for missed classes

Reading material

Lectures

1 Basic parameters: caloric intake, energy expenditure, measurement of food and water intake, body weight and body mass index. Body weight curves during development, adulthood and senescence.
   Dr. Lénárd László
2 Peripheral and central mechanisms of body weight regulation.
   Dr. Lénárd László
3 Endocrine mechanisms: the role of different hormones.
   Dr. Lénárd László
4 Body weight loss, obesity. Long run pathological consequences of obesity.
   Dr. Lénárd László
5 Hunger and satiety. Motivational mechanisms. Overeating, rejection.
   Dr. Lénárd László
6 Hypothalamic dual centers. The role of the limbic system in hunger and satiety.
   Dr. Lénárd László
7 Peripheral glucose related signals. The central glucose monitoring system.
   Dr. Lénárd László
8 Food rewarded learning, the role of reinforcement. Aversive learning, the role of conditioned taste aversion in feeding habits.
   Dr. Lénárd László
9 The sight, odor, taste and texture of foods and their detection in the limbic system. Ingestive and rejective mimetic responses and their genetic determination.
   Dr. Lénárd László
10 The role of monoamines in the regulation of feeding. Similarities of food rewarded learning and addictive behavior. The role of dopamine and neuropeptides.
   Dr. Lénárd László
11 Orexigenic and anorexigenic neuropeptides.
   Dr. Lénárd László
12 The role of the central angiotensinergic system in drinking and hydromineral balance.
   Dr. Lénárd László
13 Childhood obesity and cognitive processes.
   Dr. Lénárd László
14 Anorexia nervosa, bulimia and binge eating. Clinical relevance of animal experiments
   Dr. Lénárd László
Practices
Seminars
Exam topics/questions
Participants
Health psychology is concerned with the study of psychological processes related to health, illness and health care. It provides a theoretical and practical health-focused approach to people’s well-being. Health psychology studies behavioral factors that influence the health conditions and maintenance of health. Addresses the issues of health promotion, prevention, life events, coping and social support. Deals with the adjustment processes and quality of life in chronic illness, hospitalization and medical care. Furthermore, health psychology emphasizes the importance of the health of health care providers, the prevention of burn out and other professional-related risks.

Conditions for acceptance of the semester
Code of Studies and Examinations. Closing test exam.

Making up for missed classes
Code of Studies and Examinations.

Reading material
Csabai-Molnár: Health, Illness and Care

Lectures
Practices
Seminars
Exam topics/questions
www.aok.pte.hu/magtud

Participants
Dr. Kállai János (KAJFAE.PTE), Dr. Tiringer István (TIIHAAE.PTE), Dr. Varga József (VAJGABO.PTE), Kerekes Zsuzsanna (KEZDAA.T.JPTE)
OAEH3A  MEDICAL HUNGARIAN 3A - BASICS OF MEDICAL COMMUNICATION

Course director: DR. GÁBOR RÉBÉK-NAGY, associate professor
Department of Languages for Specific Purposes

2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 3

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 3 – max. 25

Prerequisites: OAEH3B parallel + OAEH2A completed

Topic
This course is devoted to the acquisition of language and communicative functions of the basic history taking process.

Conditions for acceptance of the semester
Participation in class work is obligatory. In case absences exceed 30% of total class time, the course will be regarded as uncompleted. In the case of absences up to 30% of total class time, oral examination will have to be taken.

Making up for missed classes
Participation in class work is obligatory. In case absences exceed 30% of total class time, the course will be regarded as uncompleted. In the case of absences up to 30% of total class time, oral examination will have to be taken.

Reading material
It can be bought at the Department.

Lectures
Practices
1. Family History, social history and previous diseases
2. Complaint and Pain
3. Headache, dizziness, perspiration, nausea, vomiting
4. Vision, shortness of breath, cough
5. Heart complaints, appetite
6. Stool, urine
7. Stool, urine
8. Shivering, fever, oedema
9. Blood
10. Frequent diseases
11. Neck and thyroid blend
12. Oesophagus, stomach, gall bladder
13. Bowel diseases, cardiovascular diseases
14. Medications
15. Medications
16. Test 1
17. Gynecology
18. Gynecology
19. Urology
20. Urology
21. Surgery and traumatology, Orthopaedic surgery
22. Surgery and traumatology, Orthopaedic surgery
23. Neurology
24. Neurology
25. Consolidation
26. Consolidation
27. Test 2
28. Consolidation

Seminars
Exam topics/questions
Participants
Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vílmos (WAVEAB.B.JPTE), Horváth Lilla Anita (HOLFABP..PTE), Kardiné Molnár Észter (KUMPAAK.PTE), Lokodiné Szoecsányi Judit (LOSIAAB.PTE), Mészégeétő Halmos Éva (MEHHABE.PTE), Móriczné Győrfy Mária (MOGPAAP.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
OAEH3B  MEDICAL HUNGARIAN 3B - MEDICAL COMMUNICATION IN PRACTICE

Course director: DR. GÁBOR RÉBÉK-NAGY, associate professor
Department of Languages for Specific Purposes

2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 3
Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 3 – max. 25
Prerequisites: OAEH3A parallel + OAEH2B completed

Topic
This course serves the skills development based on language and communicative functions acquired in course 3A.

Conditions for acceptance of the semester
Participation in class work is obligatory. In case absences exceed 30% of total class time, the course will be regarded as uncompleted. In the case of absences up to 30% of total class time, oral examination will have to be taken.

Making up for missed classes
Participation is obligatory.

Reading material
It can be bought at the Department.

Lectures

Practices
1. Family History, social history and previous diseases - Listening comprehension and speaking skills
2. Complaint and Pain - Listening comprehension and speaking skills
3. Headache, dizziness, perspiration, nausea, vomiting - Listening comprehension and speaking skills
4. Vision, shortness of breath, cough - Listening comprehension and speaking skills
5. Heart complaints, appetite - Listening comprehension and speaking skills
6. Stool, urine - Listening comprehension and speaking skills
7. Stool, urine - Listening comprehension and speaking skills
8. Shivering, fever, oedema - Listening comprehension and speaking skills
9. Blood - Listening comprehension and speaking skills
10. Frequent diseases - Listening comprehension and speaking skills
11. Neck and thyroid blend - Listening comprehension and speaking skills
12. Oesophagus, stomach, gall bladder - Listening comprehension and speaking skills
13. Bowel diseases, cardiovascular diseases - Listening comprehension and speaking skills
14. Medications - Listening comprehension and speaking skills
15. Medications - Listening comprehension and speaking skills
16. Test 1
17. Gynecology - Listening comprehension and speaking skills
18. Gynecology - Listening comprehension and speaking skills
19. Urology - Listening comprehension and speaking skills
20. Urology - Listening comprehension and speaking skills
21. Surgery and traumatology, Orthopaedic surgery - Listening comprehension and speaking skills
22. Surgery and traumatology, Orthopaedic surgery - Listening comprehension and speaking skills
23. Neurology - Listening comprehension and speaking skills
24. Neurology - Listening comprehension and speaking skills
25. Consolidation
26. Consolidation
27. Test 2
28. Course evaluation

Seminars

Exam topics/questions

Participants
Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vílmos (WAVEAB.B.JPTE), Hamanné Sávay Judit (HASMAAO.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Móriczné Győrffy Mária (MOGPAAP.PTE), Ronczykné Berta Anikó (BEAAAA.B.JPTE), Váradi Katalin (VAKHAABE.PTE)
**OAEHOS HORMONAL REGULATORY MECHANISMS IN HEALTH AND DISEASE**

Course director: **DR. MARIETTA VÉRTES**, professor emeritus

Department of Physiology

2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 3

**Number of hours/semester:** 28 lectures + 0 practices + 0 seminars = total of 28 hours

**Headcount limitations (min-max.):** min. 5 – max. 50

**Prerequisites:** OAAMB2 completed

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**Topic**

The aim of the program is to clarify the role of hormones and hormonal networks in the maintenance of homeostasis and regulation of body processes including reproduction. The lectures attempt to provide an overview of function of hormonal networks and the integrity of nervous and endocrine regulation in human body.

**Conditions for acceptance of the semester**

Participation at the lectures, exam

**Making up for missed classes**

Oral discussion of given chapter

**Reading material**


**Lectures**

1. Types of hormones. Hormone synthesis, transport
   Dr. Vértes Marietta
2. Mechanism of hormone action, hormone receptors
   Dr. Vértes Marietta
3. Signal transduction. Regulation of tissue responsiveness to hormones
   Dr. Vértes Marietta
4. Endocrine and nervous system relationships
   Dr. Vértes Marietta
5. Hypothalamo-hypophyseal tract
   Dr. Vértes Marietta
6. Anterior pituitary. Feedback regulation
   Dr. Vértes Marietta
   Dr. Vértes Marietta
8. Hormonal regulation of fuel metabolism. General concepts
   Dr. Vértes Marietta
9. Growth hormone and IGF
   Dr. Vértes Marietta
10. Hormones of pancreas
    Dr. Vértes Marietta
11. Metabolism in diabetes mellitus
    Dr. Vértes Marietta
12. Regulatory peptides in the gut
    Dr. Vértes Marietta
13. Cortisol
    Dr. Vértes Marietta
14. Stress and thyroid hormones
    Dr. Vértes Marietta
15. Regulation of salt and water balance. General concepts
    Dr. Vértes Marietta
16. Hypothalamo-neurosecretory system
    Dr. Vértes Marietta
17. Renin-angiotensin-aldosterone system
    Dr. Vértes Marietta
18. Natriuretic hormones
    Dr. Vértes Marietta
19. Hormones in pregnancy and during fetal development  
   Dr. Vértes Marietta
21. Menstrual cycle. Contraception  
   Dr. Vértes Marietta
21. Menstrual cycle. Contraception  
   Dr. Vértes Marietta
23. Breast development. Hormones during lactation  
   Dr. Vértes Marietta
24. Ontogeny of endocrine system  
   Dr. Vértes Marietta
25. Hormones and bones  
   Dr. Vértes Marietta
26. Endocrine system and aging  
   Dr. Vértes Marietta
27. Discussion  
   Dr. Vértes Marietta
28. Exams  
   Dr. Vértes Marietta

Practices
Seminars

Exam topics/questions
Written exam, multiple choice questions from lectures

Participants
Course director: DR. BÉLA MELEGH, professor
Medical Genetics and Child Development

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 3

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 –
Prerequisites: OAAMB2 completed

Topic
The goal of this course is to delineate the structure and variations of the human genome, to foster the formation of an approach that will aid the acquisition of preclinical and later clinical subjects with the possession of a molecular knowledge. The further goal is to discuss the molecular basics associated with human heredity and to introduce diagnostic methods relevant to the understanding of heritable disorders.

Conditions for acceptance of the semester
The grades will be established either on the basis of points achievable in voluntary mid-term assessments or by a written test at the end of the semester for those who cannot collect the number of points necessary for the desired grade.

Making up for missed classes

Reading material
The basis is the topics of the lectures.
Further readings:
Tom Strachan and Andrew P. Read: Human Molecular Genetics

Lectures
   Dr. Melegh Béla
   Dr. Melegh Béla
   Dr. Melegh Béla
4. Online genetic databases. Utilization of the scientific literature. OMIM
   Dr. Melegh Béla
5. Chromosomes and their mutations, the basics of cytogenetic methods. X and Y chromosomes. Dysmorphology, and identification of the syndrome. Syndrome search engines in clinical genetics.
   Dr. Melegh Béla
   Dr. Melegh Béla
7. Variability of the human genome, single nucleotide polymorphism (SNP), copy number variations (CNP). HapMap project. Definition of linkage disequilibrium, linkage analysis, LOD score
   Dr. Melegh Béla
   Dr. Melegh Béla
9. Basic molecular biology techniques in human genetics (PCR and variants, use of RFLP, blotting, sequencing and fragment analysis, array techniques, FISH and its extensions, CGH and array CGH, genome association studies, mass spectrometry, and next generation sequencing).
   Dr. Melegh Béla
    Dr. Melegh Béla
11. Diseases in today’s genetics: possible approaches to classical and classically not genetic diseases. The differences between „rare diseases” and diseases affecting large populations.
    Dr. Melegh Béla
    Dr. Melegh Béla
   Dr. Melegh Béla

14 Genetic dilemmas, ethical concerns, laws. ELSI, GINA, 23/2002 EüM regulation and 2008. XXI. Law
   Dr. Melegh Béla

Practices
Seminars
Exam topics/questions
Participants
**UP MS General Medicine major – Elective and Optional subjects – academic year of 2011/2012**

### OAE2DA  **TWO-DIMENSIONAL ANATOMY - MODERN MEDICAL IMAGING TECHNIQUES**

**Course director:**

Dr. Gyula Lázár, professor emeritus

**Department of Anatomy**

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 4

**Number of hours/semester:**

14 lectures + 0 practices + 0 seminars = total of 14 hours

**Headcount limitations (min-max.):**

min. 5 – max. 60

**Prerequisites:**

OAAAA2 completed

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**Topic**

Demonstration of thoracic, abdominal and pelvic organs and the brain with the aid of CT, MRI, ultrasound and radioactive isotope imaging techniques. Using these techniques in internal medicine, obstetrics, neurology, urology, and brain surgery. To show the importance of anatomical knowledge in modern medicine, and call attention to contemporary imaging techniques in the clinical practice.

**Conditions for acceptance of the semester**

Writing two successful tests, and participate in 70% of the lectures.

**Making up for missed classes**

**Reading material**


Visible Human (Web), [http://an-server.pte.hu](http://an-server.pte.hu)

**Lectures**

1. **Topography of thoracic organs in horizontal, frontal and sagittal planes.**
   - Dr. Lázár Gyula
2. **Investigation of the moving heart and its valves by modern imaging techniques.**
   - Dr. Habon Tamás
3. **Topography of abdominal organs in horizontal, frontal and sagittal planes.**
   - Dr. Lázár Gyula
4. **Diagnostic labyrinth of bodily cavities.**
   - Dr. Battyáni István
5. **Internal organs and the skeleton as shown by radioactive isotope imaging.**
   - Dr. Zámbó Katalin
6. **Topography of pelvic organs in horizontal, frontal and sagittal planes.**
   - Dr. Lázár Gyula
7. **Imaging techniques in the urological practice.**
   - Dr. Pytel Ákos
8. **Use of ultrasound imaging techniques in obstetrics.**
   - Dr. Vizer Miklós
9. **Anatomy of the brain in CAT and MRI images.**
   - Dr. Lázár Gyula
10. **Angiography of the neck and head.**
    - Dr. Lázár Gyula
11. **The anatomy of pain as seen by magnetic resonance imaging (fMRI).**
    - Dr. Komoly Sámuel
12. **In vivo neuroanatomical "dissection" of the human brain with the aid of MRI: functional morphology**
    - Dr. Schwartz Attila
13. **Imaging of the central nervous system using techniques of nuclear medicine**
    - Dr. Zámbó Katalin
14. **Modern imaging techniques in brain surgery.**
    - Dr. Dóczi Tamás

**Practices**

**Seminars**

**Exam topics/questions**

**Participants**
OAEEAH  PHYSIOLOGY OF THE ADAPTATION LIMITS OF THE HUMAN BODY

Course director: DR. JÓZSEF LÁSZLÓ KÖRNYEI, associate professor
Department of Physiology

2 credit • midterm grade • Elective module • spring semester • recommended semester: 4

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min 5 – max. 220

Prerequisites: OAAEL1 completed

**Topic**

Following a short review of the relevant physiological regulatory mechanisms, this course focuses on the adaptation limits of the human body under extreme strain situations. The knowledge gained here gives assistance to students with the understanding of the physiological integrative collaboration of organ systems of the human body. Sessions embrace the physiological regulatory mechanisms of the body, the collaboration of different organ systems, while special emphasis is placed on the possible physiological limits and their origins in cases of: high altitudes, deep sea diving, high and low environmental temperatures, starvation and obesity, dehydration and heavy water/salt intake, physical exercise, movement or inactivity, effects of gravity, accelerations, kinetosis, weightlessness, then vision, hearing, intellectual work, attention, concentration, learning/memory, exhaustion, sleep withdrawal, psychological tensions and behavioral activity, usage of tools to overcome these limits.

**Conditions for acceptance of the semester**

Presence and the results of the two in-semester tests.

**Making up for missed classes**

Missed movies can be viewed once on discussed and agreed time schedule, the figures of the lectures are available on the Win95 computers in the lab practice rooms of the Institute of Physiology.

**Reading material**

Physiology textbooks

**Lectures**

1. Introduction, objectives of the course, topics and methods.
   Dr. Környei József László

2. Forms of upward movements I., physiology of adaptation limits: Hiking.
   Dr. Környei József László

3. Forms of upward movements II., Physiological problems during hiking, adaptation limits and their origins.
   Dr. Környei József László

4. Forms of upward movements II., Physiological problems during hiking, adaptation limits and their origins.
   Dr. Környei József László

5. Forms of upward movements III., Gravitational effects, accelerations and their monitoring, physiology of microgravity surroundings.
   Dr. Környei József László

6. Forms of upward movements III., Gravitational effects, accelerations and their monitoring, physiology of microgravity surroundings.
   Dr. Környei József László

7. Forms of underwater activity I., physiology of the adaptation limits
   Dr. Környei József László

8. Forms of underwater activity I., physiology of the adaptation limits
   Dr. Környei József László

9. Deep sea diving II., physiology of the adaptation limits
   Dr. Környei József László

10. Deep sea diving II., physiology of the adaptation limits
    Dr. Környei József László

11. Consultation
    Dr. Környei József László

12. 1st in-semester report test.
    Dr. Környei József László

13. Thermal strain situations I.: total body and local cold effects
    Dr. Környei József László

14. Thermal strain situations I.: total body and local cold effects
    Dr. Környei József László

15. Thermal strain situations II.: total body and local warm effects
    Dr. Környei József László
16 Thermal strain situations II.: total body and local warm effects
   Dr. Környei József László
17 Mechanical resistance of the human body: passive limits (accidental traumas)
   Dr. Környei József László
18 Sport and military strain situations, physiological limits of muscular work.
   Dr. Környei József László
19 Reaction time, coordination of movements, physiology of active limits.
   Dr. Környei József László
20 Causes of accidents, the human factor.
   Dr. Környei József László
21 Electric current and radioactivity limits.
   Dr. Környei József László
22 Weather fronts, physiology of orientation
   Dr. Környei József László
23 Physiological limits of sensory organs in humans, vision and hearing.
   Dr. Környei József László
24 Fear and overcoming it, adrenalin need, effects of sleep withdrawal, upper limits of concentration.
   Dr. Környei József László
25 Physiology of time shift problems, jet-lag.
   Dr. Környei József László
26 Intellectual work, memory, will-power and survival skills.
   Dr. Környei József László
27 Consultation
   Dr. Környei József László
28 2nd in-semester report test, defining progress grades
   Dr. Környei József László

Practices

Seminars

Exam topics/questions
  test questions based on the topics of the lectures

Participants
OAEH4A  MEDICAL HUNGARIAN 4A - BASICS OF MEDICAL COMMUNICATION

Course director:  DR. GÁBOR RÉBÉK-NAGY, associate professor
Department of Languages for Specific Purposes

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 4

Number of hours/semester:  0 lectures + 28 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.):  min. 3 – max. 25
Prerequisites:  OAEH4B parallel + OAEH3A completed

Topic
This course continues providing language and communicative functions in five more areas of medical history taking and is also meant to give opportunities for putting skills and knowledge into practice in preparation for the final exam.

Conditions for acceptance of the semester
Participation in class work is obligatory. In case absences exceed 30% of total class time, the course will be regarded as uncompleted. In the case of absences up to 30% of total class time, oral examination will have to be taken.

Making up for missed classes
Participation is obligatory.

Reading material

Lectures
Practices
1  Paediatrics
2  Paediatrics
3  Paediatrics
4  Dermatology
5  Dermatology
6  Dermatology
7  ENT
8  ENT
9  ENT
10 Ophthalmology
11 Ophthalmology
12 Ophthalmology
13 Dentistry
14 Dentistry
15 Consolidation
16 Test 1
17 Preparation for the Final Exam in Medical Hungarian
18 Preparation for the Final Exam in Medical Hungarian
19 Preparation for the Final Exam in Medical Hungarian
20 Preparation for the Final Exam in Medical Hungarian
21 Preparation for the Final Exam in Medical Hungarian
22 Preparation for the Final Exam in Medical Hungarian
23 Preparation for the Final Exam in Medical Hungarian
24 Preparation for the Final Exam in Medical Hungarian
25 Preparation for the Final Exam in Medical Hungarian
26 Preparation for the Final Exam in Medical Hungarian
27 Test 2
28 Course evaluation

Seminars
Exam topics/questions
Participants
Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Horváth Lilla Anita (HOLFABP..PTE), Kurdirné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Mriczné Győrffy Mária (MOGPAAP.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
**OAEH4B MEDICAL HUNGARIAN 4B - MEDICAL COMMUNICATION IN PRACTICE**

Course director: **DR. GÁBOR RÉBÉK-NAGY**, associate professor
Department of Languages for Specific Purposes

<table>
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<th>2 credit • midterm grade • elective module • spring semester • recommended semester: 4</th>
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<tr>
<td><strong>Number of hours/semester:</strong> 0 lectures + 28 practices + 0 seminars = total of 28 hours</td>
</tr>
<tr>
<td><strong>Headcount limitations (min-max.):</strong> min. 3 – max. 25</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> OAEH4A parallel + OAEH3B completed</td>
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</table>

**Topic**

This course is meant to further develop listening comprehension and speaking skills in five areas of history taking and also to practicing the newly acquired skills in preparation for the final exam in Medical Hungarian.

**Conditions for acceptance of the semester**

Participation in class work is obligatory. In case absences exceed 30% of total class time, the course will be regarded as uncompleted. In the case of absences up to 30% of total class time, oral examination will have to be taken.

**Making up for missed classes**

Participation is obligatory.

**Reading material**


**Lectures**

1. Paediatrics - Listening comprehension and speaking skills
2. Paediatrics - Listening comprehension and speaking skills
3. Paediatrics - Listening comprehension and speaking skills
4. Dermatology - Listening comprehension and speaking skills
5. Dermatology - Listening comprehension and speaking skills
6. Dermatology - Listening comprehension and speaking skills
7. ENT - Listening comprehension and speaking skills
8. ENT - Listening comprehension and speaking skills
9. ENT - Listening comprehension and speaking skills
10. Ophthalmology - Listening comprehension and speaking skills
11. Ophthalmology - Listening comprehension and speaking skills
12. Ophthalmology - Listening comprehension and speaking skills
13. Dentistry - Listening comprehension and speaking skills
14. Dentistry - Listening comprehension and speaking skills
15. Consolidation
16. Test 1
17. Preparation for the Final Exam in Medical Hungarian
18. Preparation for the Final Exam in Medical Hungarian
19. Preparation for the Final Exam in Medical Hungarian
20. Preparation for the Final Exam in Medical Hungarian
21. Preparation for the Final Exam in Medical Hungarian
22. Preparation for the Final Exam in Medical Hungarian
23. Preparation for the Final Exam in Medical Hungarian
24. Preparation for the Final Exam in Medical Hungarian
25. Preparation for the Final Exam in Medical Hungarian
26. Preparation for the Final Exam in Medical Hungarian
27. Test 2
28. Course evaluation

**Seminars**

Exam topics/questions

Participants

Dr. Hegedüs Anita (HEAAA.A.B.JPTE), Dr. Rébék-Nagy Gábor (REGC.AC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Horváth Lilla Anita (HOLFABP.PTE), Kúrdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészárotné Halmos Éva (MEHHABE.PTE), Móriczné Győrffy Mária (MOGPAAP.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
**OAEXEX SEXOLOGY**

*Course director:* Dr. Géza Hartmann, research professor (junior)

<table>
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<tr>
<th>2 credit • midsemester grade • Elective module • both semesters semester • recommended semester: 4</th>
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<tr>
<td><strong>Number of hours/semester:</strong> 28 lectures + 0 practices + 0 seminars = total of 28 hours</td>
</tr>
<tr>
<td><strong>Headcount limitations (min-max.):</strong> min. 5 – max. 20</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> OAAEL1 completed + OAAMB2 completed</td>
</tr>
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</table>

**Topic**

Because a lot of doctors cannot give advice to patients having sexual problems, we try to give informations to the medical students for recognition and therapy of sexual dysfunctions. The lectures discuss the history of human sexuality and sexual investigations, the physiology of the sexual response, the organic and psychological causes of sexual dysfunctions and variations (deviations), sexual problems in puberty and climacteric, contraception, the pornography and prostitution, etc.

**Conditions for acceptance of the semester**

Active participation on the lectures, absent maximum 4 times.

**Making up for missed classes**

In next semester

**Reading material**

Kaplan, H. S.: The Sexual Desire Disorders
Kaplan, H. S.: The New Sex Therapy
Hite, S.: Hite report: Shere Hite a nationwide study of female sexuality

**Lectures**

1. History of sexual investigations
   Dr. Hartmann Géza
2. History of human sexuality
   Dr. Hartmann Géza
3. Sexual problems in puberty
   Dr. Csermely Tamás
4. Sexual problems in puberty
   Dr. Csermely Tamás
5. Contraception
   Dr. Garai János
6. Contraception
   Dr. Garai János
7. Stages of sexual reaction
   Dr. Hartmann Géza
8. Desire disorders and their treatment
   Dr. Hartmann Géza
9. Stage of excitement
   Dr. Hartmann Géza
10. Stage of excitement
    Dr. Hartmann Géza
11. Masturbation
    Dr. Hartmann Géza
    Dr. Hartmann Géza
13. Mechanisms of erection
    Dr. Hartmann Géza
14. Erectile dysfunction and treatment
    Dr. Hartmann Géza
15. Surgical treatment of erectile dysfunction
    Dr. Hartmann Géza
16. Surgical treatment of erectile dysfunction
    Dr. Hartmann Géza
17. Premature ejaculation. Retarded ejaculation.
    Dr. Hartmann Géza
18 Orgasm  
   Dr. Hartmann Géza
19 Orgastic dysfunction  
   Dr. Hartmann Géza
20 Treatment of orgastic dysfunctions  
   Dr. Hartmann Géza
21 Vaginismus.  
   Dr. Hartmann Géza
22 Sexual problems in older ages  
   Dr. Hartmann Géza
23 Sexual deviations  
   Dr. Tényi Tamás
24 Sexual deviations  
   Dr. Tényi Tamás
25 Forensic medicine and sexology  
   Dr. Jegesy Andrea
26 Forensic medicine and sexology  
   Dr. Jegesy Andrea
27 Pornography and prostitution  
   Dr. Hartmann Géza
28 Test  
   Dr. Hartmann Géza

Practices

Seminars

Exam topics/questions
Test exam

Participants
OAETIZ  CENTRAL REGULATION OF FEEDING AND METABOLISM. NEW APPROACHES

Course director: DR. ZOLTÁN KARÁDI, professor
Department of Physiology

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 4

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 2 – max. 25
Prerequisites: OAAMB2 completed + OAAOK2 completed + OAAAA2 parallel

Topic
The high incidence and costs of eating and metabolic disorders make it indispensable to experimentally test new theoretical considerations, and to employ their conclusive results in basically new clinical protocols. Students at early stage of their studies are, thus, encouraged to familiarize with new theoretical aspects and experimental findings.


Conditions for acceptance of the semester
according to general regulations

Making up for missed classes
individually discussed

Reading material
Guyton & Hall: Textbook of Medical Physiology (Saunders)
Williams and Pickup: Handbook of Diabetes (Blackwell)
Doty: Handbook of Olfaction and Gustation (Marcel Dekker)

Lectures
1 Physiological significance of food and fluid intake, and metabolism.
   Dr. Karádi Zoltán
2 Homeostasis, motivation.
   Dr. Karádi Zoltán
3 Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. I.
   Dr. Karádi Zoltán
4 Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. II.
   Dr. Karádi Zoltán
5 Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. III.
   Dr. Karádi Zoltán
6 Exogenous chemosensory modalities. Physiologic roles of gustation.
   Dr. Karádi Zoltán
7 Central taste pathways, „labeled lines“, neurons.
   Dr. Karádi Zoltán
8 Taste preference, taste aversion, palatability, flavour.
   Dr. Karádi Zoltán
9 The glucose-monitoring (GM) neural network. I.
   Dr. Karádi Zoltán
10 The glucose-monitoring (GM) neural network. II.
   Dr. Karádi Zoltán
11 The glucose-monitoring (GM) neural network. III.
   Dr. Karádi Zoltán
12 Eating and metabolic disorders: obesity, anorexia nervosa, diabetes mellitus, metabolic syndrome. I.
   Dr. Karádi Zoltán
13 Eating and metabolic disorders: obesity, anorexia nervosa, diabetes mellitus, metabolic syndrome. II.
   Dr. Karádi Zoltán
14 Feeding and metabolic disorders: disturbance of the GM system?
   Dr. Karádi Zoltán
Practices

Seminars

Exam topics/questions
according to topics of the lectures

Participants
OAEABE  INBORN ERRORS OF METABOLISM

Course director: DR. TAMÁS DECSI, professor
Department of Paediatrics

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 5

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 24
Prerequisites: -

Topic
Inborn errors of metabolism represent rare, but altogether important diseases of paediatrics. Significant developments in therapeutic modalities during the last decade led to major improvement in the prognosis of the inherited diseases of metabolism. This course summarises basic knowledge about the diagnostics and therapy of inborn errors of metabolism. Practical examples of patients treated for these diseases in the Department of Paediatrics serve for discussing not only the way to diagnosis, but the long-term clinical care as well.

Conditions for acceptance of the semester
Missing more than four hours of teaching excludes the student from the course. The performance of the students will be continuously evaluated during the course.

Making up for missed classes
Missing from maximum of four hours of teaching can be amended by reading the teaching material at home and answering questions related to the missed topic.

Reading material

Lectures
1  Importance of inborn errors of metabolism in paediatrics
   Dr. Decsi Tamás
2  Clinical signs and symptoms of inborn errors of metabolism
   Dr. Decsi Tamás
3  General considerations in amino acid metabolism disorders
   Dr. Decsi Tamás
4  Disturbances of phenylalanin metabolism
   Dr. Decsi Tamás
5  Disturbances of tyrosin metabolism
   Dr. Decsi Tamás
6  Disturbances of homocysteine metabolism
   Dr. Decsi Tamás
7  General considerations in carbohydrate metabolism disorders
   Dr. Decsi Tamás
8  The role of family physicians in the treatment of inborn errors of metabolism
   Dr. Decsi Tamás
9  Current principles of treating inborn errors of metabolism
   Dr. Decsi Tamás
10 Ornithin transcarbamylase defect
    Dr. Decsi Tamás
11 General considerations in urea cycle disorders
    Dr. Decsi Tamás
12 Fructose intolerance
    Dr. Decsi Tamás
13 Disturbances of galactose metabolism
    Dr. Decsi Tamás
14 Glycogenoses
    Dr. Decsi Tamás

Practices
Seminars
Exam topics/questions
Participants
Dr. Decsi Tamás (DETIAAK.PTE)
Pathophysiology of Chronic Obstructive Lung Diseases (COPD)

Course director: Dr. Marta Balaskó, assistant professor
Department of Pathophysiology and Gerontology

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 5

Number of hours/semester:
14 lectures + 0 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 100

Prerequisites:
OAABK2 completed + OAAEL2 completed + OAPKO1 parallel

Topic
Chronic obstructive lung diseases (COPD) are among the leading causes of mortality in our society. The aim of the course is to analyse the epidemiology, pathogenesis and consequences of the diseases that belong to COPD with regard to the latest scientific evidence. Topics of the course include the pathophysiology of smoking and its consequences, the theoretical basis of the prevention and therapy of bronchial asthma, chronic bronchitis and emphysema. Participants of the course will take an active part in lung function tests in the Laboratory of Respiratory Physiology and gain practical insight in the functional diagnostics of COPD. Theory will be complemented by case histories.

Conditions for acceptance of the semester
Active participation in the lectures (maximum 2 absences), minimum 40% score on the two tests (7. and 14. lecture)

Making up for missed classes
An essay on the topic of the missed lecture.

Reading material

Lectures
1. Definition of chronic obstructive pulmonary diseases. Epidemiology of COPD. Systemic inflammation in COPD.
   Dr. Balaskó Márta
2. Pathophysiological consequences of smoking/tobacco use.
   Dr. Balaskó Márta
   Dr. Balaskó Márta
4. Chronic bronchitis: etiology, pathogenesis, and complications. II.
   Dr. Balaskó Márta
5. Emphysema: etiology, pathogenesis, and complications. I.
   Dr. Balaskó Márta
6. Emphysema: etiology, pathogenesis, and complications. II. Case history.
   Dr. Balaskó Márta
7. 1. Test (20-30 min) Established drugs in the therapy of COPD.
   Dr. Balaskó Márta
8. New directions in the therapy of COPD. Differential diagnosis of COPD.
   Dr. Balaskó Márta
9. Etiology and pathogenesis of bronchial asthma. I.
   Dr. Balaskó Márta
10. Etiology and pathogenesis of bronchial asthma. II. Case history.
    Dr. Balaskó Márta
11. Pathophysiological concepts of asthma treatment. I.
    Dr. Balaskó Márta
    Dr. Balaskó Márta
13. 2. Test (20-30 min). Specific spirometric features of different types of COPD. Discussion of case histories I.
    Dr. Balaskó Márta
14. Discussion of case histories. II.
    Dr. Balaskó Márta

Practices

Seminars
Exam topics/questions
The definition and epidemiological features of COPD
Etiology and pathogenesis of chronic bronchitis
Lung function tests and other diagnostic criteria of chronic bronchitis
Complications of chronic bronchitis
Pathophysiological basis of the treatment of chronic bronchitis
Etiology, pathogenesis and complications of emphysema
The pathophysiology of smoking
The definition and epidemiological features of bronchial asthma
Etiology and pathogenesis of bronchial asthma
Lung function tests and other diagnostic criteria of bronchial asthma
Complications of bronchial asthma
Pathophysiological concept of the treatment of bronchial asthma

The grade depends on the test scores.

Participants
UP MS General Medicine major – Elective and Optional subjects – academic year of 2011/2012

OAEIM1 IMMUNPATHOLOGY 1
Course director: Dr. Péter Németh, professor
Department of Immunology and Biotechnology

2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 5
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 300
Prerequisites: OAAIMM completed + OAPPA1 parallel

Topic
Introduction to the pathological background of immune related diseases. Interactive discussions on the basic mechanisms of autoimmune diseases, acquired or hereditary immunodeficiencies, tumor immunology, immunological problems of organ transplantations. Clinico-pathological analysis of different immunoregulatory failures. Overview of the present biotherapies and the future perceptiveness from the therapeutical monoclonal antibodies to the tumor vaccines.

Conditions for acceptance of the semester
Active presence on the lectures. Maximum absence 4 hours.

Making up for missed classes
Reading material
See the www.immbio.hu web site during the semester.

Lectures
1. Targeting type immune reactions against well conserved antigens
   Dr. Németh Péter
2. Basic mechanisms of the autoimmune diseases
   Dr. Németh Péter
3. Physiological autoimmunity
   Dr. Németh Péter
4. Immunosuppression on autoimmune diseases
   Dr. Németh Péter
5. Systemic autoimmune diseases
   Dr. Németh Péter
6. Autoimmune steady state
   Dr. Németh Péter
7. Organ specific autoimmune diseases
   Dr. Németh Péter
8. Immunological tolerance
   Dr. Németh Péter
9. Non-specific and antigens specific immunosuppression for protection of grafted tissues
   Dr. Németh Péter
10. Failures of the immunological tolerance
    Dr. Németh Péter
11. Role of genetically conserved antigens under physiological conditions
    Dr. Németh Péter
12. Natural antibodies in pathological immune regulation
    Dr. Németh Péter
13. Allergic reactions in health and diseases
    Dr. Németh Péter
14. Immunological aspects or organ transplantation
    Dr. Németh Péter
15. Medical biotechnological perpectives on immunotherapies
    Dr. Németh Péter
16. Basic mechanism of hypersensitive reactions
    Dr. Németh Péter
17. Main trends in the immunological laboratory diagnostics
    Dr. Németh Péter
18. Hereditied and acquired immunodeficiencies
    Dr. Németh Péter
19. Tumor escape
    Dr. Németh Péter
20 Hypersensitive immunoreactions as immunopathological background of different diseases
   Dr. Németh Péter
21 Delayed type hypersensitivity in chronic inflammatory diseases
   Dr. Németh Péter
22 Immunity against tumors
   Dr. Németh Péter
23 Biotherapies in malignant diseases
   Dr. Németh Péter
24 Tumor vaccines
   Dr. Németh Péter
25 Pathological autoimmunity
   Dr. Németh Péter
26 Biotherapies of autoimmune diseases
   Dr. Németh Péter
27 Natural antibodies in physiological immune regulation
   Dr. Németh Péter
28 Problems of the vaccine development in HIV infection
   Dr. Németh Péter

Practices
Seminars
Exam topics/questions
See the www.immbio.hu web site before 4 weeks of exam period.
Participants
OAENDP  NEUROLOGICAL PROPEDEUTICS AND DIFFERENTIAL DIAGNOSIS

Course director: DR. ÁGNES SEBŐK, assistant lecturer
Department of Neurology

1 credit • midesterm grade • Elective module • autumn semester • recommended semester: 5

Number of hours/semester:
14 lectures + 0 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 20

Prerequisites: OAAEL2 completed + OAANEA completed

Topic
This course is recommended after completion of basic neuroanatomy and neurophysiology (Semesters 5-10). Complaints, symptoms and syndroms associated with lesion of specific structures in the nervous system will be discussed through case studies. After a brief summary of the theoretical background, an interactive discussion of the cases follows, with specific emphasis on differential diagnosis. Plenty of pictures, videos and some bed-side patient-demontstration are included.

Conditions for acceptance of the semester
Making up for missed classes

Reading material

Lectures
1 Chief complaint: Paresis
   Dr. Illés Zsolt
2 Chief complaint: Paresis
   Dr. Illés Zsolt
3 Chief complaint: Pain and sensory symptoms
   Dr. Sebők Ágnes
4 Chief complaint: Pain and sensory symptoms
   Dr. Sebők Ágnes
5 Chief complaint: Double, blurred or diminished vision
   Dr. Illés Zsolt
6 Chief complaint: Double, blurred or diminished vision
   Dr. Illés Zsolt
8 Chief complaint: Speech-related problems
   Dr. Sebők Ágnes
9 Chief complaint: Speech-related problems
   Dr. Sebők Ágnes
10 Chief complaint: Hyperkinesis and other movement disorders
    Dr. Illés Zsolt
11 Chief complaint: Hyperkinesis and other movement disorders
   Dr. Illés Zsolt
11 Chief complaint: Confusion, dementia
   Dr. Sebők Ágnes
12 Chief complaint: Confusion, dementia
   Dr. Sebők Ágnes
13 CT and MRI: Specific areas with specific complaints and symptoms
   Dr. Illés Zsolt
14 CT and MRI: Specific areas with specific complaints and symptoms
   Dr. Illés Zsolt

Practices

Seminars

Exam topics/questions

Participants
OAETD3  STUDENT PROJECT RESEARCH 3

Course director:  Dr. BALOGH, PÉTER, Außerordentlicher Professor
Undergraduate Research

2 credit • midterm grade • Elective module • both semesters semester • recommended semester: 5

Number of hours/semester:  0 lectures + 24 practices + 0 seminars = total of 24 hours

Headcount limitations (min-max.):  min. 1 – max. 300

Prerequisites:  OAFTD2 completed

Topic
The aim of this subject is to nurture and promote the activity of students sufficiently motivated to perform biomedical project research. The students may progressively enroll to four parts in four separate semesters, for the total credit value of 8. For acknowledging the 3rd and 4th (elective) parts, the student must train research student novice(s).

The subject’s administrator is the actual Chairman of the Students’ Research Society (SRS) of the Faculty of Medicine.

Conditions for acceptance of the semester
To enroll this course a registered SRS membership and completion of Student Project Research 1/2 are mandatory. Acknowledging the course requires first-author presentation of work at a Students’ conference (UP or elsewhere) or Dean’s assay, or presentation at any professional conference relevant to the research field. Grades will be accorded corresponding to the criteria set out in the Rules and Regulations of SRS.

Making up for missed classes
Not applicable

Reading material

Lectures

Practices
Research

Seminars

Exam topics/questions

Participants
Dr. Balogh Péter (BAPOAGP.PTE)
OAEASZ  THE ANTIMICROBIAL DRUGS AND THEIR CLINICAL USE
Course director: DR. BÉLA KOCSIS, associate professor
Department of Medical Microbiology and Immunology

2 credit • midsession grade • Elective module • spring semester • recommended semester: 6
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 100
Prerequisites: OAPM/I1 completed

Topic
The aim of these lectures is to give a reliable and detailed knowledge about the antimicrobial drugs and their clinical use; to give ideas how to choose the proper drug for the prophylaxis and therapy of infectious diseases

Conditions for acceptance of the semester

Making up for missed classes

Reading material
Jawetz et al.; Medical Microbiology

Lectures
1 Introduction, historical data, basic definitions
   Dr. Kocsis Béla
2 Characterisation of antimicrobial drugs, chemical structure, their targets
   Dr. Kocsis Béla
3 Characterisation of antimicrobial drugs, sensitivity and resistance
   Dr. Kocsis Béla
4 Characterisation of antimicrobial drugs, sensitivity and resistance
   Dr. Kocsis Béla
5 Pharmacokinetics and pharmacodynamics of anti-infective drugs
   Dr. Kocsis Béla
6 The antibiotic prophylaxis.
   Dr. Kocsis Béla
7 The empiric antimicrobial therapy
   Dr. Kocsis Béla
8 The antimicrobial therapy based on microbiologic result
   Dr. Kocsis Béla
9 The choice of best antimicrobial drug
   Dr. Kocsis Béla
10 The reasons of an unsuccessful antimicrobial therapy
   Dr. Kocsis Béla
11 The antimicrobial drugs in details. The inhibitors of the cell wall biosynthesis Beta-lactams Penicillins
   Dr. Kocsis Béla
12 Cephalosporins
   Dr. Kocsis Béla
13 Carbapenems, monobactams, glicopeptides
   Dr. Kocsis Béla
14 The inhibitors of the protein biosynthesis Aminoglicosides
   Dr. Kocsis Béla
15 Tetracyclines Chloramphenicol Macrolides
   Dr. Kocsis Béla
16 The inhibitors of the nucleic acid biosynthesis Rifampins Sulfonamides
   Dr. Kocsis Béla
17 Kinolons Fluorokinolons
   Dr. Kocsis Béla
18 The antimycotic drugs
   Dr. Kocsis Béla
19 The antimycotic drugs
   Dr. Kocsis Béla
20 The antiviral drugs
   Dr. Kocsis Béla
21 The antiviral drugs HIV - AIDS
   Dr. Kocsis Béla
22 The antiparasitic therapy The chemoprophylaxis of malaria
   Dr. Kocsis Béla
23 The antimicrobial therapy of respiratory and urinary tract infections
   Dr. Kocsis Béla
24 Cardiovascular and wound infections, sepsis
   Dr. Kocsis Béla
25 Central nervous system, abdominal and enteric infections
   Dr. Kocsis Béla
26 Antimicrobial therapy of patients under immunosuppression, pregnancy....
   Dr. Kocsis Béla
27 The pharmacological aspects of antimicrobial therapy
   Dr. Kocsis Béla
28 The future of antimicrobial therapy
   Dr. Kocsis Béla

Practices

Seminars

Exam topics/questions

- 

Participants
OAEDMB  BIOPHYSICAL BASIS OF DIAGNOSTIC AND THERAPEUTIC METHODS

Course director:  DR. GÁBOR HILD, associate professor
Department of Biophysics

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 6
Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 25
Prerequisites: OAABII2 completed + OAEL2 completed

Topic
The course addresses the physical and biophysical basis of modern diagnostic and therapeutic methods employed in current medical practice.

Conditions for acceptance of the semester
Maximum of three absences.

Making up for missed classes

Reading material

Lectures

Practices

Seminars
1 Introduction
2 Production and properties of ultrasound. Diagnostic and therapeutic applications of ultrasound
3 Isotopes and nuclear radiations. Biological effects of nuclear radiations. Principles and realization of radiation therapy
4 Principles of nuclear magnetic resonance methods. Magnetic resonance imaging (MRI)
5 Gamma-camera, SPECT. Principles and applications of positron emission tomography (PET)
6 Properties, production, detection, absorption and interactions of X-rays. Diagnostic X-rays. Computer tomography (CT)
7 Fiber optics and endoscopes. Optical microscopy. Electron microscopy. Fluorescence and confocal microscopy
8 Properties of laser light, its absorption and effect on the tissues. Dermatological, ophthalmological and surgical applications of lasers. Photodynamic therapy
9 Absorption photometry and fluorescence spectroscopy
10 Physical therapy. Galvanic methods, Diathermy
11 Structure, function and applications of flow cytometers and cell sorters
12 Physical basis of renal dialysis. Electrophysiological examination methods (ECG, EEG, EMG)
13 Principles and applications of mass spectrometry
14 Test writing

Exam topics/questions
Can be found on the departmental website (http://biofizika.aok.pte.hu)

Participants
Barkó Szilvia (BASFAA.T.JPTE), Dr. Bódis Emőke (BOEAAD.T.JPTE), Dr. Hild Gábor (HIGMAAO.PTE), Dr. Talián Csaba Gábor (TACRAAO.PTE), Dr. Visegrády Balázs (VIBAAB.T.JPTE), Kardos Roland (KARFAB.T.JPTE), Szatmári Dávid Zoltán (SZDHAAT.PTE), Ujfalusi Zoltán (UJZDAA.T.JPTE), Vig Andrea Teréz (V1AFAAO.PTE)
PAIN AND ANALGESICS

Course director: DR. GÁBOR PETHŐ, professor
Department of Pharmacology and Pharmacotherapy

1 credit • Elective module • spring semester • recommended semester: 6
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Headcount limitations (min-max.): min. 5 –
Prerequisites: OAPGT1 completed

Topic
The aim of the course is to (i) provide information on peripheral and central mechanisms of pain and hyperalgesia; (ii) describe the major features of existing analgesics including opioids, non-steroidal antiinflammatory agents and adjuvant analgesics; (iii) outline novel targets for development of analgesic drugs. The course will also help students to prepare for the exams in Pharmacology 2 and 3.

Conditions for acceptance of the semester
There are no special regulations (the rules of Code of studies and examinations apply).

Making up for missed classes
There is no way to make up for missed lectures.

Reading material
The material of the lectures are available in PDF format on the Intranet site of the Department of Pharmacology and Pharmacotherapy.

Lectures
1 Basic terms related to pain and nociceptors
   Dr. Pethő Gábor
2 Features of capsaicin-sensitive nociceptors
   Dr. Pethő Gábor
3 Peripheral mechanisms of hyperalgesia
   Dr. Pethő Gábor
4 Central mechanisms of hyperalgesia and allodynia
   Dr. Pethő Gábor
5 Features of neuropathic pain
   Dr. Pethő Gábor
6 Pharmacology of non-steroidal antiinflammatory-analgesic drugs I
   Dr. Pethő Gábor
7 Pharmacology of non-steroidal antiinflammatory-analgesic drugs II
   Dr. Pethő Gábor
8 Pharmacology of opioid analgesics I
   Dr. Pethő Gábor
9 Pharmacology of opioid analgesics II
   Dr. Pethő Gábor
10 Adjuvant analgesics
    Dr. Pethő Gábor
11 New targets for development of analgesics I
    Dr. Pethő Gábor
12 New targets for development of analgesics II
    Dr. Pethő Gábor

Practices

Seminars

Exam topics/questions
No exam questions are given. The essay questions of the written exam are based on the material presented.

Participants
OAEFBE  PREVENTION OF INFECTIOUS DISEASES: CHALLENGES AND SOLUTIONS FOR PRACTICING DOCTORS

Course director:  DR. ZOLTÁN TIGYI, assistant professor
Department of Medical Microbiology and Immunology

2 credit • midssemester grade • Elective module • spring semester • recommended semester: 6

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours

Headcount limitations (min-max.): min. 2 – max. 15

Prerequisites: OAAAMB2 completed + OAPMI1 completed + OAPPA1 completed

Topic

The aims of the course to help the students to get acquainted with:

- some important basic epidemiological methods (both classic and molecular ones)
- the factors play roles in spread of infectious diseases inside and outside of the hospital
- the methods that prevent and block the spread of infections,
- the emerging and re-emerging infections,
- the epidemiology and prevention of nosocomial (hospital acquired) infections,
- therapeutic principle of preventing and controlling the spread of antibiotic resistance.

Conditions for acceptance of the semester

The students have to choose a sub-topic from the detailed list freely, and they have to prepare a power point a presentation, under the supervision of the tutor. The lecture has to be given 15 minutes in duration.

- The student should give right answer to the basic questions of the topics and active participation in the discussions is also required.

- Assessment: active participation on seminars:~20%, the shown presentation:~80%.

- In case of insufficient performance: 3 questions have to be answered

Making up for missed classes

The opportunity of the personal appointment is assured and the copies of the slides of the lecturer are available in electronic format (PDF).

Reading material

Modern Infectious Disease Epidemiology (Paperback) by Johan Giesecke,
Control Of Communicable Diseases Manual by David L. Heymann
Infectious Disease Epidemiology: Theory And Practice (Hardcover) by Kenrad E., M.D. Nelson , Carolyn F. Masters, Ph.D. Williams

Lectures

Practices

Seminars

1. Basic concepts, aims and tools, short historical introduction.
2. Basic concepts, aims and tools, short historical introduction.
3. The transmission of infections (vectors, reservoirs)
4. The transmission of infections (vectors, reservoirs)
5. The traditional epidemiologic methods (biostatistics, laboratory identification of pathogens)
6. The traditional epidemiologic methods (biostatistics, laboratory identification of pathogens)
9. How do environmental factors (climate, society, nutrition, human behaviour ..) affect the spread of infectious diseases ?
10. How do environmental factors (climate, society, nutrition, human behaviour ..) affect the spread of infectious diseases ?
11. Emerging and re-emerging Infections.
12. Emerging and re-emerging Infections.
13. The risk of bioterrorism and its epidemiologic background I.
14. The risk of bioterrorism and its epidemiologic background I.
15. The risk of bioterrorism and its epidemiologic background II.
16. The risk of bioterrorism and its epidemiologic background II.
17. Epidemiology of the nosocomial (hospital acquired) infections I.
18. Epidemiology of the nosocomial (hospital acquired) infections I.
19. Epidemiology of the nosocomial (hospital acquired) infections II.
20. Epidemiology of the nosocomial (hospital acquired) infections II.
21. The aims and methods of the infectious disease surveillance.
The aims and methods of the infectious disease surveillance.
Factors and measures helping and inhibiting the development of antimicrobial resistance.
Factors and measures helping and inhibiting the development of antimicrobial resistance.
The possibilities of the prevention of infectious diseases (specific methods; vaccination; aspecific methods....)
The possibilities of the prevention of infectious diseases (specific methods; vaccination; aspecific methods....)
Evaluation of the students on the basis of: Presentations given of their chosen topic during the course and their activity during the seminars.
Evaluation of the students on the basis of: Presentations given of their chosen topic during the course and their activity during the seminars. Filling up feedback questionnaire.

Exam topics/questions
The major topics are delineated in details on the first seminar. The sub-topics of the presentation of the students are subjected to negotiation.

Participants
Dr. Tigyi Zoltán (TIZHAAE.PTE)
## Basics of Gerontology

**Course director:** Dr. Miklós Székely, professor emeritus  
Department of Pathophysiology and Gerontology  

### 2 credit • midsemester grade • Elective module • spring semester • recommended semester: 6

**Number of hours/semester:** 28 lectures + 0 practices + 0 seminars = total of 28 hours  
**Headcount limitations (min-max.):** min. 5 – max. 30  
**Prerequisites:** OAPBPR completed + OAPKO1 completed

### Topic

The population is aging. Knowledge of special physiological, psychosocial aspects, age-related problems and methods of care may help adequate health provision for the elderly patients.

### Conditions for acceptance of the semester

Absence from less than 15% (max. 3) of lectures. Answering the questions of a written account.

### Making up for missed classes

Writing an essay from the topic of the omitted lecture.

### Reading material

The Merck Manual of Geriatrics (MSD, Rathway, 1990)

### Lectures

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<th>Instructor</th>
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<td>Concepts of gerontology. Demography</td>
<td>Dr. Székely Miklós</td>
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<td>2</td>
<td>Biological/chronological age. Physiological aging</td>
<td>Dr. Székely Miklós</td>
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<td>3</td>
<td>Biological theories of aging I</td>
<td>Dr. Balaskó Mártá</td>
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<td>4</td>
<td>Biological theories of aging II</td>
<td>Dr. Balaskó Mártá</td>
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<td>5</td>
<td>Acute/chronic diseases, polimorbidity in the elderly</td>
<td>Dr. Székely Miklós</td>
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<td>Problems of diagnosis and therapy</td>
<td>Dr. Székely Miklós</td>
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<td>Homeostatic functions and aging</td>
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<td>Adaptability, vulnerability</td>
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<td>9</td>
<td>Cardiorespiratory disorders in the elderly I</td>
<td>Dr. Soós Szilvia</td>
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<td>Cardiorespiratory disorders in the elderly II</td>
<td>Dr. Soós Szilvia</td>
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<td>11</td>
<td>Changes of energy balance</td>
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<td>12</td>
<td>Gastrointestinal changes in the elderly</td>
<td>Dr. Rittmann-né Pétervári Erika</td>
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<td>13</td>
<td>Endocrine changes with age</td>
<td>Dr. Garai János</td>
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<td>14</td>
<td>Diabetes mellitus in the elderly</td>
<td>Dr. Garai János</td>
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<td>15</td>
<td>Renal functions: changes with age</td>
<td>Dr. Székely Miklós</td>
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<td>16</td>
<td>Salt/water balance changes with age</td>
<td>Dr. Székely Miklós</td>
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<td>17</td>
<td>Geriatric syndromes I</td>
<td>Dr. Székely Miklós</td>
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<td>18</td>
<td>Geriatric syndromes II</td>
<td>Dr. Székely Miklós</td>
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<td>19</td>
<td>Gait disorders, motor system in the elderly</td>
<td>Dr. Varjú Cecília</td>
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</table>
20 Aging and immune processes  
   Dr. Varjú Cecilia  
21 Psychosocial factors in gerontology I  
   Dr. Lampek Kinga  
22 Psychosocial factors in gerontology II  
   Dr. Lampek Kinga  
23 Problems of the caretaking team  
   Dr. Heim Szilvia  
24 Geriatrics in family medicine  
   Dr. Heim Szilvia  
25 Rehabilitation  
   Dr. Székely Miklós  
26 Chronic care, nursing  
   Dr. Székely Miklós  
27 Test-exam  
   Dr. Székely Miklós  
28 Test-exam  
   Dr. Székely Miklós

Practices

Seminars

Exam topics/questions
Written account (test) from the topics of the course.

Participants
**OAELP CLINICOPATHOLOGY**

Course director: DR. LÁSZLÓ PAJOR, professor  
Department of Pathology

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 6

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 200

Prerequisites: OAPPA1 completed

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**Topic**

During the course of pathology the clinicopathological view is emphasized in order to aid the synthesis of clinical and laboratory data and alterations detected by macro- and microscopical examination. The development of basic clinicopathological thinking and differential diagnostic skills is required by the end of the pathology curriculum, which is further supported by the demonstration of a case related to the subject of lectures every week.

**Conditions for acceptance of the semester**

Acceptance of the semester: according to the Code of Studies of Examination

**Making up for missed classes**

**Reading material**


**Lectures**

1. Clinicopathology  
   Dr. Pajor László
2. Clinicopathology  
   Dr. Pajor László
3. Clinicopathology  
   Dr. Pajor László
4. Clinicopathology  
   Dr. László Terézia
5. Clinicopathology  
   Dr. László Terézia
6. Clinicopathology  
   Dr. Gömöri Éva
7. Clinicopathology  
   Dr. Gömöri Éva
8. Clinicopathology  
   Dr. Bogner Barna
9. Clinicopathology  
   Dr. Tornóczky Tamás
10. Clinicopathology  
    Dr. Kravják András
11. Clinicopathology  
    Dr. Tornóczky Tamás
12. Clinicopathology  
    Dr. Bogner Barna
13. Clinicopathology  
    Dr. Kereskai László
14. Clinicopathology  
    Dr. Pajor László

**Practices**

**Seminars**

**Exam topics/questions**

Type of exam: test, progress grade

**Participants**

Dr. Gömöri Éva (GOEMAAO.PTE), Dr. Hagedűs Ivett (HEIPAAP.PTE), Dr. Kálmán Endre (KAEMAAO.PTE), Dr. Kereskai László (KELMAAO.PTE), Dr. Kovács Krisztina (KOKFAAO.PTE), Dr. Kravják András (KRAFAAO.PTE), Dr. László Terézia (LATMAAO.PTE), Dr. Oszter Angéla (OSAFAAO.PTE), Dr. Pajor László (PALGAAO.PTE), Dr. Tornóczky Tamás (TOTMABO.PTE), Márton Balázs Dr., Semjén Dávid Dr., Smuk Gábor Dr.
OAEKME CASE REPORTS IN CLINICAL MICROBIOLOGY

Course director: DR. LEVENTE EMODY, professor emeritus
Department of Medical Microbiology and Immunology

2 credit • midsemester grade • Elective module • both semesters semester • recommended semester: 6

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Headcount limitations (min-max.): min. 1 – max. 100
Prerequisites: OAPMI1 completed + OAPPA1 completed + OAAIMM completed

Topic
The course deals with common and special cases of infectious diseases discussing the case history, clinical and laboratory diagnosis, therapy and prevention.
1-2 case studies will be discussed with microbiological demonstration in each seminar. As the seminars are problem solving in character, and they need a common thinking with the students, to give the topics in a curricular form would be against the sense of the course.

Conditions for acceptance of the semester
Presence at least 80% of the seminars
Making up for missed classes
Individual preparation from the recommended book and from notes of fellow-students

Reading material

Lectures
Practices
Seminars
1 Pyoderma case story
2 Pyoderma discussion
3 Food poisoning case story
4 Food poisoning discussion
5 Pharyngotonsillitis case story
6 Pharyngotonsillitis discussion
7 Urinary tract infection case story
8 Urinary tract infection discussion
9 Bacterial haemolysis case story
10 Bacterial haemolysis discussion
11 Salmonellosis case story
12 Salmonellosis discussion
13 Botulismus case story
14 Botulismus discussion
15 Gas gangrene case story
16 Gas gangrene discussion
17 Intrauterine infection case story
18 Intrauterine infection discussion
19 Meningitis case story
20 Meningitis discussion
21 Influenza case story
22 Influenza discussion
23 HIV infection case story
24 HIV infection discussion

Exam topics/questions
Delivery of the exam questions in advance would interfere with the aim of the course as students could figure out in advance the subject of the cases to be presented. Questions on the individual topics will be made open for the participants’ right after the individual seminars.

Participants
Dr. Emődy Levente (EMLGAAO.PTE), Dr. Kocsis Béla (KOBHACE.PTE)
**OAEMAO BEHAVIORAL MEDICINE**

Course director: **DR. JÓZSEF VARGA**, assistant professor  
Department of Behavioural Sciences

<table>
<thead>
<tr>
<th>Credit</th>
<th>midsession grade</th>
<th>Elective module</th>
<th>spring semester</th>
<th>recommended semester: 6</th>
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<td>2</td>
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**Number of hours/semester:**  
0 lectures + 28 practices + 0 seminars = total of 28 hours

**Headcount limitations (min-max.):**  
min. 5 – max. 16

**Prerequisites:**  
OAPMT5 completed

**Topic**  
Strong evidences support that health condition, illness and life expectancies are determined by the individual’s life style and behavior. Patients’ illness behavior and coping abilities have an impact on the outcome of illness and rehabilitation. This course introduces into the processes of health behavior and behavior changing focusing on the therapeutic aspects of chronic diseases and specific clinical fields.

**Conditions for acceptance of the semester**  
According to the Code of Studies and Examinations.

**Making up for missed classes**  
According to the Code of Studies and Examinations.

**Reading material**  


**Lectures**

3. Psychovegetative correlates of behavior and emotions.
4. Psychovegetative correlates of behavior and emotions.
5. Relationship, understanding, compliance, adherence in the practice of behavioral medicine.
6. Relationship, understanding, compliance, adherence in the practice of behavioral medicine.
15. Psychological issues in gynecology and pulmonology.
17. Pain syndrome, psychological methods of pain management.
25. Behavior, culture and illness.
27. Summary, discussion, exam.
28. Summary, discussion, exam.

**Seminars**

**Exam topics/questions**  
A topic presentation + closing test.
Participants
Dr. Tiringer István (TIIHAAE.PTE), Dr. Varga József (VAJGABO.PTE), Kerekes Zsuzsanna (KEZDA.A.T.PTE)
**OAENDG  NEUROLOGICAL DIFFERENTIAL DIAGNOSIS**

Course director: **DR. ÁGNES SEBŐK**, assistant lecturer  
Department of Neurology

1 credit • mideameter grade • Elective module • spring semester • recommended semester: 6

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.):  min. 5 – max. 20

Prerequisites: OAAEL2 completed + OAAEAN completed

**Topic**

Through interactive discussion of neurological cases, the diagnosis and differential diagnosis of specific neurological problems will be studied. History, symptoms, and test results will be analysed, based on previous studies in neurophysiology, neuropathology and radiology. Plenty of pictures, videos and some bed-side patient-demonstration will be included.

**Conditions for acceptance of the semester**
as usual

Making up for missed classes

Reading material

[www.cncs.hu](http://www.cncs.hu)

**Lectures**

1. Case study  
   Dr. Illés Zsolt
2. Case study  
   Dr. Illés Zsolt
3. Case study  
   Dr. Illés Zsolt
4. Case study  
   Dr. Illés Zsolt
5. Case study  
   Dr. Illés Zsolt
6. Case study  
   Dr. Illés Zsolt
7. Case study  
   Dr. Illés Zsolt
8. Case study  
   Dr. Sebők Ágnes
9. Case study  
   Dr. Sebők Ágnes
10. Case study  
    Dr. Sebők Ágnes
11. Case study  
    Dr. Sebők Ágnes
12. Case study  
    Dr. Sebők Ágnes
13. Case study  
    Dr. Sebők Ágnes
14. Case study  
    Dr. Sebők Ágnes

**Practices**

**Seminars**

Exam topics/questions

[www.cncs.hu](http://www.cncs.hu)

Participants
**OAEOLA APPLIED MEDICAL PSYCHOLOGY**

**Course director:** DR. JÓZSEF VARGA, assistant professor
Department of Behavioural Sciences

1 credit • midterm grade • elective module • spring semester • recommended semester: 6

**Number of hours/semester:**
0 lectures + 14 practices + 0 seminars = total of 14 hours

**Headcount limitations (min-max.):**
min. 5 – max. 16

**Prerequisites:** OAPMT5 completed

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**Topic**

This course deals with psychological aspects of medical practice, focusing on common issues, like: development of physician’s identity; risk factors of medical profession; becoming ill and recovering; practice of empathy; effective communication and interviewing and sources of errors; basics of psychoterapeutic approach in general practice.

**Conditions for acceptance of the semester**

According to the Code of Studies and Examinations.

**Making up for missed classes**

Additional homework.

**Reading material**


**Lectures**

**Practices**

1. Becoming a physician, mental health and medical profession.
2. Becoming a physician, mental health and medical profession.
3. Becoming ill, meaning of illness, coping with illness.
4. Becoming ill, meaning of illness, coping with illness.
5. Effective doctor-patient relationship, empathy.
7. Effective communication in the doctor-patient relationship.
8. Effective communication in the doctor-patient relationship.
9. Interview and history taking, biases in communication.
10. Interview and history taking, biases in communication.

**Seminars**

**Exam topics/questions**

A topic presentation + closing test.

**Participants**

Dr. Tiringer István (TIIHAE.PTE), Dr. Varga József (VAJGABO.PTE), Kerekes Zsuzsanna (KEZDAA.T.PTE)
**OAESMT OPERATIVE SURGICAL TECHNIQUES**

**Course director:**
Dr. György Wéber, professor
Department of Surgical Research and Techniques

1 credit • midsession grade • Elective module • spring semester • recommended semester: 6

- **Number of hours/semester:** 0 lectures + 14 practices + 0 seminars = total of 14 hours
- **Headcount limitations (min-max.):** min. 3 – max. 16
- **Prerequisites:** OAPMUA completed + OAPSPR parallel

**Topic**
The main objective of the course is to enhance the manual skill of the surgery oriented students by means of the presentation and practicing of the most general surgical interventions. According to the course schedule, brushing up of Basic Surgical Techniques is followed by the presentation and practicing of the most general surgical interventions. Students become acquainted with some basic techniques of abdominal and thoracic surgery.

**Conditions for acceptance of the semester**
According to the code of studies.

**Making up for missed classes**
Attendance in every practice is obligatory. Because of limited capacity of operating theatre, absence cannot be repeated by joining another group.

**Reading material**
[http://soki.aok.pte.hu](http://soki.aok.pte.hu)

**Lectures**

**Practices**
1. Practicing of basic suture techniques on pig tissue.
2. Practicing of basic suture techniques on pig tissue.
3. Incision of pigmented nevus on anesthetized animal.
4. Incision of pigmented nevus on anesthetized animal.
5. Surgical incisions on the abdominal wall on anesthetized animal.
6. Surgical incisions on the abdominal wall on anesthetized animal.
7. Preparation of inguinal vessels, laparotomy, open cholecystectomy, splenectomy on anesthetized animal.
8. Preparation of inguinal vessels, laparotomy, open cholecystectomy, splenectomy on anesthetized animal.
9. Appendectomy, side-to-side and end-to-end bowel anastomoses on anesthetized animal.
10. Appendectomy, side-to-side and end-to-end bowel anastomoses on anesthetized animal.
11. Thoracotomy and atypical lung resection on anesthetized animal.
12. Thoracotomy and atypical lung resection on anesthetized animal.
13. Tracheostomy on anesthetized animal.
14. Tracheostomy on anesthetized animal.

**Seminars**

**Exam topics/questions**
[http://soki.aok.pte.hu/](http://soki.aok.pte.hu/)

**Participants**
Dr. Balatonyi Borbála (BABHAAO.PTE), Dr. Borsiczky Balázs (BOBQAAO.PTE), Dr. Ferenc Andrea (FEAMAAO.PTE), Dr. Ferencz Sándor (FESDAA.T.JPTE), Dr. Jávor Szaniszló (JASHAAO.PTE), Dr. Lantos János (LAJM AAO.PTE), Dr. Wéber György (WEGMAAO.PTE)
OAETD4  STUDENT PROJECT RESEARCH 4

Course director: DR. BALOGH, PÉTER, Außerordentlicher Professor
Undergraduate Research

2 credit • midsemester grade • Elective module • both semesters semester • recommended semester: 6

Number of hours/semester:  0 lectures + 24 practices + 0 seminars = total of 24 hours
Headcount limitations (min-max.): min. 1 – max. 300
Prerequisites: OAETD3 completed

Topic
The aim of this subject is to nurture and promote the activity of students sufficiently motivated to perform biomedical project research. The students may progressively enroll to four parts in four separate semesters, for the total credit value of 8. For acknowledging the 3rd and 4th (elective) parts, the student must train research student novice(s).

The subject’s administrator is the actual Chairman of the Students’ Research Society (SRS) of the Faculty of Medicine.

Conditions for acceptance of the semester
To enroll this course a registered SRS membership and completion of Student Project Research 1/2 are mandatory. Acknowledging the course requires first-author presentation of work at a Students’ conference (UP or elsewhere) or Dean’s assay, or presentation at any professional conference relevant to the research field. Grades will be accorded corresponding to the criteria set out in the Rules and Regulations of SRS.

Making up for missed classes
Not applicable

Reading material

Lectures
Practices
Research
Seminars

Exam topics/questions

Participants
Dr. Balogh Péter (BAPOAGP.PTE)
OAETF$P$ PERFORMANCE-ENHANCING DRUGS. PHYSIOLOGY, PHARMACOLOGY AND CLINICAL ASPECTS.

Course director: DR. GÁBOR POZSGAI, assistant lecturer
Department of Pharmacology and Pharmacotherapy

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 6

Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Headcount limitations (min-max.): min. 5 – max. 30
Prerequisites: OAAEL2 completed

Topic
The course covers performance-enhancing drugs widely used by athletes. After reviewing history and legal control, main groups of performance-enhancing agents are discussed. Physiological and pharmacological characteristics of individual drugs are delineated. Practical aspects of performance-enhancing compounds for clinicians are illustrated through examples.

Conditions for acceptance of the semester
Exam: test exam.
Maximal tolerated absence: 25% of seminars.
Making up for missed classes
Not possible.

Reading material
Drugs in Sport; Fifth Edition; David R. Mottram; Routledge 2010.

Lectures
Practices
Seminars
1 History of performance-enhancing drugs, their detection and control.
2 Endogenous anabolic androgenic steroids.
3 Exogenous anabolic androgenic steroids and other anabolic agents.
4 Aromatase enzyme inhibitors and Selective Estrogen Receptor Modulators.
5 Peptide hormones and growth factors.
6 Enhancement of oxygen transfer.
7 Stimulants.
8 Adrenergic beta 2 receptor agonists and adrenergic beta receptor antagonists.
9 Opioids, cannabinoids, ethanol.
10 Minimizing impact of injuries and enhancement of recovery.
11 Food supplements. Gene doping.
12 Diuretics and masking techniques.

Exam topics/questions
Participants
Dr. Pozsgai Gábor (POGFAAO.PTE)
OAEBRM  SKIN SYMPTOMS IN RHEUMATOLOGIC DISEASES
Course director:  DR. GÁBOR HORVÁTH, department clinician
Department of Immunology and Rheumatology

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 7
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Headcount limitations (min-max.): min. 5 – max. 22
Prerequisites: OAPMI2 completed + OAPPA2 completed + OARBEL completed

**Topic**
Participants should gain a basic knowledge of the cutaneous manifestations of rheumatic and immunologic illnesses, with special emphasis on differential diagnostics. They are expected to receive an interdisciplinary approach to patients in dermatologic-rheumatic-immunologic fields.

**Conditions for acceptance of the semester**
Ability to describe skin symptoms in rheumatic patients.

**Making up for missed classes**
Not possible.

**Reading material**
O. Braun-Falco: Dermatology

**Lectures**
1. Primary and secondary skin lesions 1.  
   Dr. Gábor Horváth
2. Primary and secondary skin lesions 2.  
   Dr. Gábor Horváth
3. Examining patients with skin lesions 1.  
   Dr. Gábor Horváth
4. Examining patients with skin lesions 2.  
   Dr. Gábor Horváth
5. Psoriasis, psoriatic arthritis  
   Dr. Gábor Horváth
6. Vasculitis  
   Dr. Gábor Horváth
7. Skin lesions in SLE, differential diagnostics 1.  
   Dr. Gábor Horváth
8. Skin lesions in SLE, differential diagnostics 2.  
   Dr. Gábor Horváth
   Dr. Gábor Horváth
10. Dermatologic aspects of other rheumatic illnesses (sarcoidosis, tuberculosis, Lyme disease, erythema nodosum, etc.)  
    Dr. Gábor Horváth
11. Raynaud’s syndrome, livedo reticularis, purpuric skin lesions  
    Dr. Gábor Horváth
12. Most common aspects in diagnostics  
    Dr. Gábor Horváth

**Practices**
**Seminars**

**Exam topics/questions**

**Participants**
OAEDON  DEPRESSION AND SUICIDE - CLINICAL AND RESEARCH APPROACH
Course director: DR. SÁNDOR FEKETE, professor
Department of Psychiatry and Psychotherapy

1 credit • midsession grade • Elective module • autumn semester • recommended semester: 7

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 10
Prerequisites: OAPGT1 completed

Topic
Suicide is one of the human possibilities - death can be chosen, while the meaning of this choice is different. It appears to be a personal action, paradoxically, neurobiological and sociocultural factors play an important role in its etiology. Suicidal behaviour is a multiply determined act, but rarely occur outside a context of a psychiatric disorder. The stress–diathesis model of suicide and depression emphasizes both sides of the mind–body coin, the psychological and the biological. In the psychological aspect, past events may have sensitized individuals to see themselves as failures. The biological aspect implicates three biological systems: overactivity of the HPA axis, serotonergic and noradrenergic dysfunction. Mental illnesses, especially depressions are the most replicated predictors for suicides. The course reflects intention to approach and understand the phenomenon of suicide, its relation to depression, brain research, the treatment and prevention in a complex way.

Conditions for acceptance of the semester
According to the Code of Studies and Examinations

Making up for missed classes
According to the Code of Studies and Examinations

Reading material
Kaplan Sadock: Synopsis of psychiatry (2005)
Fekete S., Osvath, P.: Suicide studies- from genetics to psychiatry and culture (2005)

Lectures
Practices
Seminars
1 Suicide and depression-historical, cultural-clinical aspect
2 Suicide and depression-clinical aspect, comorbidity
3 Social-epidemiological results
4 Social-epidemiological results
5 Psychological approaches
6 Psychological approaches
7 Psychopathology-personality-temperament, psychobiology
8 Genetics-neurobiology - brain structural - functional changes
9 Genetics-neurobiology - brain structural - functional changes, fMRI
10 Mental disorders and suicide, diagnosis
11 Mental disorders and suicide, diagnosis, fMRI results
12 Psychotherapy, prevention, Biological therapy
13 Pharmacotherapy and brain research data
14 Assisted suicide and euthanasia

Exam topics/questions
Participants
Dr. Fekete Sándor (FESHABE.PTE), Dr. Osváth Péter (OSPMAAO.PTE), Dr. Vörös Viktor
UP MS General Medicine major – Elective and Optional subjects – academic year of 2011/2012

OAEGST SPECIAL FIELDS OF PHARMACOLOGY
Course director: DR. GÁBOR PETHŐ, professor
Department of Pharmacology and Pharmacotherapy

1 credit • midterm grade • Elective module • autumn semester • recommended semester: 7

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Headcount limitations (min-max.): min. 5 –
Prerequisites: OAPGT2 parallel

Topic
The aim of the course is to present those fields of pharmacology that are not covered at all or only partially discussed in the compulsory courses Pharmacology 1-2-3 because of time limits. These are the following: pharmacology of contrast media, pharmacology of retinoids; special pharmacological aspects of drug inhalation, use of meta-analysis in evaluation of drugs, basics of chronopharmacology; significance of pharmacogenomics in therapy and drug development, principles of choosing rational drug combinations; use of drugs during pregnancy and lactation; clinical significance of basic pharmacodynamic and pharmacokinetic parameters; special aspects of drugs used in urology, ophthalmology and dermatology. The course wishes to contribute to a better understanding of use of drugs in the clinical practice and may help students to prepare for the pharmacology exams.

Conditions for acceptance of the semester
There are no special regulations (rules of the Code of Studies and Examinations apply).

Making up for missed classes
There is no way to make up for missed lectures.

Reading material
The material of the lectures will be available in PDF format on the Intranet site of the Department of Pharmacology and Pharmacotherapy.

Lectures
1 Special aspects of use of drugs during pregnancy and lactation
   Dr. Pethő Gábor
2 Significance of pharmacogenomics in therapy and drug development
   Dr. Pethő Gábor
3 Use of meta-analysis in evaluation of drugs
   Dr. Pethő Gábor
4 Basics of chronopharmacology
   Dr. Pethő Gábor
5 Clinical significance of pharmacodynamic and pharmacokinetic parameters on the example of drugs used in respiratory diseases I
   Dr. Pethő Gábor
6 Clinical significance of pharmacodynamic and pharmacokinetic parameters on the example of drugs used in respiratory diseases II
   Dr. Pethő Gábor
7 Principles of choosing rational drug combinations
   Dr. Pethő Gábor
8 Pharmacology of contrast media
   Dr. Pethő Gábor
9 Pharmacology of retinoids
   Dr. Pethő Gábor
10 Ophthalmological pharmacology
   Dr. Pethő Gábor
11 Urological pharmacology
   Dr. Pethő Gábor
12 Dermatological pharmacology
   Dr. Pethő Gábor

Practices
Seminars

Exam topics/questions
No exam questions are given. The essay questions of the written exam are based on the material presented.

Participants
### OAEIDR BIOPHYSICAL BACKGROUND AND CLINICAL APPLICATION OF ISOTOPDIAGNOSTIC AND RADIOTHERAPEUTIC METHODS

**Course director:** DR. KATALIN ZÁMBÓ, professor

**Department of Nuclear Medicine**

<table>
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<th>2 credit • midterm grade • Elective module • autumn semester • recommended semester: 7</th>
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<td><strong>Number of hours/semester:</strong> 20 lectures + 8 practices + 0 seminars = total of 28 hours</td>
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<td><strong>Headcount limitations (min-max.):</strong> min. 3 – max. 60</td>
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<tr>
<td><strong>Prerequisites:</strong> OAPBPR completed + OAPKO2 completed + OAPPA2 completed</td>
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**Topic**

A detailed presentation will be given of modern physical biophysical and imaging methods to follow the pathway of radiopharmacons in different organs to earn precise morphological and functional results by the new multimodal systems (SPECT/CT, PET/CT).

**Conditions for acceptance of the semester**

The applicants—in the case of more than one absence (up to maximum three absences in which must not be the consultation or test)—should prepare and will be tested from the missed topics given by the instructor. In the case of more than three absences the course can not be accepted.

**Making up for missed classes**

The applicants—in the case of more than one absence (up to maximum three absences in which must not be the consultation or test)—should prepare and will be tested from the missed topics given by the instructor.

**Reading material**

It will be announced at the beginning of the course depending on the possibilities of libraries of two departments. A permanent source could be the roaming in the Internet.

**Lectures**

1. Isotopes, radioactive radiations, gamma-camera, SPECT
   - Dr. Zámbó Katalin
2. Isotopes, radioactive radiations, gamma-camera, SPECT
   - Dr. Zámbó Katalin
3. Work function of PET and its application
   - Dr. Zámbó Katalin
4. Work function of PET and its application
   - Dr. Zámbó Katalin
5. Diagnostic and therapeutic methods of thyroid and parathyroid glands
   - Dr. Zámbó Katalin
6. Diagnostic and therapeutic methods of thyroid and parathyroid glands
   - Dr. Zámbó Katalin
7. Diagnostic methods of respiratory system and inflammation
   - Dr. Zámbó Katalin
8. Diagnostic methods of respiratory system and inflammation
   - Dr. Zámbó Katalin
9. Diagnostic and therapeutic methods of bone and joint system
   - Dr. Schmidt Erzsébet
10. Diagnostic and therapeutic methods of bone and joint system
    - Dr. Schmidt Erzsébet
11. Diagnostic methods of urogenital and gastrointestinal systems
    - Dr. Zámbó Katalin
12. Diagnostic methods of urogenital and gastrointestinal systems
    - Dr. Zámbó Katalin
13. Nuclear cardiology
    - Dr. Zámbó Katalin
14. Nuclear cardiology
    - Dr. Zámbó Katalin
15. Nuclear oncology, aspecific methods
    - Dr. Schmidt Erzsébet
16. Nuclear oncology, aspecific methods
    - Dr. Schmidt Erzsébet
17 Nuclear oncology, specific methods and therapy  
   Dr. Schmidt Erzsébet

18 Nuclear oncology, specific methods and therapy  
   Dr. Schmidt Erzsébet

19 Diagnostic methods of central nervous system  
   Dr. Szabó Zsuzsanna

20 Diagnostic methods of central nervous system  
   Dr. Szabó Zsuzsanna

**Practices**

1. Presentation of equipments of hot-lab, preparation of radiopharmaceuticals
2. Completion, evaluation and diagnosis of thyroid gland and lung examinations
3. Scintigraphy of bone and medulla, evaluation and diagnosis
4. Evaluation and diagnosis of kidney and liver examinations
5. SPECT and SPECT/CT evaluation and diagnosis in cardiac diseases
6. Evaluation and diagnosis of neurological examinations
7. SPECT and SPECT/CT in oncological investigations, evaluation and diagnosis
8. Principles, problems and follow up of radiotherapy, radiation exposure

**Seminars**

**Exam topics/questions**

Written test.

**Participants**

Dr. Schmidt Erzsébet (SCEMAAO.PTE), Dr. Szabó Zsuzsanna (MOSGABA.PTE), Dr. Zámbó Katalin (BOZMAAO.PTE)
Topic
The task is to apply the information from pathophysiology in clinical practice. The pathophysiological backgrounds of clinical disorders of cardiovascular, respiratory, hematological or renal origin are to be analyzed.

Conditions for acceptance of the semester
Max. 3 absences.
Successful final test (at least 40% result).

Making up for missed classes
Reading material

Lectures
1 Clinical interpretation of ECG
   Dr. Tóth Kálmán
2 Chronic heart failure, basic ways of therapy
   Dr. Habon Tamás
3 Trauma/sepsis: management at intensive care units
   Dr. Kanizsai Péter
4 Angina pectoris, basic forms of therapy
   Dr. Tóth Kálmán
5 Cerebrovascular disorders
   Dr. Szapáry László
6 Endothel, renin-angiotensin, blood pressure
   Dr. Kovács Tibor
7 Pulmonary embolism
   Dr. Sárosi István
8 COPD, bronchial asthma
   Dr. Balikó Zoltán
9 From hypertension to end-stage renal failure
   Dr. Kovács Tibor
10 Thrombophilia
    Dr. Losonczy Hajna
11 Electrolyte- and pH-disorders in the intensive care
    Dr. Molnár Zsolt
12 Proteinuria and its interpretation
    Dr. Nagy Judit
13 Granulocyte disorders
    Dr. Balaskó Mártat
14 Spiroergometric examinations
    Dr. Balaskó Mártat

Practices
Seminars
Exam topics/questions
Test-exam
Participants
OAEKKM Complex Pathophysiological Mechanisms

Course director:  
DR. MIKLÓS SZÉKELY, professor emeritus  
Department of Pathophysiology and Gerontology

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 7

Number of hours/semester:  
14 lectures + 0 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.):  
min. 5 – max. 30

Prerequisites:  
OAPKO2 completed

Topic

On basis of information from pathophysiology, the pathomechanism and consequences of complex (physiological and/or pathological) functional changes are analyzed, which changes affect several organs and regulatory systems.

Conditions for acceptance of the semester

Less than 15% (max 2x 2-h occasions) absence from lectures. Written test from the topics of the course.

Making up for missed classes

Essay from the subject of the omitted lecture.

Reading material

Lectures

1 Evolution and manifestation of diseases  
   Dr. Szelényi Zoltán
2 Complex energetic insufficiencies  
   Dr. Rittmann-né Pétervári Erika
3 Cold-related disorders  
   Dr. Solymár Margit
4 Comparison of metabolic coma states  
   Dr. Székely Miklós
5 Alcohol action, alcoholism  
   Dr. Rittmann-né Pétervári Erika
6 Global warming and medicine  
   Dr. Székely Miklós
7 Pathophysiology of pregnancy  
   Dr. Szelényi Zoltán
8 Metabolic syndrome  
   Dr. Soós Szilvia
9 Chronic bed-rest  
   Dr. Szelényi Zoltán
10 Basics of medical diet  
   Dr. Garai János
11 Homocysteic acid, folic acid and health  
   Dr. Garai János
12 Pathophysiology of oxygen therapy  
   Dr. Soós Szilvia
13 Pathophysiology of low/high atmospheric pressure  
   Dr. Székely Miklós
14 Smoking and air pollution  
   Dr. Balaskó Márta

Practices

Seminars

Exam topics/questions

Test-exam

Participants
OAEKOE  CASE-REPORTS: PATHOPHYSIOLOGICAL ANALYSES

Course director: DR. MIKLŐS SZÉKELY, professor emeritus
Department of Pathophysiology and Gerontology

1 credit • midssemester grade • Elective module • autumn semester • recommended semester: 7

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 20
Prerequisites: OAPK02 completed

Topic
Analysis of case-reports in various topics, all from the aspect of pathophysiology (background, interactions, etc.) in an interactive way (discussions).

Conditions for acceptance of the semester
Less than 15% absence.
Analysis of a written case-report at the end of the course.

Making up for missed classes

Reading material
Lectures
Practices
Seminars
1 Case-reports: cardiovascular diseases I
2 Case-reports: cardiovascular diseases II
3 Problems in hematology
4 Trauma cases
5 Acute respiratory disorders
6 Chronic respiratory disorders
7 Case-reports: gastrointestinal disorders
8 Pancreatic and hepatic disorders
9 Toxicoses I
10 Toxicoses II
11 Case-reports: disorders of the intermediary metabolism I
12 Case-reports: disorders of the intermediary metabolism II
13 Case-studies: endocrine disorders I
14 Case-studies: endocrine disorders II

Exam topics/questions

Participants
Dr. Balaskó Márta (BAMMAAO.PTE), Dr. Garai János (GAJMAAO.PTE), Dr. Rittmann-né Pétervári Erika (PEEFAAO.PTE), Dr. Solymár Margit (SOMFAAO.PTE), Dr. Soós Szilvia (SOSFAO.PTE), Dr. Székely Miklós (SZMGAEO.PTE)
Topic
Psychosomatic medicine examines the definition, constructs, and dilemmas that confront professionals working at the interface of medicine and psychiatry, psychosomatic medicine, and consultation-liaison psychiatry. Psychosomatic medicine can be described as well as the subspecialty of psychiatry that focuses on medical and psychiatric comorbidity.

The course is intended to define key problems of psychosomatic medicine and advise methods of diagnosis and treatment.

Conditions for acceptance of the semester
Writing a paper about an optional psychosomatic disorder
Absence: max. 15% of seminars
Examination: Multiple Choice Test
Making up for missed classes
Reading material
Psychosomatic Medicine, Michael Blumenfield, MD - James J. Strain, MD, 2006 by Lippincott Williams & Wilkins, ISBN: 0781760461

Lectures
Practices
Seminars
2 Symptoms. Historical Perspective and Effect on Diagnosis. Diagnostic and Classificatory Dilemmas
3 Depression. A Systemic Illness
4 Evolution of Measurement
5 Implications of Culture
6 Cardiovascular Disease
7 Oncology
8 Gastrointestinal Disease
9 Pulmonary Disease
10 Rheumatoid Diseases
11 Conversion Disorders, Somatization, Hypochondriasis
12 Death and Dying. Pain and Palliative Care
13 Cognitive Behavioral Therapy. Personality Traits and Disorders
14 Examination

Exam topics/questions
Psychosomatic Medicine: History of a New Specialty
Symptoms: Historical Perspective and Effect on Diagnosis. Diagnostic and Classificatory Dilemmas
Depression: A Systemic Illness
Evolution of Measurement
Implications of Culture
Cardiovascular Disease
Oncology
Gastrointestinal Disease
Pulmonary Disease
Rheumatoid Diseases
Conversion Disorders, Somatization, Hypochondriasis
Death and Dying. Pain and Palliative Care
Cognitive Behavioral Therapy. Personality Traits and Disorders

Participants
Dr. Tiringer István (TIIHAAE.PTE), Dr. Varga József (VAJGABO.PTE), Kerekes Zsuzsanna (KEZDAA.TJPTIE)
Topic
Sleep medicine is a new medical specialty which covers the sleep related knowledge of the classic medical disciplines (neurology, internal medicine, pulmonology, etc.). The importance of the sleep medicine is underlined by the facts that significant portion of cardio- and cerebrovascular pathology is based on sleep related breathing disorders, and both job and traffic accidents can be the consequence of sleepiness and/or insomnia.

The main topics of this course are: excessive daytime sleepiness, sleep apnea syndrome, sleep related movement disorders, insomnias, parasomnias, circadian sleep disorders, noninvasive ventilation and the connection between the sleep disorders and occupational medicine.

Conditions for acceptance of the semester
2 lectures

Making up for missed classes
personal consultation

Reading material

Lectures
1 History of sleep medicine
   Dr. Faludi Béla
2 Sleep physiology.
   Dr. Faludi Béla
3 Sleep examination methods 1.: Polysomnography, Pulzoxymetry, Actigraphy, MSLT, MWT.
   Dr. Faludi Béla
4 Sleep examination methods 2.: Polysomnography. Classification of sleep disorders (ICSD2)
   Dr. Faludi Béla
5 Insomnia.
   Dr. Faludi Béla
6 Excessive daytime sleepiness.
   Dr. Köves Péter
7 Pathophysiology of obstructive sleep apnea syndrome. Hypertony and stroke in sleep apnea syndrome.
   Dr. Faludi Béla
8 Cardiological consequence of obstructive sleep apnea syndrome.
   Dr. Faludi Béla
9 Sleep related movement disorders: RLS, PLMD.
   Dr. Szakács Zoltán
10 Parasomnias.
   Dr. Faludi Béla
11 Narcolepsy. Sleep apnea and epilepsy.
   Dr. Faludi Béla
12 Sleep problems in dementias. Circadian sleep disorders.
   Dr. Faludi Béla
13 Noninvasive ventilation in sleep medicine.
   Dr. Faludi Béla
14 Occupational medicine and sleep disorders.
   Dr. Faludi Béla

Practices
Seminars
Exam topics/questions
neurology.pote.hu
Participants
Dr. Faludi Béla (FABHAAE.PTE), Dr. Köves Péter (NEMPTE01.PTE), Dr. Szakács Zoltán (NEMPTE02.PTE)
OAEATE  ANAESTHETIC TECHNIQUES

Course director:  DR. ISTVÁN BÁTAI, associate professor
Department of Anaesthesia and Intensive Therapy

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 8

Number of hours/semester:  0 lectures + 0 practices + 12 seminars = total of 12 hours
Headcount limitations (min-max.):  min. 1 – max. 25
Prerequisites:  OAPGT1 completed + OAPKO2 completed

Topic
This course describes the main anaesthetic techniques (inhalational, intravenous, regional). It also emphasizes the indications, contraindications and complications in the early postoperative period. The aim is to help the non-anaesthetists involved in patient management in the perioperative period.

Conditions for acceptance of the semester
Maximum 25% absence is accepted.

Making up for missed classes

Reading material
Lecture notes.

Lectures
Practices
Seminars
1  The pharmacokinetics of total intravenous anaesthesia (TIVA).
2  Drugs used for TIVA
3  Indications, contraindications and complications of TIVA
4  The pharmacokinetics of inhalational anaesthesia
5  Drugs used in inhalational anaesthesia
6  Indications, contraindications and complications of inhalational anaesthesia
7  The anatomy of regional anaesthesia
8  Drugs used in regional anaesthesia
9  Regional anaesthesia - neuraxial block
10 Regional anaesthesia - peripheral nerve blocks of the upper limb
11 Regional anaesthesia - peripheral nerve blocks of the lower limb
12 Intravenous regional anaesthesia (IVRA)

Exam topics/questions
Test.

Participants
Dr. Bátai István (BAIMABO.PTE)
**IMMUNOLOGICAL DISEASES OF THE GASTROINTESTINAL TRACT**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>Dr. Gábor Süto, clinical director and head of department</th>
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<tbody>
<tr>
<td>Number of hours/semester:</td>
<td>10 lectures + 0 practices + 2 seminars = total of 12 hours</td>
</tr>
<tr>
<td>Headcount limitations (min-max.):</td>
<td>min. 2 – max. 10</td>
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<tr>
<td>Prerequisites:</td>
<td>OAKKIR parallel</td>
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</table>

**Topic**

Aims are to review:
1. the morphology and function of gastrointestinal immune system
2. the interaction between environmental factors and mucosal immune system
3. the pathology of autoimmune and immune mediated gastrointestinal diseases
4. the gastrointestinal involvement of systemic autoimmune diseases
5. current therapeutic approaches targeting gastrointestinal immune system.

**Conditions for acceptance of the semester**

Successful test exam.

**Making up for missed classes**

**Reading material**

**Lectures**

1. Physiology of the gastrointestinal immune system: Anatomy, development, antigen recognition, tolerance and autoimmunity in the gastrointestinal tract.
   Dr. Süto Gábor
2. Physiology of the gastrointestinal immune system: Anatomy, development, antigen recognition, tolerance and autoimmunity in the gastrointestinal tract.
   Dr. Süto Gábor
   Dr. Süto Gábor
   Dr. Süto Gábor
5. Celiac disease
   Dr. Süto Gábor
6. Inflammatory bowel disease.
   Dr. Süto Gábor
   Dr. Süto Gábor
8. Gastrointestinal manifestations of connective tissue disease.
   Dr. Süto Gábor
9. Gastrointestinal manifestations of connective tissue diseases.
   Dr. Süto Gábor
10. Spondylarthropathies and gastrointestinal inflammation.
    Dr. Süto Gábor

**Practices**

**Seminars**

Consultation before the exam.

**Exam topics/questions**

**Participants**

Dr. Süto Gábor (SUGPAAP.PTE)
OAEGCT  PRACTICAL ULTRASOUND AND CT DIAGNOSTICS

Course director: DR. ISTVÁN BATTYÁNI, associate professor
Department of Radiology

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 8

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 15
Prerequisites: OAABI2 completed + OAKKRA completed

Topic
The course is opened for all of the students who are successfully completed the Clinical Radiology subject. The aim of the course is to get more information and practice on the field of ultrasound and CT techniques. The US practice is focus mainly to the abdominal and vascular examinations, and the students will learn the latest, newest CT technology applications in the clinical practice. During the practice the students have to make examinations by self.

Conditions for acceptance of the semester
To get the index book signed, a maximum of 2 (two) seminars (4 hours) may be missed and they are not replaceable by any kind. Missed seminars, caused by disease, can be certified by a written certificate obtained from the treating physician (booked in the log of his/her office)!

Making up for missed classes
No possibility for the replacement.

Reading material
In English:
- G. M. Roberts, J. P. Hughes, and M. D. Hourihan: Clinical Radiology for Medical Students
In Hungarian:
- Fráter, Palkó, Makó, Kollár, Battyányi: Radiológia (Medicina, 2007)
Recommended:
Davit Sutton: Textbook of Radiology and Imaging (latest edition), ELSEVIER

Lectures
Practices
1. Physics and technical applications of ultrasonography. New development. (Dr. István Battyáni)
2. Ultrasound terminology and US appearance of different pathologic conditions. (Dr. István Battyáni)
3. Liver and biliary ultrasound imaging. (Dr. István Battyáni)
4. Liver and biliary ultrasound imaging in practice.
5. Spleen, pancreas and GI tract US imaging. (Dr. István Battyáni)
7. Genitourinary system, prostate, adrenal gland US imaging. (Dr. István Battyáni)
9. Retroperitoneum, large vessels, peritoneum US imaging. (Dr. István Battyáni)
10. Retroperitoneum, large vessels, peritoneum US imaging in practice.
11. Ultrasound contrast materials. (Dr. Krisztina Miklós)
12. Ultrasound contrast material in practice. (Dr. Ákos Járay)
13. Soft tissue, lymphnode, thyroid US imaging. (Dr. Gábor Szalai)
15. Musculosceletal US imaging. (Dr. Zsófia Farbaky)
16. Musculosceletal US imaging. (Dr. Zsófia Farbaky)
17. Diseases of peripheral vessels and their ultrasound imaging. (Dr. István Battyáni)
18. Diseases of peripheral vessels and their ultrasound imaging in practice.
19. Techniques and new developments of computer tomography. (Dr. István Battyáni)
20. Dual energy imaging in clinical practice. (Dr. István Battyáni)
21. Abdominal CT diagnostics. (Dr. István Battyáni)
22. Abdominal CT diagnostics in practice.
23. Chest CT diagnostics. (Dr. István Battyáni)
25. Ultrasound magnetic navigation. (Dr. Zoltán Harmat)
27 Ultrasound practice.
28 Practical exam with test.

Seminars

Exam topics/questions
Practical exam with test.

Participants
Dr. Battyáni István (BAIHABO.PTE), Dr. Harmat Zoltán (HAZMAAO.PTE)
OAEGLM PRACTICES IN LABORATORY MEDICINE

Course director: DR. L. GÁBOR KOVÁCS, professor
Department of Laboratory Medicine

1 credit • midsession grade • Elective module • spring semester • recommended semester: 8

Number of hours/semester: 0 lectures + 14 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 30
Prerequisites: OAKKBK completed

Topic
Short description of the subject: discretionary laboratory analysis of the samples obtained from the human body is indispensable for the exact assessment of the pathophysiological processes in the patients. Also it is of utmost importance for establishing a diagnosis, monitoring the efficacy of treatment and in preventive medical care. Our subject is based on the previous chemical, biochemical, physiological, pathological, clinical biochemistry knowledge and gives a practical guide to learn those basic laboratory tests that all medical students are expected to do and should perform correctly.

Conditions for acceptance of the semester
Attendance of the practices is obligatory. Absences up to 25% can be accepted.

Making up for missed classes
Those absent from a practical lesson can join another group performing the same topics (within the two-week period of the practical lessons)

Reading material
Practice notes will be written by the staff of Institute of Laboratory Medicine

Lectures
Practices
1. Sample collection and preparation - blood, urine, body fluids
2. Sample collection and preparation - blood, urine, body fluids
3. Microscopic and automated blood picture tests
4. Microscopic and automated blood picture tests
5. Basic and automated tests in blood coagulation and hemostasis
6. Basic and automated tests in blood coagulation and hemostasis
7. Urine analysis (chemical and microscopic testing)
8. Urine analysis (chemical and microscopic testing)
9. Automated clinical chemistry tests
10. Automated clinical chemistry tests
11. POCT (Point of care) - dry chemistry tests and their interpretation
12. POCT (Point of care) - dry chemistry tests and their interpretation
13. Interpretation of laboratory tests
14. Interpretation of laboratory tests

Seminars
Exam topics/questions
Written examination: different test questions will be given in every occasion

Participants
Dr, Liszt Ferenc (LIFEAA.K.JPTE), Dr. Kőszegi Tamás (KOTHAAE.PTE), Dr. Ludány Andrea (LUAHABE.PTE), Dr. Magyarłaki Tamás (MATMAAO.PTE), Dr. Rékási Zsuzsanna (REZSAAP.PTE), Teibert Adrienn Dr., Tökés-Füzesi Margit Dr.
**OAEGNU  CHILD NEUROLOGY**

**Course director:** DR. KATALIN HOLLÓDY, associate professor  
Department of Paediatrics

<table>
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<tr>
<th>2 credit • midterm grade • Elective module • spring semester • recommended semester: 8</th>
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<tr>
<td><strong>Number of hours/semester:</strong> 12 lectures + 12 practices + 0 seminars = total of 24 hours</td>
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<tr>
<td><strong>Headcount limitations (min-max.):</strong> min. 5 – max. 20</td>
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<tr>
<td><strong>Prerequisites:</strong> OAAANE completed + OAAEL2 completed</td>
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**Topic**

Diseases of the nervous system in infancy and childhood have a profound impact on the life of patients and their families and are probably the most disruptive of all paediatric ailments. Neurological diseases account for a significant proportion of the serious paediatric diseases, as between 15 and 20 per cent of hospitalized children have a neurological problem.

The aim of the course: to give a comprehensive description of the main neurological diseases of children to permit diagnostic orientation, prognosis and management.

**Conditions for acceptance of the semester**

Active participation.

The attendance of the lectures and practices is compulsory, it will be checked regularly.

The maximum permitted number of absences is 3, independently of the reason.

**Making up for missed classes**

not possible

**Reading material**


**Lectures**

1. The role of inspection in the child neurology  
   Dr. Hollódy Katalin
2. Special history taking in the child neurology  
   Dr. Hollódy Katalin
3. Normal development of the newborn and young infant  
   Dr. Hollódy Katalin
4. Convulsions in the childhood  
   Dr. Hollódy Katalin
5. Paroxysmal disorders other than epilepsy in childhood  
   Dr. Hollódy Katalin
6. Central nervous system injuries  
   Dr. Büki András
7. Neuromuscular disorders  
   Dr. Hollódy Katalin
8. Congenital anomalies of the nervous system. Hydrocephalus  
   Dr. Vető Ferenc
9. Movement disorders in the childhood  
   Dr. Hollódy Katalin
10. Tumors of the central nervous system  
    Dr. Kajtár Pál
11. Developmental delay in the childhood  
    Dr. Hollódy Katalin
12. Child with special needs  
    Dr. Hollódy Katalin

**Practices**

1. The role of inspection in the child neurology  
2. Neurological examination of the children
3. Neurological examination in and beyond the newborn period
4. Video-EEG demonstration of epileptic seizures
5. Video demonstration of paroxysmal disorders other than epilepsy in childhood
6. Central nervous system injuries
7. Children with neuromuscular disorders
8. Shunts in the practice
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<th>Topic</th>
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<tbody>
<tr>
<td>9</td>
<td>Video demonstration of movement disorders</td>
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<td>10</td>
<td>Children with CNS tumors</td>
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<td>11</td>
<td>Children with mental retardation and cerebral palsy</td>
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<td>12</td>
<td>Early intervention</td>
</tr>
</tbody>
</table>

**Seminars**

**Exam topics/questions**

**Participants**

Dr. Büki András (BUAMAO.PTE), Dr. Hollódy Katalin (HOKPAAP.PTE), Dr. Kajtár Pál (KAPMAAO.PTE), Dr. Vető Ferenc (VEFMAAO.PTE)
OAEKK2  CLINICAL PATHOPHYSIOLOGY 2
Course director:  DR. MIKLÓS SZÉKELY, professor emeritus
Department of Pathophysiology and Gerontology

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 8

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 30
Prerequisites: OAPKO2 parallel

Topic
The task is to apply the information from pathophysiology in clinical practice. The pathophysiological backgrounds of clinical disorders originating from the gastrointestinal system, energy balance, intermediary metabolism or the endocrine systems are to be analyzed.

Conditions for acceptance of the semester
Max. 3 absences.
Successful test (at least 40% result).

Making up for missed classes
Not needed, because of test

Reading material

Lectures
1  Gastro-esophageal reflux disease  
   Dr. Király Ágnes
2  Dysfunctions of the colon  
   Dr. Király Ágnes
3  Hepatotoxins  
   Dr. Pár Alajos Imre
4  Malnutrition, clinical nutrition  
   Dr. Garai János
5  Disorders of urate metabolism  
   Dr. Balaskó Márta
6  Disorders of body composition, obesity  
   Dr. Molnár Dénes
7  Lipid-disorders in the clinical practice  
   Dr. Bajnok László
8  Late complications of diabetes  
   Dr. Wittmann István
9  Fever in the clinical practice  
   Dr. Ternák Gábor
10 Fundaments of diabetes therapy  
   Dr. Wittmann István
11 Iodine-metabolism, thyroid function  
   Dr. Mezősi Emese
12 Diabetes insipidus, SIADH, natriuretic peptides  
   Dr. Mezősi Emese
13 Disorders of gonadal hormones  
   Dr. Garai János
14 Test-exam  
   Dr. Székely Miklós

Practices
Seminars
Exam topics/questions
Participants
OAENKD  NON-INVASIVE CARDIOLOGICAL DIAGNOSTICS AND THERAPY

Course director:  DR. ROBERT HALMOSI, assistant professor
1st Department of Internal Medicine

2 credit • midsemester grade • Elective module • spring semester • recommended semester: 8

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 3 – max. 150
Prerequisites: OAPBPR completed + OAPKO2 completed + OAPGT2 parallel

Topic
The main educational task of the subject: To approach the cardiac diseases, that are important in the everyday medical practice, from the viewpoint of the general medical and clinical practice. To introduce the most important diagnostic and therapeutic procedures.
Characteristics, diagnostic value of non-invasive cardiologic diagnostic procedures. Introduction into the practical skills needed to independently perform these tests. State of the art pharmacological and non-pharmacological therapy in the prevention and treatment of cardiovascular diseases.

Conditions for acceptance of the semester
Two written tests during the semester. Mid-semester-grade.
Two absences (4 hours) are tolerated during the semester at the seminars. More than two absences result in automatic exclusion.

Making up for missed classes

Reading material
First Department of Medicine lecture slides
Houghton AR, Gray D: Making Sense of the ECG - A hands-on guide
Camm A.J, et al.: ESC Textbook of Cardiovascular Medicine, 2006

Lectures

Practices

Seminars
1 Basics of ECG analysis
2 Basics of ECG analysis
3 Stress tests, Holter monitoring, Transtelephonic ECG, ABPM
4 Stress tests, Holter monitoring, Transtelephonic ECG, ABPM
5 Nuclear cardiology
6 Impedance cardiology, Arteriography, Ambulatory blood pressure monitoring
7 Echocardiography (TTE, TEE, stress echo, contrast echo, 3D echo)
8 Echocardiography (TTE, TEE, stress echo, contrast echo, 3D echo)
9 Cardiac CT and MRI
10 Cardiac CT and MRI
11 Principles of laboratory diagnostics in cardiology
12 Interim exam (ECG analysis)
13 Acute thromboembolic diseases, fibrinolytic and anticoagulant therapy
14 Acute thromboembolic diseases, fibrinolytic and anticoagulant therapy
15 Antiarrhythmic treatment
16 Antiarrhythmic treatment
17 Treatment of coronary artery disease and cardiovascular prevention
18 Treatment of coronary artery disease and cardiovascular prevention
19 Treatment of acute ischemic coronary syndromes
20 Treatment of acute ischemic coronary syndromes
21 Clinical aspects of heart failure
22 Clinical aspects of heart failure
23 Angiology
24 Angiology
25 Hypertension and antihypertensive therapy
26 Hypertension and antihypertensive therapy
27 Role of multicenter clinical studies in the cardiological diagnostics and therapy
28 Written test (MCQ)

Exam topics/questions

Participants
Dr. Czopf László (CZLMAAO.PTE), Dr. Habon Tamás (HATMAAO.PTE), Dr. Halmosi Róbert (HARFABO.PTE), Dr. Késmárky Gábor (KEGFACO.PTE), Dr. Nagy Lajos (NALGABO.PTE), Dr. Sárosi István (SAIMAAO.PTE), Dr. Szabados Eszter (SZEMAAO.PTE), Dr. Tóth Kálmán (TOKGAAO.PTE), Dr. Zámbó Katalin (BOZMAAO.PTE)
**OAEOIN Medical Informatics**

Course director: LÁSZLÓ ÓRI, bioengineer

Institute of Bioanalysis

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 8

Number of hours/semester: 7 lectures + 7 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 2 – max. 18

Prerequisites: OAAMET completed

**Topic**

It is written in the medical Informatic-literature that less than 7% of the knowledge of a physicians is Anatomy and further 7% is medical. The Aim of this wide spectrum of knowledge is not only to heal but to forego illnesses. The physician have to know the effects of society and should help the patient to recognize the rules of the nature and to find harmony. Mathematic helps to see the essence of things and can be applied on all fields of life. The importance of mathematics is in our age rediscovered, but new fashionable phrases are in usage. It was in the near past e.g. the cybernetics and to day the INFORMATICS. The new point in our age is, that one can measure the QUANTITY of the information. The decisions can be more precise and not so relative then earlier. In our course we want to get familiar in some fields with the power of informatics-mathematics. Not only theory, we discuss information-handling in health-care systems, electronic document-security, authenticity.

**Conditions for acceptance of the semester**

Max 4 lessons absent

Important knowledge refreshing test

**Making up for missed classes**

One consultation possible

**Reading material**

- Surján György, Rolf Engelbrecht, Peter McNair: Health Data in the Information Society (Proceedings of MIE2002, NJSZT kiadvány)
- Philippov: Taschenbuch Elektrotechnik: BandI.
- Eberhard Forth, Eberhard Schewitzer: BIONIK 1976 VEB Bibliographisches Institut Leipzig
- IEEE International Conference on neural networks 1993 San Francisco
- Literature available via Internet.

**Lectures**

1. About the concepts of cybernetics and informatics. The unit of Information. The concept of entropy.
   Óri László

2. The principle of Neumann. What is the program. Redundant information. Fault tolerant information-handling. About multivariable
   Óri László

3. The language as code, development of program languages, Semantics, syntax, context. Artificial and natural languages. Handling of medical Information, MEDICAL Code systems, BNO, etc.
   Óri László

4. Insight into the higher mathematics, Fourier-transform, frequency mixing and multiplication, sideband in radiotechnics and lasertechnics.
   Óri László

   Óri László

   Óri László

7. What is Fuzzy logic, neural network. Some words about automatic classification expert systems.
   Óri László
Practices
1. Fits to the lecture.
2. Fits to the lecture.
3. Fits to the lecture.
4. Fits to the lecture.
5. Fits to the lecture.
6. Fits to the lecture.
7. Fits to the lecture. A short test for refreshing of the most important items.

Seminars
Exam topics/questions
Lectures and discussion in the computerroom

Participants
Őri László (ORLMAAP.PTE)
OAEORE Medical Rehabilitation, Physical Therapy and Supplying with Assitive Devices in Medical Practice

Course director: Dr. Varjú Cecília, osztályvezető orvos
Department of Immunology and Rheumatology

1 credit • midterm grade • Elective module • spring semester • recommended semester: 8

Number of hours/semester: 7 lectures + 7 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 30

Prerequisites: OAKTRA parallel + OAKKIR parallel

Topic
This course focuses on the practical aspects of medical rehabilitation and aim to provide an introduction to various physical therapies and supplying patients with assistive devices.

Conditions for acceptance of the semester
Oral interviews
Making up for missed classes
As agreed with the course director.

Reading material

Lectures
1 Definition and description of disability and rehabilitation. Roles of the family doctors and other therapists and folks of the patients in course of rehabilitation.
   Dr. Cecília Varjú (at the Rheumatology and Immunology Clinic, Pécs, Akác u. 1.),
2 Rehabilitation of patients with osteoarthritis, spondylitis, ankylosing spondylitis and osteoporosis. Different types of the physical therapy. Home nursing aids.
   Dr. Cecília Varjú (at the Rheumatology and Immunology Clinic),
3 Cardiac rehabilitation. Cardiac rehabilitation programs after a heart attack or after surgery.
   Dr. Béla Radnai (at the 1st Dept. of Internal Medicine, Pécs, Rákóczi út 2.)
4 Pediatric Rehabilitation
   Dr. Mária Aszmann (at the Paediatrics Clinic, Pécs, József Attila u. 7.)
5 Neurologic rehabilitation. Rehabilitation of neurologic patients after stroke, brain or spinal injury. Rehabilitation of the patients with multiple sclerosis.
   Prof. Sámuel Komoly (at the Neurology Clinic, Pécs, Rét utca 2.)
   Dr. Cecília Varjú (at the Rheumatology and Immunology Clinic, Pécs, Akác u. 1.).
7 Rehabilitation of patients with systemic autoimmune diseases (SLE, rheumatoid arthritis, dermatomyositis, systemic sclerosis, systemic vasculitis)
   Dr. Cecília Varjú (at the Rheumatology and Immunology Clinic, Pécs, Akác u. 1.)
   Rehabilitation of patients with systemic autoimmune diseases (SLE, rheumatoid arthritis, dermatomyositis, systemic sclerosis, systemic vasculitis)
   Dr. Cecília Varjú (at the Rheumatology and Immunology Clinic, Pécs, Akác u. 1.)

Practices
1 Roles of the family doctors and other therapists and folks of the patients in course of rehabilitation.
   Dr. Cecília Varjú (at the Rheumatology and Immunology Clinic, Pécs, Akác u. 1.)
2 Rehabilitation of patients with osteoarthritis, spondylitis, ankylosing spondylitis and osteoporosis. Different types of the physical therapy. Home nursing aids.
   Dr. Cecília Varjú (at the Rheumatology and Immunology Clinic, Pécs, Akác u. 1.)
3 Cardiac rehabilitation programs after a heart attack or after surgery.
   Dr. Béla Radnai (at the 1st Dept. of Internal Medicine, Pécs, Rákóczi út 2.)
4 Pediatric Rehabilitation and Habilitation
   Dr. Mária Aszmann (at the Paediatrics Clinic, Pécs, József Attila u. 7.)
5 Rehabilitation of neurologic patients after stroke, brain or spinal injury. Rehabilitation of the patients with multiple sclerosis.
   Prof. Sámuel Komoly (at the Neurology Clinic, Pécs, Rét utca 2.)
   Dr. Cecília Varjú (at the Rheumatology and Immunology Clinic, Pécs, Akác u. 1.)
Seminars

Exam topics/questions

Participants

Dr. Aszmann Mária (ASMRAAO.PTE), Dr. Komoly Sámuel (KOSMABP.PTE), Dr. Radnai Béla (RABNAAP.PTE), Dr. Varjú Cecília (VACPAAP.PTE)
OAEPF  PROBLEM-BASED PHARMACOLOGY
Course director: DR. ZSUZSANNA HELYES, associate professor
Department of Pharmacology and Pharmacotherapy

2 credit • midssemester grade • Elective module • spring semester • recommended semester: 8
Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Headcount limitations (min-max.): min. 5 – max. 30
Prerequisites: OAKGT3 completed

Topic
The subject aims at presenting and discussing problematic cases from different areas of the clinical practice. The students can develop their skills to solve difficulties in clinical situations, learn practical aspects of pharmacotherapy, get familiar with the latest clinical guidelines, disease-drug and drug-drug interactions, indications and counter-indications, as well as side-effect profiles.

Conditions for acceptance of the semester
Written exam (multiple choice test and assay questions)
30% of the total number of classes
Making up for missed classes

Reading material

Lectures
Practices
Seminars
1 Problems of the pharmacotherapy of cardiovascular diseases-1
2 Problems of the pharmacotherapy of cardiovascular diseases-2
3 Pharmacotherapy of gastrointestinal diseases-1
4 Pharmacotherapy of gastrointestinal diseases-2
5 Problems of the pharmacotherapy of airway diseases-1
6 Problems of the pharmacotherapy of airway diseases-1
7 Problems affecting coagulation disorders and their treatment
8 Pharmacotherapy of haemathological diseases
9 Problems in the pharmacotherapy of critically ill patients
10 Pharmacological problems in anaesthesiology
11 Drug treatment during pregnancy
12 Special problems in the pharmacotherapy of children
13 Problems of the pharmacotherapy of neurological and psychiatric patients-1
14 Problems of the pharmacotherapy of neurological and psychiatric patients-2
15 Treatment of inflammatory diseases-1
16 Treatment of inflammatory diseases-2
17 Pharmacological problems in analgesic therapy-1
18 Pharmacological problems in analgesic therapy-2
19 Problems with antimicrobial therapy-1
20 Problems with antimicrobial therapy-2
21 Special pharmacological problems in oncology
22 Special pharmacological problems in metabolic diseases- diabetes
23 Special pharmacological problems in metabolic diseases: obesity, metabolic syndrome
24 Pharmacological problems in endocrine diseases

Exam topics/questions
Participants
Dr. Helyes Zsuzsanna (HEZFAAO.PTE), Dr. Pintér Erika (PIEMAAO.PTE), Dr. Pozsgai Gábor (POGFAAO.PTE)
OAEBKO  PATIENT-CENTERED MEDICINE

Course director:  DR. LAJOS NAGY, professor
                 Family Medicine Inst.

1 credit • midterm grade • elective module • autumn semester • recommended semester: 9

Number of hours/semester: 0 lectures + 6 practices + 8 seminars = total of 14 hours
Headcount limitations (min-max.):  min. 5 – max. 20
Prerequisites: OAPBPR completed + OAKCSA parallel

Topic
Introducing the model of the patient centered medicine and its clinical application. The goal of the subject is to help with the cognition and appreciation of the patients human point of view (value judgement) for the prospective doctors. It details the technics and methods that helps to understand and get to know their patients better as a human for effective treatment and cure.
The changes in the doctor-patient relationship makes the knowledge of patient centered model important for those who are preparing for medical profession.

Conditions for acceptance of the semester
Missing more than 20 % of the program means that the course will be not accepted.

Making up for missed classes
Participating in the next course.

Reading material
Rita Charon: Narrative Medicine,

Lectures
Practices
1 Introduction to the patient centered medicine
2 Human dimension of the physician’s training
3 What is Narrative Medicine and why to practice it
4 Good collaboration in health care
5 Improve empathy
6 Communication in critical situations

Seminars
1 Narrative skills
2 Improve empathy
3 Communication in critical situations
4 Narrative skills
5 Introduction to the patient centered medicine
6 Human dimension of the physician’s training
7 What is Narrative Medicine and why to practice it
8 Good collaboration in health care

Exam topics/questions
no

Participants
Dr. Csikós Ágnes (CSAAAL.B.JPTE), Dr. Heim Szilvia (HESPAAP.PTE)
CURRENT ISSUES AND NEW SURGICAL TECHNIQUES

Course director: DR. ÖRS PÉTER HORVÁTH, professor
Surgery Clinic

2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 9

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 –
Prerequisites: OAPPA2 completed + OAPSPR completed + OAKSE1 completed

Topic

The course gives information on recent achievements in surgical technology, techniques and treatment modalities for those who are interested not only in basic medical education and/or are weighing the idea of becoming a surgeon in the future.

Conditions for acceptance of the semester

Obligatory attendance to all lectures. In case of medically certified absence and replaced attendance the credit value of the course can be acknowledged.

Making up for missed classes

Reading material

Lectures

1 Interventions on the large bowel
   Dr. Kalmár Katalin
2 Interventions on the large bowel
   Dr. Kalmár Katalin
3 Tissue and organ transplantation
   Dr. Kalmár-Nagy Károly
4 Tissue and organ transplantation
   Dr. Kalmár-Nagy Károly
5 Actualities in breast surgery
   Dr. Tizedes György
6 Actualities in breast surgery
   Dr. Tizedes György
7 The natural history and treatment of GIST tumors
   Dr. Kalmár Katalin
8 The natural history and treatment of GIST tumors
   Dr. Kalmár Katalin
9 Curiosities in plastic surgery
   Dr. Tizedes György
10 Curiosities in plastic surgery
    Dr. Tizedes György
11 New ways in vascular surgery
    Dr. Wéber György
12 New ways in vascular surgery
    Dr. Wéber György
13 Possibilities in laparoscopic surgery
    Dr. Vereczkei András
14 Possibilities in laparoscopic surgery
    Dr. Vereczkei András
15 Actualities in liver surgery
    Dr. Kalmár-Nagy Károly
16 Actualities in liver surgery
    Dr. Kalmár-Nagy Károly
17 Modern palliation of irresectable pancreatic tumors
    Dr. Kelemen Dezső
18 Modern palliation of irresectable pancreatic tumors
    Dr. Kelemen Dezső
19 Actualities in thoracic surgery
    Dr. Molnár F. Tamás
20 Actualities in thoracic surgery
    Dr. Molnár F. Tamás
21 Imaging diagnostic in thoracic surgery
Dr. Molnár F. Tamás

22 Imaging diagnostic in thoracic surgery
Dr. Molnár F. Tamás

23 Novelties in esophageal surgery
Dr. Papp András

24 Novelties in esophageal surgery
Dr. Papp András

25 New achievements in the treatment of GERD
Dr. Varga Gábor

26 New achievements in the treatment of GERD
Dr. Varga Gábor

27 Pouching techniques following total gastrectomy
Dr. Kalmár Katalin

28 Pouching techniques following total gastrectomy
Dr. Kalmár Katalin

Practices
Seminars
Exam topics/questions
Participants
Course director: **DR. LÁSZLÓ HORVÁTH**, professor emeritus
Department of Radiology

**OAEDAG REGIONAL INTERVENTIONAL TUMOUR THERAPY**

2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 9

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 20

Prerequisites: -

**Topic**

The goal of the program is to prepare students to the wide selection of most recent opportunities used in interventional radiological (minimally invasive) image guided techniques of inhibiting tumor growth either as a sole treatment or, as most often, in a combination therapy. Diseases, staging, selection of patients, the used techniques, instruments and medicaments, follow-up and patient care are discussed.

**Conditions for acceptance of the semester**

6 missed hours are the absolute maximum! Written test(s) during the semester. Final oral exam.

**Making up for missed classes**

Within these 6 hours an oral report of subject dealt with in the missed lessons, only. Above the 6 hours missed there is no possibility for final exam!

**Reading material**

Provided at the individual lessons.

**Lectures**

**Practices**

1. Technical requirements in interventional oncoradiology
2. Catheterotechnics
3. Oncopharmacology
4. Embolizations
5. Combination therapy
6. Combination therapy
7. X-ray, US, CT, Mr, SPECT, PET
8. X-ray, US, CT, Mr, SPECT, PET
9. Thermotherapy and its modalities
10. RF ablation
11. Staging as a major indicator for interventional radiology
12. Staging as a major indicator for interventional radiology
13. The follow-up of patients
14. The follow-up of patients
15. Evaluation of effectivity
16. Evaluation of effectivity
17. The tumormarkers
18. The tumormarkers
19. The follow-up of patients
20. Informed consent
21. Lung cancer and melanoma malignum
22. Intestinal and bone tumor
23. Renal and suprarenal tumor
24. Bladder cancer
25. Prostate and ovarial cancer
26. Uterine fibroid, uterine and cervical cancer
27. Liver metastasis, cholangiocarcinoma and HCC
28. Esophageal, stomach and pancreatic cancer

**Seminars**

Exam topics/questions
Uploaded during the semester.

**Participants**

Dr. Horváth László (HOLGAO.PTE)
OAEDGH DIAGNOSTIC METHODS IN GASTROENTEROLOGY AND HEPATOLOGY

Course director: DR. IMRE SZABÓ, assistant professor
1st Department of Internal Medicine

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 9

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 40
Prerequisites: OAPBPR completed + OAPKO2 completed + OAPGT2 parallel

Topic
To review diagnostic tools in Gastroenterology and Hepatology, including demonstration of procedures and clinical interpretation of data. Excellent option to collect more clinical details to main topics of Gastroenterology lectures and bed-side practices.

Conditions for acceptance of the semester
Written test exam.

Making up for missed classes
No organized extra lectures for missed ones. Individual options might be discussed with the study coordinator on a case-by-case basis. Maximum number of absence cannot exceed 3 lectures)

Reading material

Lectures
1. Upper gastrointestinal endoscopy.
   Dr. Szabó Imre
2. Endosonography
   Dr. Pakodi Ferenc
3. PH-metry, gastrointestinal manometry, impedance measurement.
   Dr. Király Ágnes
4. Interventional endoscopy.
   Dr. Szabó Imre
5. Pancreato-biliary endoscopy.
   Dr. Vincze Áron
   Dr. Vincze Áron
7. Physical examination of patients with gastrointestinal disorders.
   Dr. Mózsik Gyula
8. Nuclear studies of the digestive system.
   Dr. Zámbó Katalin
9. Interventional radiology in digestive system diseases
   Dr. Battyáni István
10. Imaging studies in the gastrointestinal system
    Dr. Battyáni István
11. Laboratory studies in liver diseases.
    Dr. Pár Gabriella
12. Functional studies of digestion and absorption.
    Dr. Vincze Áron
    Dr. Czimmer József
    Dr. Király Ágnes

Practices

Seminars

Exam topics/questions
(Univ Pecs, Medical School / Departments / First Dept. Internal Medicine / Educational Materials)

Participants
OAENRP  NEURORADIOLOGICAL PRACTICE
Course director: DR. BARI SÉTER, egyetemi docens
Department of Neurosurgery

2 credit • midterm grade • Elective module • both semesters semester • recommended semester: 9
Number of hours/semester: 12 lectures + 0 practices + 12 seminars = total of 24 hours
Headcount limitations (min-max.): min. 5 – max. 30
Prerequisites: OAKKRA completed + OAKNE1 parallel

Topic
The aim of the course Neuroradiological Practice is to provide the medical students a detailed theoretical overview and a practical approach to
- the advantages, limitations of the instruments used in neuroradiology (conventional radiology, ultrasound, DSA, CT, MRI) and the possibilities provided by them,
- the examination algorithms,
- the practical imaging protocols for those instruments in different neuropsychiatric disorders,
- the characteristic imaging symptoms of the essential disease groups,
- the differential diagnostic possibilities,
- while emphasizing this knowledge in the acute states of the different clinical specialties.
The final aim is to educate general practitioners and those who are going to begin residency in radiology, neuropsychiatry and neurosurgery to
- know which are the imaging possibilities,
- properly choose from them,
- know the essential constituents of a properly performed neuroradiological examination,
- know what are the possible results of the examinations,
thus not missing the necessary examinations, but not abusing the imaging capacity.

Conditions for acceptance of the semester
Checking of knowledge: 1 mid-semester test exam on the topic discussed and one end-semester test exam on the whole material.

Making up for missed classes

Reading material
Practical neuroradiology (lecture notes):
www.neurorad.cns.c.hu
Recommended readings:

Lectures
1. What does the neurologist and neurosurgeon expect from the neuroradiological examinations? 
   Tamás DÖCZI Prof., Samuel KOMOLY Prof.
2. Neuroradiological methods and instrumentation. Examination algorithms and protocols
   Péter BARI SÉTER Dr.
3. The most important congenital malformations of the skull, brain and spine.
   Péter BARI SÉTER Dr.
   Ferenc KOVÁR Dr.
5. Interventional neuroradiology. -
   Ferenc KOVÁR Dr.
   Péter BARI SÉTER Dr.
7. Tumours of the skull and brain.
   Péter BARI SÉTER Dr.
8. Tumours of the spine and spinal cord. -
   Marianna IMRE Dr.
9 Infectious diseases of the central nervous system.  
   Marianna IMRE Dr.
10 Cerebral and spinal trauma.  
   Hedvig KOMÁROMY Dr.
11 Imaging of the orbits, sella and inner ear.  
   Hedvig KOMÁROMY Dr.
12 Imaging of the degenerative spinal diseases. Spondyloarthopathies  
   Péter BARSÍ Dr.

Practices

Seminars
1 Neuroradiological methods and instrumentation. Examination algorithms and protocols. Interactive demonstration of the topics.
2 The most important congenital malformations of the skull, brain and spine. Interactive demonstration of the topics.
4 Interventional neuroradiology. Interactive demonstration of the topics. Ferenc KÖVÉR Dr.
5 Neurodegenerative and inflammatory diseases. Epilepsy. Abnormalities of the CSF circulation. Interactive demonstration of the topics.
6 Tumours of the skull and brain. Mid-term test. examination.
7 Tumours of the spine and spinal cord. Interactive demonstration of the topics. Marianna IMRE Dr.
8 Infectious diseases of the central nervous system. Interactive demonstration of the topics. Marianna IMRE Dr.
9 Cerebral and spinal trauma. Interactive demonstration of the topics. Hedvig KOMÁROMY Dr.
10 Imaging of the orbits, sella and inner ear. Interactive demonstration of the topics. Hedvig KOMÁROMY Dr.
11 Imaging of the degenerative spinal diseases. Spondyloarthopathies. Interactive demonstration of the topics.
12 Repetition, discussion of problematic topics. Closing test examination.

Exam topics/questions
www.neurorad.cnsc.hu

Participants
Dr. Barsi Péter (BAPSABP.PTE), Dr. Dóczi Tamás (DOTHAO.PTE), Dr. Komoly Sámuel (KOSMABP.PTE)
Endoscopic Surgery of the Nasal Cavities and Paranasal Sinuses

Course director: Dr. Imre Gerlinger, professor
Department of Oto-rhino-laryngology

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 9

Number of hours/semester: 10 lectures + 2 practices + 2 seminars = total of 14 hours
Headcount limitations (min-max.): min. 2 – max. 30
Prerequisites: OAKFUL completed

Topic
The aim this course is to show the technical aspects of functional endoscopic sinus surgery, the anatomical and pathophysiological changes of sino-nasal diseases with cadaver practise and video demonstrations.

Conditions for acceptance of the semester
Missing of one lecture is accepted
Making up for missed classes
No possibility

Reading material
Simmons -Jones: Endoscopic sinus surgery (Thieme kiadó)

Lectures
1 Pathophysiology and classification of chronic rhinosinusitis
   Dr. Gerlinger Imre
2 Anatomy and development of the sinuses
   Dr. Gerlinger Imre
3 Anamnestic data, patient selection, medical treatment, indication of endoscopic sinus surgery. Who is not proper candidate for surgery?
   Dr. Gerlinger Imre
4 Role of CT in diagnosis, preoperative checklist, CT/MR differential issues
   Dr. Gerlinger Imre
5 Role of nasal endoscopy in out-patient practice (presentation of nasal endoscopy)
   Dr. Gerlinger Imre
6 Step-by-step guidance of endoscopic sinus surgery
   Dr. Gerlinger Imre
7 Anaesthesia, instrumentation, computer guided surgery, postoperative management
   Dr. Gerlinger Imre
8 Diagnosis and treatment of facial pain. mild and serious complications of endoscopic sinus surgery
   Dr. Gerlinger Imre
9 Further endoscopic operations in rhinosurgery: DCR, ligation of the sphenopalatine artery, frontal sinus surgery, orbital decompression, decompression of the optic nerve, invert papilloma, choanal atresia, scull base surgery
   Dr. Gerlinger Imre
10 Further endoscopic operations in rhinosurgery: DCR, ligation of the sphenopalatine artery, frontal sinus surgery, orbital decompression, decompression of the optic nerve, invert papilloma, choanal atresia, scull base surgery
    Dr. Gerlinger Imre

Practices
11 Successful surgery, persistens symptoms. Which are the further therapeutic possibilities?
12 Management of bleeding in endoscopic sinus surgery

Seminars
13 Videodemonstration of endoscopic procedures
14 Application of lasers in rhinosurgery

Exam topics/questions
www.ent.pote.hu

Participants
Dr. Gerlinger Imre (GEIAAAK.PTE)
OAEORS  SPECIALITIES IN ORTHOPAEDICS
Course director: DR. TAMÁS ILLÉS, professor
Department of Orthopaedics

2 credit • midsemester grade • Elective module • autumn semester • recommended semester: 9
Number of hours/semester: 14 lectures + 14 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 100
Prerequisites: OAPPA2 completed + OAKORT completed + OAKSE1 completed

Topic
The aim is to provide a comprehensive knowledge of different musculoskeletal disorders with special emphasis on their impact on quality of life and recent developments in their treatments.

Conditions for acceptance of the semester
If not more than 1/3 of the obligatory clinical seminars are missed.
Successfully passed exam.

Making up for missed classes
Absence from practices can be redeemed in case the time of the practice does not interfere with other practices and lectures.
Redeem can be completed under the circumstances of regular practices. Absences from up to two practices can be redeemed with other groups, but require confirmation.

Reading material
Mark D Miller: Review of Orthopedics, Saunders, 2004

Lectures
1 Limb equalisation, alternatives in the treatment of cerebral palsy
   Dr. Illés Tamás
2 Orthopaedic conditions modifying the quality of life
   Dr. Illés Tamás
3 Conservative treatment in orthopaedic conditions. Errors, malpractice
   Dr. Illés Tamás
4 Tissue transplantation in orthopedics
   Dr. Illés Tamás
5 Sports surgery, arthroscopy, treatment options
   Dr. Illés Tamás
6 Cartilage biology, cartilage repair options
   Dr. Illés Tamás
7 Inflammatory orthopedic conditions; frontiers in orthopedics
   Dr. Illés Tamás

Practices
Physical examination, practice

Seminars

Exam topics/questions

Participants
Dr. Bárdos Tamás (BATFAAO.PTE), Dr. Horváth Gábor (HOGMAAO.PTE), Dr. Illés Tamás (ILTMAAO.PTE), Dr. Than Péter (THPHAAE.PTE), Dr. Tunyogi Csapó Miklós, Dr. Vermes Csaba
PALLIATIVE CARE, HOSPICE

Course director: DR. LAJOS NAGY, professor
Family Medicine Inst.

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 9

Number of hours/semester: 8 lectures + 6 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 20
Prerequisites: OAKCSA parallel + OAKONK completed

Topic
The holistic and multidisciplinary care of patients with terminal illness, involving the patient’s relatives as well. This program gives the details of the possible ways of pain control and easing other symptoms, and discusses how to improve the quality of the patient’s life. We provide information about the Hospice movement in Hungary and in the foreign countries. Palliative care and the Hospice movement get more and more emphasis in the practice of the Health Care. Knowing these skills are essential for future doctors.

Conditions for acceptance of the semester
Missing more than 20 % of the program means that the course will be not accepted.

Making up for missed classes
Participating in the next course.

Reading material
Oxford Textbook off Palliative Medicine, Oxford 2004

Lectures
1 The idea of the palliative care, its levels and organization
   Dr. Csikós Ágnes
2 The palliative Team, the maintenance of the quality of life
   Dr. Csikós Ágnes
3 Symptom management
   Dr. Csikós Ágnes
4 Hospice based patient care
   Dr. Trompos Katalin
5 The Hospice Team
   Lukács Miklós, Szekeresné Izsák Margit
6 Palliative Children care
   Dr. Ottóffy Gábor
7 The palliative care and oncology
   Dr. Bércesi Éva
8 Psychological support at the end of life
   Dr. Dormán Hajnalka

Practices
1 Communication skills in Hospice
2 Moral and ethical dilemmas at the end of life
3 Attitudes towards death and dying
4 Attitudes towards death and dying
5 Communication skills in Hospice
6 Moral and ethical dilemmas at the end of life

Seminars

Exam topics/questions

Participants
Dr. Csikós Ágnes (CSAAAIB.JPTE), Dr. Dormán Hajnalka (DOHOAAP.PTE)
Cardiac Surgery

Course director: Dr. Sándor Szabados, associate professor
Heart Institute

1 credit • mideastem grade • Elective module • both semesters semester • recommended semester: 9

Number of hours/semester: 7 lectures + 6 practices + 0 seminars = total of 13 hours
Headcount limitations (min-max.): min. 3 – max. 30
Prerequisites: OAPPA1 completed + OAPPA2 completed + OAPKO2 completed

Topic
The aim of this course is to delineate the most common surgical cardiac diseases. We lay emphasis on coronary heart disease and coronary artery bypass surgery. The surgical treatment of aortic dissection, cardiac failure, atrial fibrillation, cardiac tumors, pericardial and valvular diseases are also subjects of the lectures and the seminars. We also delineate the special technique of cardiopulmonary bypass, myocardial protection and hypothermia.

Conditions for acceptance of the semester
active participation – maximum 3 absences

Making up for missed classes

Reading material
2. Kirklin-Barratt-Boyes – Cardiac Surgery – Morphology, diagnostic criteria, natural history, techniques, results and indications, John Wiley & Sons, USA,
5. Szívsebészet jegyzet, Pécs 2009

Lectures
1. Brief history of cardiac surgery. Basic considerations
   Dr. Szabados Sándor
2. Extracorporeal circulation, hypothermia, myocardial protection
   Dr. Szabados Sándor
3. Congenital cardiac surgery
   Dr. Szabados Sándor
4. Surgery for ischemic heart disease
   Dr. Szabados Sándor
5. Surgical therapy for valvular heart disease
   Dr. Szabados Sándor
   Dr. Szabados Sándor
7. Pericardial diseases. Cardiac tumors. Aorta atherosclerosis, aneurysm, dissection. Traumatic injuries of the heart and great arteries
   Dr. Szabados Sándor

Practices
1. Introduction, personal and technical conditions of cardiac surgery
2. Introduction, personal and technical conditions of cardiac surgery
3. Examination, preparation and postoperative follow-up of the patients with coronary and valvular heart disease
4. Examination, preparation and postoperative follow-up of the patients with coronary and valvular heart disease
5. Operative technique, instruments, suturing on phantom
6. Operative technique, instruments, suturing on phantom

Seminars
Exam topics/questions
Basic considerations
Extracorporeal circulation, hypothermia, myocardial protection
Congenital cardiac surgery
Surgery for ischemic heart disease
Surgical therapy for valvular heart disease
Surgery for heart failure. Surgery for atrial fibrillation
Pericardial diseases.
Cardiac tumors.
Aorta atherosclerosis, aneurysm, dissection.
Traumatic injuries of the heart and great arteries

Participants
Dr. Göbölös László, Dr. Hejjel László (HEJSAAO.PTE), Dr. Imre Jenő (IMJSAAP.PTE), Dr. Pintér Örs (PIOFAAO.PTE), Dr. Szabados Sándor (SZSMAAO.PTE), Dr. Tóth Zsolt (TOZFAAO.PTE), ifj. Dr. Lénárd László (LELRABO.PTE)
Course director: Dr. Tamás Tényi, associate professor
Department of Psychiatry and Psychotherapy

OAESUP EMERGENCY PSYCHIATRY

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 9

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 130
Prerequisites: OAKGT3 completed

Topic
The subject deals with emergency psychiatric issues in clinical practice and consultative psychiatry. Aggressive behavior associated with psychotic and organic cases are explored, as well as the clinical challenge of the dealing with the suicidal patient.

Conditions for acceptance of the semester
According to the Code of Studies and Examinations

Making up for missed classes
According to the Code of Studies and Examinations

Reading material
Kaplan Sadock: Synopsis of psychiatry

Lectures
1. Summary
   Dr. Tényi Tamás
2. Biological therapies
   Dr. Tényi Tamás
3. Symptoms and emergency
   Dr. Tényi Tamás
4. Psychotherapies
   Dr. Tényi Tamás
5. Forensic issues
   Dr. Tényi Tamás
6. Internal and neurological disorders and emergency
   Dr. Tényi Tamás
7. Addiction and emergency
   Dr. Fekete Sándor
8. Suicide II.
   Dr. Fekete Sándor
9. Emergency psychiatry
   Dr. Tényi Tamás
10. Pregnancy and psychiatric emergency
    Dr. Tényi Tamás
11. Consultation
12. Suicide I.
    Dr. Fekete Sándor
13. Aggressive patient
    Dr. Tényi Tamás
14. Organic psychiatry and emergency

Practices

Seminars

Exam topics/questions

Participants
OAETRO  TROPICAL DISEASES

Course director: DR. GÁBOR TERNÁK, clinical director and head of department
Department of Infectology, Catastrophe Medicine and Oxiology

1 credit • midsemester grade • Elective module • autumn semester • recommended semester: 9

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 30

Prerequisites: OAPMI2 completed + OAKGAS completed

Topic
With the increasing number of international travels, the possibility of contracting tropical diseases increases also. Doctors must develop appropriate knowledge of the clinical signs and symptoms of the most common infections in the topics, like malaria, dengue fever, etc. They must be aware of the possible prevention and prophylaxis of tropical diseases, like malaria, yellow fever, etc. Tourists coming back from tropical excursions might complain of fever, skin rashes and other symptoms which can be a challenge to find the exact reasons of the clinical signs and symptoms.

Conditions for acceptance of the semester
Two absentees are permitted

Making up for missed classes
Personal discussion with the head of the dept.

Reading material
Manson’s Tropical Diseases
Mandel’s Principles and practices of Infectious Diseases

Lectures
1  Travel-related infections, malaria
   Dr. Ternák Gábor
2  Yellow fever, dengue and other haemorrhagic fevers
   Dr. Ternák Gábor
3  Arbovirus infections, rabies
   Dr. Ternák Gábor
4  Tropical bacterial infections (Cholera, Plague, Baronellosis)
   Dr. Ternák Gábor
5  Leprosy and other mycobacterial infections
   Dr. Ternák Gábor
6  Tropical rickettsiosis
   Dr. Ternák Gábor
7  Treponematosis
   Dr. Ternák Gábor
8  Trypanosomiasis
   Dr. Ternák Gábor
9  Leishmaniasis, Schistosomiasis
   Dr. Ternák Gábor
10  Filariasis
    Dr. Ternák Gábor
11  Trematodal infections (flukes)
    Dr. Ternák Gábor
12  Cestodes
    Dr. Ternák Gábor
13  Non-infectious diseases
    Dr. Ternák Gábor
14  Malnutrition
    Dr. Ternák Gábor

Practices
Seminars
Exam topics/questions

Main topics:
1. Travel-related diseases, Malaria
2. Yellow fever, dengue fever, other haemorrhagic fevers
3. Arbovirus infections, rabies
4. Tropical bacterial infections (Cholera, Plague, Bartonellosis, others)
5. Leprosy and other mycobacterial infections
6. Tropical rickettsioses
7. Treponematosis
8. Trypanosomiasis
9. Leishmaniasis, Schistosomiasis
10. Filariasis
11. Flukes (Trematodal infections)
12. Cestodes
13. Non-infectious diseases in the tropics
14. Protein-energy malnutrition

Participants
OAETRS  SPECIALITIES IN TRAUMATOLOGY

Course director:  DR. LÁSZLÓ VÁMHIDY, associate professor
Department of Traumatology and Hand Surgery

1 credit • midterm grade • Elective module • autumn semester • recommended semester: 9

Number of hours/semester:  8 lectures + 4 practices + 0 seminars = total of 12 hours
Headcount limitations (min-max.):  min. 5 – max. 10
Prerequisites:  OAANE completed + OAKTRA completed

Topic
The course deals with special traumatological problems like the periprosthetic fractures and pelvic fractures. The up to date treatment possibilities are presented as well as the possible pitfalls.

Conditions for acceptance of the semester
Active participation test exam.

Making up for missed classes
Extra OR attendance.

Reading material
www.aofoundation.org,
www.zimmer.com

Lectures
1  Periprostetic fractures around the hip
   Dr. Vámhidy László
2  Periprostetic fractures around the hip
   Dr. Vámhidy László
3  Periprosthetic fractures in the knee
   Dr. Vámhidy László
4  Use of revision knee prosthesis in posttraumatic knee problems
   Dr. Vámhidy László
5  Acetabular fractures
   Dr. Naumov István
6  Treatment of comminuted distal radius fracture with fixed angled plates
   Dr. Naumov István
7  Biological osteosynthesis
   Dr. Vámhidy László

Practices
1  Genocephalic nailing
2  Posterior screw fixation of the pelvic ring
3  LCP minimal invasive plating
4  VCP plate

Seminars
Exam topics/questions

Participants
Dr. Naumov István (NAIPAAP.PTE), Dr. Vámhidy László (VALGAAO.PTE)
OAECSS  PRINCIPLES OF FAMILY MEDICINE
Course director: DR. LAJOS NAGY, professor
Family Medicine Inst.

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 10
Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 20
Prerequisites: OAPBPR completed + OARBEL completed

Topic
Introduction of specialties of family medicine work using constructive case studies, films and plays with the assistance of invited experts.

Conditions for acceptance of the semester
max. 20% absence

Making up for missed classes
next year

Reading material

Lectures

Practices

Seminars
1 Physical and mental health status of family physician - prevention of “Burn-out syndrome”
2 The uncurable and dying patient: “Death of Ivan Iljits” - play analysis
3 Role and status of complemeneter medicine
4 Empathy and sensitivity of family physician - film analysis
5 Expertise and social activity of family physician
6 Communicational problems in critical situations
7 Multicultural context of doctor-patient interview
8 Multicultural context of doctor-patient interview
9 Communicational problems in critical situations
10 Expertise and social activity of family physician
11 Empathy and sensitivity of family physician - film analysis
12 Role and status of complemeneter medicine
13 The uncurable and dying patient: “Death of Ivan Iljits” - play analysis
14 Physical and mental health status of family physician - prevention of “Burn-out syndrome”

Exam topics/questions

Participants
Dr. Heim Szilvia (HESPAAP.PTE)
**OAEGYS  PAEDIATRIC SURGERY**

**Course director:** DR. ATTILA VÁSTYÁN, assistant professor

Department of Paediatrics

<table>
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<tr>
<th>2 credit • midsemeister grade • Elective module • spring semester • recommended semester: 10</th>
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**Number of hours/semester:**

| 0 lectures + 0 practices + 28 seminars = total of 28 hours |

**Headcount limitations (min-max.):**

| min. 5 – max. 15 |

**Prerequisites:**

| OAKSE2 completed + OAKGY2 parallel |

**Topic**

Introducing the most common and important paediatric surgical conditions in newborns and children. The diagnosis, surgical and non-surgical treatment and outcomes are discussed. Urological, plastic surgical and traumatological topics will be also included.

**Conditions for acceptance of the semester**

Oral exam

**Making up for missed classes**

In justified cases there will be possibility to attend an on call period for substitution.

**Reading material**


**Lectures**

**Practices**

**Seminars**

1. Neonatal surgery I.
2. Oesophageal atresia Abdominal wall defects – gastroschisis / omphalocele Congenital diaphragmatic hernia / relaxation
3. Neonatal surgery II.
4. Duodenal and small bowel obstruction, Meconium ileus, Necrotising enterocolitis, Anorectal malformation
5. General Paediatric Surgery I.
6. Pyloric stenosis Gastrooesophageal reflux Achalasia Median and lateral neck cysts (brachial arch/cleft remnants)
7. General Paediatric Surgery II.
8. Hirschsprung disease Constipation Large bowel polyps Rectal prolapse Anal abscess, fissures, fistulas
9. General Paediatric Surgery III.
10. Inguinal hernia Incarcerated hernia Hydrocele Umbilical hernia Undescended testis Torsion of the testis and ovaries
11. Emergency abdominal surgery in children
12. Appendicitis Intussusception Meckel’s diverticulum Bowel obstruction
13. Benign Tumours in Childhood
14. Dermoid cysts Haemangiomas Lymphangioma Pigmented Nevi Baker’s cyst, ganglions Trigger thumb
15. Paediatric Traumatology/Orthopaedics
16. Blunt abdominal injuries Fractures in childhood Child abuse
17. Paediatric Urology I.
18. Ureterovesical junction obstruction Ureretopelvic junction obstruction Posterior urethral valve
19. Paediatric Urology II.
20. Duplex kidney/ureter (ureterocele, ectopic ureter) Vesicoureteral reflux Cystic kidney diseases
21. Paediatric Urology III.
22. Phimosis, paraphimosis Hypospadias Buried penis Varicocele
23. Miscellaneous: Plastic- and Neurosurgery
24. Cleft lip and palate Myelomeningocele
25. Replacing of missed lectures, consultation
26. Replacing of missed lectures, consultation
27. Oral Exam
28. Oral Exam
Exam topics/questions

Oesophageal atresia
Abdominal wall defects, gastroschisis / omphalocele
Congenital diaphragmatic hernia / relaxation
Duodenal and small bowel obstructions
Meconium ileus
Necrotising enterocolitis
Anorectal malformation
Pyloric stenosis
Gastrooesophageal reflux
Achalasia
Median and lateral neck cysts (brachial arch/cleft remnants)
Hirschsprung disease
Constipation
Large bowel polyps
Rectal prolapse
Anal abscess, fissures, fistulas
Inguinal hernia
Incarcerated hernia
Hydrocele
Umbilical hernia
Undescended testis
Torsion of the testis and ovaries
Appendicitis
Intussusception
Meckel’s diverticulum
Bowel obstruction
Dermoid cysts
Haemangiomas
Lymphangioma
Pigmented Nevi
Baker’s cyst, ganglions
Trigger thumb
Blunt abdominal injuries
Fractures in childhood
Child abuse
Ureterovesical junction obstruction
Ureteropelvic junction obstruction
Posterior urethral valve
Duplex kidney/ureter (ureterocele, ectopic ureter)
Vesicoureteral reflux
Cystic kidney diseases
Phimosis, paraphimosis
Hypospadias
Buried penis
Varicocele
Cleft lip and palate
Mylomeningocele

Participants
Dr. Farkas András (FAAMAAO.PTE), Dr. Juhász Zsolt (JUZMAAO.PTE), Dr. Oberritter Zsolt (OBZMAAO.PTE), Dr. Pintér András (PIAMAAO.PTE), Dr. Vajda Péter (VAPFAAO.PTE), Dr. Vástyán Attila (VAAMAAO.PTE)
**OAEIDS NEUROSURGERY**

**Course director:** DR. TAMÁS DÓCZI, professor
Department of Neurosurgery

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 10

**Number of hours/semester:**
7 lectures + 7 practices + 0 seminars = total of 14 hours

**Headcount limitations (min-max.):** min. 4 –

**Prerequisites:**
OAAAA1 completed + OAAAA2 completed + OAKNE1 completed

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**Topic**

Neurosurgery is a surgical specialty for the treatment of diseases and disorders of the brain, spinal cord, and peripheral and sympathetic nervous system.

Most students think of neurosurgery as brain surgery; but it is much more! It is the medical specialty concerned with the diagnosis and treatment of patients with injury to, or diseases /disorders of the brain, spinal cord and spinal column, and peripheral nerves within all parts of the body. The specialty of neurosurgical care includes both adult and pediatric patients. Dependent upon the nature of the injury or disease/disorder a neurological surgeon may provide surgical and/or non-surgical care. Thus, this field of medicine can be defined as surgical neurology, as well.

Main fields of surgical neurology:
- neurotraumatology; neurooncology; vascular neurosurgery (cerebrovascular diseases) dealing with subarachnoid haemorrhage, aneurysms, or another vascular malformations; intracerebral haemorrhage and occlusive cerebro-vascular disease.
- Infectious diseases of the skull, brain and spine: abscesses, infections, postoperative inflammations.
- Developmental disorders such as hydrocephalus, spinal dysraphism, etc.
- Functional neurosurgery treating intractable pain, epilepsy and movement disorders

**Conditions for acceptance of the semester**
Attendance of 90 % of lectures/practices

**Making up for missed classes**
Individual replacement is possible.

**Reading material**
http://www.cnsc.hu

**Lectures**

1. Symptoms and signs of raised intracranial pressure
   Dr. Dóczi Tamás
2. Brain tumors
   Dr. Dóczi Tamás
3. Spinal tumours
   Dr. Dóczi Tamás
4. Cranio-cerebral injuries
   Dr. Dóczi Tamás
5. Spinal injuries
   Dr. Dóczi Tamás
6. Cerebrovascular diseases
   Dr. Dóczi Tamás
7. Functional neurosurgery
   Dr. Dóczi Tamás

**Practices**

1. Case presentation and analysis
2. Case presentation and analysis
3. Case presentation and analysis
4. Case presentation and analysis
5. Case presentation and analysis
6. Case presentation and analysis
7. Case presentation and analysis

**Seminars**

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Exam topics/questions
1. neurotraumatology;
2. neurooncology;
3. vascular neurosurgery: subarachnoid haemorrhage, aneurysms, vascular malformations;
4. intracerebral haemorrhage;
5. occlusive cerebro-vascular diseases;
6. infectious diseases of the skull, brain and spine: abscesses, infections, inflammations;
7. spinal neurosurgery: degenerative diseases of the spinal column, spinal canal stenosis;
8. dissections of the cranio-cervical junction;
9. developmental disorders: hydrocephalus, spinal dysraphism, etc.;
10. functional neurosurgery: intractable pain,
11. epilepsy;
12. movement disorders

Participants
Dr. Balás István (BAIMAAO.PTE), Dr. Büki András (BUAAMAO.PTE), Dr. Dóczi Tamás (DOTHAAO.PTE), Dr. Horváth Zsolt (HOZGABO.PTE), Dr. Kasó Gábor (KAGMAAO.PTE), Dr. Schwarz Attila (SCAFABO.PTE), Dr. Vető Ferenc (VEFMAAO.PTE)
**OAEMKF Neurosurgical Treatment of Neurogenic Pain and Movement Disorders**

Course director: **DR. ISTVÁN BALÁS**, associate professor  
Department of Neurosurgery

<table>
<thead>
<tr>
<th>1 credit • midterm grade • elective module • spring semester • recommended semester: 10</th>
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<td><strong>Number of hours/semester:</strong></td>
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<td><strong>Headcount limitations (min-max.):</strong></td>
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<td><strong>Prerequisites:</strong></td>
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**Topic**

Department of Functional Neurosurgery University of Pécs, Hungary is dedicated to the surgical alleviation of movement disorders such as Parkinson’s disease, dystonia, tremor, and neuropathic pain syndromes (phantom limb pain, trauma-related, failed back surgery syndrome, metabolic, post-stroke pain, etc.). The service offers deep brain stimulation, spinal cord stimulation, motor cortex-, and peripheral nerve stimulations, or lesional procedures as appropriate.

The aim of the course is to forecast participants about anatomical, pathological, electrophysiological basis of extrapyramidal movement disorders (Parkinson’s disease, tremors, etc.) and also chronic neurogenic pain.

Patient selection, criteria of surgery (indications-contraindications), perioperative investigations, different targeting methods, and surgical procedure, programming of neuromodulators will be discussed. VIDEO demonstration and analysis of different movement disorders available. According to demand students can participate in surgery.

**Conditions for acceptance of the semester**

Maximum 25% missed classes (2 seminars)

**Making up for missed classes**

No possibility to make up for the missed classes.

**Reading material**

**Lectures**

**Practices**

**Seminars**

1. Diagnostics of Parkinson disease  
2. Diagnostics of tremors  
3. Diagnostics of dystonias  
4. Diagnostics of neuropathic pain  
5. Preoperative examinations, surgical indications of Parkinson disease  
6. Preoperative examinations, surgical indications of tremors  
7. Preoperative examinations, surgical indications of dystonias  
8. Preoperative examinations, surgical indications of neuropathic pain  
9. Neuropsychological tests of movement disorders  
10. Neuropsychological tests of neuropathic pain  
11. Clinical tests of neuropathic pain  
12. Clinical tests of movement disorders  
13. Surgical technique of movement disorders  
14. Electrophysiological tests of movement disorders

**Exam topics/questions**

A written form paper is necessary.

**Participants**

Dr. Balás István (BAIMAAO.PTE)
OAENKE CLINICOPATHOLOGICAL CASES IN NEPHROLOGY AND HYPERTENSION

**Course director:**
**JUDIT NAGY**, professor
2nd Department of Internal Medicine

1 credit • midsession grade • Elective module • spring semester • recommended semester: 10
Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 60
Prerequisites: OAKNHA parallel

**Topic**
The aim of the seminars is to give more information about the various kidney diseases and hypertension through different case presentations. The topic is focusing on clinical, laboratorical, pathological and imaging diagnosis and treatment of most common cases.

**Conditions for acceptance of the semester**
The maximum permitted number of absences is 1 seminar (1x 2 hours).

**Making up for missed classes**

**Reading material**

**Lectures**

**Practices**

**Seminars**
1 The indications of renal biopsy and the informations given by histological examinations in nephrology.
2 The indications of renal biopsy and the informations given by histological examinations in nephrology.
3 Nephrotic syndrome
4 Nephrotic syndrome
5 Diabetic nephropathy
6 Diabetic nephropathy
7 Diagnosis of CKD with screening examinations. Cardiology.
8 Diagnosis of CKD with screening examinations. Cardiology.
9 Renal imaging techniques.
10 Renal imaging techniques.
11 Prevention of contrast nephropathy.
12 Prevention of contrast nephropathy.
13 Chronic kidney diseases are frequent. They can be discovered using screening examinations.
14 Chronic kidney diseases are frequent. They can be discovered using screening examinations.

**Exam topics/questions**
Exam will be after the last seminar in written form.

**Participants**
Dr. Degrel Péter (DEPPAAP.PTE), Dr. Fehér Eszter (FEEMAAO.PTE), Dr. Halmay Richárd (HARFACO.PTE), Dr. Kovács Tibor (KOTMABO.PTE), Dr. Nagy Judit (NAJGAAO.PTE), Dr. Wittmann István (WIILAAO.PTE)
### OAENKT  HIGH-RISK PREGNANCY

**Course director:**
**DR. PÉTER TAMÁS**, associate professor
Department of Obstetrics and Gynaecology

<table>
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<tr>
<th>1 credit • midsemester grade • Elective module • spring semester • recommended semester: 10</th>
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<tr>
<td><strong>Number of hours/semester:</strong> 14 lectures + 0 practices + 0 seminars = total of 14 hours</td>
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<td><strong>Headcount limitations (min-max.):</strong> min. 4 – max. 40</td>
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<tr>
<td><strong>Prerequisites:</strong> OAKST1 completed</td>
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**Topic**

The goal of this course is to give up-to-date information about pathophysiology of high-risk pregnancies, diagnostic pitfalls, and dilemmas of the management.

This course has been organized for students who are deeply interested in obstetrics.

**Conditions for acceptance of the semester**

- Absence of 1-2 hours: acceptable;
- Absence of 3-4 hours: requires individual evaluation; the leader of the course may give license for examination;
- Absence more than 4 hours: the course is not acceptable, exam is not permitted;

**Making up for missed classes**

see above

**Reading material**

- Hand-out of lecturers;

### Lectures

1. Background of habitual abortions, diagnostic and therapeutic opportunities
   Dr. Tamás Péter
2. Prenatal screening for chromosomal abnormalities
   Dr. Tamás Péter
3. Prenatal diagnosis of congenital abnormalities
   Dr. Tamás Péter
4. Non-immune hydrops fetalis
   Dr. Tamás Péter
5. Pregnancy and cervical carcinoma
   Dr. Tamás Péter
6. Three-dimensional ultrasound in obstetrics
   Dr. Tamás Péter
7. Infectious diseases and pregnancy
   Dr. Tamás Péter
8. Hemodynamic and hemorheological alterations in normal and preeclamptic pregnancies
   Dr. Tamás Péter
9. HELLP-syndrome
   Dr. Tamás Péter
10. Dilemmas of tocolysis
    Dr. Tamás Péter
11. Management of preterm premature rupture of membranes
    Dr. Tamás Péter
12. Causes of intrauterine growth restriction and its diagnostic and therapeutic opportunities
    Dr. Tamás Péter
13. Macrosomia
    Dr. Tamás Péter
14. Fetal hypoxia; diagnosis and management
    Dr. Tamás Péter

### Practices

### Seminars
Exam topics/questions
- Background of habitual abortions, diagnostic and therapeutic opportunities
- Prenatal screening for chromosomal abnormalities
- Prenatal diagnosis of congenital abnormalities
- Non-immune hydrops foetalis
- Pregnancy and cervical carcinoma
- Opportunities to improve perinatal morbidity and mortality in pregnancies complicated with diabetes mellitus
- Pregnancy in endocrinological diseases
- Hemodynamic and hemorheological alterations in normal and pre-eclamptic pregnancies
- HELLP-syndrome
- Dilemmas of tocolysis
- Management of preterm premature rupture of membranes
- Causes of intrauterine growth restriction; diagnostic approaches and therapeutic opportunities;
- Macrosomia
- Fetal hypoxia; diagnosis and management

Participants
Dr. Bay Csaba (BACPAAP.PTE), Dr. Csermely Tamás (CSTGABO.PTE), Dr. Erzl Tibor (ERTMAAO.PTE), Dr. Gőcze Péter (GOPMAAO.PTE), Dr. Koppán Miklós (KOMHADE.PTE), Dr. Tamás Péter (TAPMAAO.PTE), Dr. Vizer Miklós (VIMRAAO.PTE)
OAENTR NEUROTRAUMATOLOGY

Course director: DR. ANDRÁS BÜKI, associate professor
Department of Neurosurgery

1 credit • midsemester grade • Elective module • spring semester • recommended semester: 10

Number of hours/semester: 6 lectures + 6 practices + 2 seminars = total of 14 hours
Headcount limitations (min-max.): min. 3 – max. 25
Prerequisites: OAANEA completed + OAPSPR completed + OAKNE1 completed

Topic
Traumatic brain and spinal cord injury is considered the leading cause of death and permanent morbidity in the population under 40. State of the art treatment of such conditions is one of the most cost-efficient medical interventions.
This chapter of Neurosurgery deals with acute scenarios physicians should face not only in their practice but also in their everyday „private” life.
Completion of the course will enable students to classify various forms of central nervous system injuries while also being capable of decision making in terms of transfer as well as definitive treatment.

Conditions for acceptance of the semester
Visit at least 75 percent of lectures and practices.

Making up for missed classes
Practices could be repeated in a month.

Reading material
http://neurosurgery.pote.hu
http://www.braintrauma.org

Lectures
1 Classification of brain and spinal cord injury
   Dr. Büki András
2 Advanced Trauma Life SupportŽ in brain and spinal cord injury
   Dr. Büki András
3 Neuroradiological background of brain and spinal cord injury
   Dr. Büki András
4 Neurointensive monitoring and care
   Dr. Büki András
5 Neurosurgical interventions
   Dr. Büki András
6 Neurorehabilitation in CNS injury
   Dr. Büki András

Practices
1 Primary survey in head injury
2 Primary survey in spinal cord injury
3 Secondary survey in CNS injury
4 Neuromonitoring in CNS injury
5 Surgical care for CNS injury
6 The practice of neurorehabilitation

Seminars
1 Classification of CNS injuries
2 Therapeutic algorithms

Exam topics/questions
http://neurosurgery.pote.hu

Participants
Dr. Büki András (BUAMAO.PTE), Dr. Ezer Erzsébet (EZEMAO.PTE)
**OAERAM CASES IN CLINICAL RADIOLOGY**

**Course director:** DR. ISTVÁN BATTYÁNI, associate professor  
Department of Radiology

**1 credit • midsemester grade • Elective module • spring semester • recommended semester: 10**

**Number of hours/semester:** 0 lectures + 14 practices + 0 seminars = total of 14 hours  
**Headcount limitations (min-max.):** min. 5 – max. 15  
**Prerequisites:** OAKKRA completed + OAKSE2 completed

**Topic**

14 lessons, all of them are practices, (one hour per week) (one by groups per week). The practises are enclosed. Clinical and differential diagnostical application of the learn knowledges. The students have to analyse the prepared cases during the practice. They have to find the best diagnostic algorithm and the final exact diagnosis. The cases simulate the real life diseases.

**Conditions for acceptance of the semester**

To get the index book signed, a maximum of 2 (two) seminars (2 hours) may be missed and they are not replaceable by any kind. Missed seminars, caused by disease, can be certified by a written certificate obtained from the treating physician (booked in the log of his/her office)!

**Making up for missed classes**

No possibility for the replacement.

**Reading material**

In English:
- G. M. Roberts, J. P. Hughes, and M. D. Hourihan: Clinical Radiology for Medical Students  

In Hungarian:
- Fráter, Palkó, Makó, Kollár, Battyáni: Radiológia (Medicina, 2007)

**Recommended:** Davit Sutton: Textbook of Radiology and Imaging (latest edition), ELSEVIER

**Lectures**

**Practices**

1. Clinical cases I.  
2. Clinical cases II.  
3. Clinical cases III.  
4. Clinical cases IV.  
5. Clinical cases V.  
6. Clinical cases VI.  
7. Clinical cases VII.  
8. Clinical cases VIII.  
9. Clinical cases IX.  
10. Clinical cases X.  
11. Clinical cases XI.  
12. Clinical cases XII.  
13. Clinical cases XIII.  
14. Clinical cases XIV.

**Seminars**

**Exam topics/questions**

Practical exam.

**Participants**

Dr. Battányi István (BAIHABO.PTE), Dr. Horváth László (HOLGAAO.PTE), Dr. Rostás Tamás (ROTMAAO.PTE), Dr. Weninger Csaba (WECMAAO.PTE)
**OAEUEL  NEONATAL CARE IN THE DELIVERY ROOM (ADAPTATION)**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. TIBOR ERTL, professor</th>
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<tr>
<td>Department of Obstetrics and Gynaecology</td>
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1 credit • midsemester grade • Elective module • spring semester • recommended semester: 10

**Number of hours/semester:** 4 lectures + 6 practices + 2 seminars = total of 12 hours

**Headcount limitations (min-max.):** min. 5 – max. 25

**Prerequisites:** OAKGT3 completed + OAPPA2 completed

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**Topic**

As a result of establishing Perinatal Intensive Care Centers, the possibility of studying physiological changes in the perinatal period became a reality within one institute. The investigation of neonatal adaptation has been an important scientific field at our department for decades. We detected basic physiologic and pathophysiologic changes with regard to the prevention of respiratory distress and hormonal influence on renal function. We investigated the effect of delivery mode on the transition from fetus to newborn. This practice-oriented course provides the possibility of studying delivery room management as well as the complications of prematurity on the short-term adaptation and long-term consequences.

**Conditions for acceptance of the semester**

Maximum of absence 25% (=3 hours)

**Making up for missed classes**

There is no possibility to make up for the missed classes.

**Reading material**

Notes in the lectures and practicals.

**Lectures**

1. Hormonal changes during delivery  
   Dr. Ertl Tibor
2. Neonatal adaptation  
   Dr. Ertl Tibor
3. Adaptation problems of preterm infants  
   Dr. Ertl Tibor
4. Chronic diseases of preterm infants  
   Dr. Ertl Tibor

**Practices**

1. Neonatal assessment in the delivery room
2. Transport of preterm infants
3. Monitoring sick newborns
4. Methods of breathing support in newborns
5. Screening and treatment of complications of prematurity
6. Habilitation of sick newborns

**Seminars**

1. Metabolic adaptation disorders in preterm infants
2. Perinatal infections

**Exam topics/questions**

**Participants**
Optional subjects
OAFBAL  MINERAL AND SPA WATERS, BALNEOLOGY

Course director: DR. CSABA VARGA, associate professor
Department of Public Health Medicine

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 1

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 –
Prerequisites: -

Topic
The main educational task of the subject initiating to form state-of-art regarding use and application of mineral and spa waters in Hungary and EU with special respect of the prevention.

Short description of the course: Delivering up to date hydrological, hydrogeological, physical, chemical, biological knowledge for students of medicine and other sciences.

Conditions for acceptance of the semester
Absence of 2 x 2 hours is acceptable.
At the end of the course a test has to be written at the last lecture.

Making up for missed classes

Reading material
www.pote.hu/pubhealth
Coospace

Lectures
1 Hydrogeology and balneology of mineral and spa waters
   Dr. Varga Csaba
2 Hydrogeology of Hungarian mineral and spa waters
   Dr. Varga Csaba
3 Correlation of the geological characteristics and the chemical composition
   Dr. Varga Csaba
4 Hydrology of mineral and spa waters
   Dr. Varga Csaba
5 Mineral and spa waters in Hungary and Europe
   Dr. Varga Csaba
6 Chemical characteristics of mineral and spa waters
   Dr. Varga Csaba
7 Inorganic analytical classification
   Dr. Varga Csaba
8 Presence of microelements
   Dr. Varga Csaba
9 Inorganic ions, substances and complexes in the therapeutical effect
   Dr. Varga Csaba
10 Organic ions, substances and complexes in the therapeutical
   Dr. Varga Csaba
11 In situ water analysis
   Dr. Varga Csaba
12 Inorganic analysis
   Dr. Varga Csaba
13 Hygienic microbiological analysis
   Dr. Varga Csaba
14 Artificial mineral and medicinal waters
   Dr. Varga Csaba
15 Peloids: genesis, chemical/physical/toxicological properties. Hungarian peloids.
   Dr. Varga Csaba
16 Mineral and spa water products
   Dr. Varga Csaba
17 Introduction to Balneology: objectives and history
   Dr. Varga Csaba
18 Water and ions in the human body
   Dr. Varga Csaba
19 External cure with spa waters, mode of action  
   Dr. Varga Csaba
20 Mechanic, thermal, chemical and psychic actions, Spa reaction.  
   Dr. Varga Csaba
21 Water types in cure  
   Dr. Varga Csaba
22 Application of spa waters to different diseases  
   Dr. Varga Csaba
23 Therapeutic applications of peloids  
   Dr. Varga Csaba
24 Internal use of mineral and medicinal waters, Drinking cure  
   Dr. Varga Csaba
25 Inhalation cure  
   Dr. Varga Csaba
26 Other natural cures: climate cure, physiotherapy, additional therapies  
   Dr. Varga Csaba
27 Exam  
   Dr. Varga Csaba
28 Exam  
   Dr. Varga Csaba

Practices

Seminars

Exam topics/questions

Participants
INTRODUCTION TO BIOMETRICS

Course director:  
DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis

1 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 1

Number of hours/semester:  
0 lectures + 14 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.):  
min. 1 – max. 20

Prerequisites:  
-

Topic
Exploring data (using graphs and numbers) are usually handled as one-lesson ‘first chapter’ by basic statistical courses. This is, because a first course in statistics introduces many new skills. It also introduces some new ideas, that all are ‘hard to understand’ for students. The new approach is to make a solid foundation to learn statistics by a more thorough introduction to those: The course tries to make clear a few of these fundamental ideas of statistics - limited to understanding and working with data. An improved skill for exploring data is useful not only at your classes and your future job but in the everyday life as well.

Conditions for acceptance of the semester
Active participation at the classes; maximum one missed class.

Making up for missed classes
one extra class

Reading material
Suggested textbooks:
2, Moore, David S., McCabe, George P. Introduction to the Practice of Statistics 5th Ed, 2005, W.H. Freeman

Lectures
Practices
1 Probability examples 1
2 continue
3 Probability examples 2 - discrete distributions
4 continue
5 Exploring data by graphs -1
6 continue
7 Exploring data by graphs -2.
8 continue
9 Exploring data by numbers - sample measures 1
10 continue
11 Exploring data by numbers - sample measures 2
12 continue
13 The normal distribution
14 continue

Seminars

Exam topics/questions

Participants
Dr. Pótó László (POLGABO.PTE)
OAFBFM  PROBLEM SOLVING IN BIOMETRICS

Course director:  DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis

1 credit  •  midsemester grade  •  Optional module  •  both semesters semester  •  recommended semester: 1

Number of hours/semester:  0 lectures + 14 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.):  min. 1 – max. 20
Prerequisites:  -

Topic
Give a chance to have more practice to solve problems in Biometrics using PC and the SPSS software in the computer room. This was a regular need of the students earlier since the special way how a MD should handle the typical medical problems (special way of thinking) was not founded by the secondary school education. This foundation is an important focus point of the Biometrics course. It seems, the weekly 1+1 lectures were not enough for most of the students for completing this important goal: To develop some brand new skills. This course offers an organized way for that extra practices. It offers also some ‘brushing up’ chances for those who has completed Biometrics earlier.

Conditions for acceptance of the semester
Active participation on the classes
Making up for missed classes
one extra class

Reading material
Biometrics (workbook) - by L. Pótó PTE ÁOK 2007.
Textbooks:
2, Moore, David S., McCabe, George P. Introduction to the Practice of Statistics 5th Ed, 2005, W.H. Freeman

Lectures
Practices
1-2  The Confidence Interval of the expected value
3-4  The one sample (and the paired samples) t test
5-6  The CI and the hypothesis testing - the type one and type two errors.
7-8  The independent samples t test
9-10  The linear regression
11-12  The contingency tables - the chi squares test
13-14  The nonparametric tests

Seminars
Exam topics/questions
Participants
Dr. Pótó László (POLGABO.PTE)
OAFBO1 BIOPHYSICS SEMINARS 1

Course director: DR. GÁBOR HILD, associate professor
Department of Biophysics

1 credit • mideastern grade • Optional module • autumn semester • recommended semester: 1

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 25
Prerequisites: OAAB11 parallel

Topic
The objective of the course is to advance the acquisition of knowledge and skills related to Biophysics 1. Object-oriented discussions and problem solving sessions are organized in interactive small-group seminars.

Conditions for acceptance of the semester
Maximum of three absences.

Making up for missed classes
None.

Reading material
Lectures
Practices
Seminars
1 Mathematical basics
2 Foundations of quantum physics
3 Structure of atoms. Quantum numbers
4 The electromagnetic spectrum. Light. The laser
5 X-rays. Atomic nucleus. Radioactivity
6 Interaction of radioactive radiations with matter. Biological effect of radiations
7 Laws of thermodynamics. Thermodynamic potentials
8 Diffusion. Osmosis
9 Laws of fluid flow. Water
10 Circulation. Cardiac biophysics
11 Macromolecules. Protein structure and folding
12 Resting membrane potential. Sensory receptors. Action potential
13 Vision. Hearing
14 Test writing

Exam topics/questions
Can be found on the departmental website: http://biofizika.aok.pte.hu

Participants
Barkó Szilvia (BASFAB.T.JPTE), Dr. Bódis Emőke (BOEAAAD.T.JPTE), Dr. Bugyi Beáta (BUBEAB.T.JPTE), Dr. Grama László (GRLHAA.O.PTE), Dr. Hild Gábor (HIGMAA.O.PTE), Dr. Visegrédy Balázs (VIBAAB.T.JPTE), Kardos Roland (KARFAB.T.JPTE), Szatmári Dávid Zoltán (SZDHAAT.PTE), Ujfalusi Zoltán (UJZDAA.T.JPTE), Vig Andrea Teréz (VIAFAAO.PTE)
OAFGOM POISONOUS MUSHROOMS

Course director: DR. LORÁND BARTHÓ, professor
Department of Pharmacology and Pharmacotherapy

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 1

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 60

Prerequisites: -

Topic

SUMMARY
Family physicians may play an important role in the early identification and management of mushroom poisoning (MP).
This course:
- deals with the various types of MP and their symptoms;
- molecular mechanisms encountered with the effects of cytotoxic MPs
- morphological features of the most important toxic mushrooms/fungi and their edible counterparts.
Besides a comprehensive colour illustration material, participants are offered optional field practices on the weekends.

Conditions for acceptance of the semester
- Attending at least 75% of the lessons, passing the exam
- Oral exam includes matters of poisonings, as well as recognizing the most important PMs and their edible counterparts

Making up for missed classes
Individual

Reading material
CD prepared by the examiner
Optional: RogersMushrooms (www)

Lectures
1 Introduction
   Dr. Barthó Loránd
2 Introduction
   Dr. Barthó Loránd
3 Amanitas, Lepiotas (parasols) and their poisonings
   Dr. Barthó Loránd
4 Amanitas, Lepiotas (parasols) and their poisonings
   Dr. Barthó Loránd
5 Amanitas, Lepiotas (parasols) and their poisonings
   Dr. Barthó Loránd
6 Amanitas, Lepiotas (parasols) and their poisonings
   Dr. Barthó Loránd
7 Other mushrooms with white spores and their p.
   Dr. Barthó Loránd
8 Other mushrooms with white spores and their p.
   Dr. Barthó Loránd
9 Other mushrooms with white spores and their p.
   Dr. Barthó Loránd
10 Other mushrooms with white spores and their p.
   Dr. Barthó Loránd
11 Mushrooms with pink, brown or black spores
   Dr. Barthó Loránd
12 Mushrooms with pink, brown or black spores
   Dr. Barthó Loránd
13 Mushrooms with pink, brown or black spores
   Dr. Barthó Loránd
14 Mushrooms with pink, brown or black spores
   Dr. Barthó Loránd
15 Mushrooms with pink, brown or black spores
   Dr. Barthó Loránd
16 Mushrooms with pink, brown or black spores
   Dr. Barthó Loránd
17 Mushrooms with tubes, pores, wrinkles or spines
   Dr. Barthó Loránd
18 Mushrooms with tubes, pores, wrinkles or spines
   Dr. Barthó Loránd
19 Molecular mechanisms encountered with the effects of cytotoxic MPs
   Dr. Szeberényi József
20 Molecular mechanisms encountered with the effects of cytotoxic MPs
   Dr. Szeberényi József
21 Morels, false morels, puff-balls, corals, etc.
   Dr. Barthó Loránd
22 Morels, false morels, puff-balls, corals, etc.
   Dr. Barthó Loránd
23 Some forensic aspects of MPs
   Dr. Sétáló Judit
24 Muscarine, muscimol, ibotenic acid
   Dr. Barthó Loránd
25 Coprin, orellain, aflatoxin
   Dr. Barthó Loránd
26 Reprise of poisonous mushrooms
   Dr. Barthó Loránd
27 Reprise of types of poisoning
   Dr. Barthó Loránd
28 Exam
   Dr. Barthó Loránd

Practices

Seminars

Exam topics/questions
Oral exam including matters of poisonings, as well as recognizing the most important PMs and their edible counterparts
Cytotoxic MPs
GI and muscarine-type of MP
Psychotropic MP
Other types of MP

Participants
OAFH11 HUNGARIAN FOR FOREIGNERS A1 - BREAKTHROUGH HUNGARIAN - PART 1
Course director: KATALIN PELCZ, language teacher
International Studies Center

2 credit • midsession grade • Optional module • both semesters semester • recommended semester: 1
Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min 4 – max. 12
Prerequisites: OAFH12 parallel

Topic
The Breakthrough Hungarian course puts an emphasis on basic grammatical structures in speaking, writing, reading and listening. Has a very basic repertoire of words and simple phrases related to personal details and particular concrete situations.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted.

Reading material

Lectures
Practices
Seminars
- Ki vagy te? (Bemutatkozás, köszönési formák, Hogy vagy?, Milyen ember vagy?, Hol él? Milyen nyelven beszélsz? Hány éves vagy?)
- A városban (Mik vannak/nincsenek a városban?, Hol vannak ..., Mit csinál?), Honnan jössz?, Hová mész?, napirend, heti program, csőrög a telefon, Hány óra van?, Hány?, Mennyi?, Mikor?, napozások, napirend)
- Mit eszünk? (élelmiszerek, zöldségek, gyümölcsök, vásárlás, étel, az étteremben, Mit szeret vagy csinálni?, hobbik, Hányhóz?)
- Fél évszázad nagy idő! (évszakok, születésnap, telefonálás, udvariassági formulák, szállodai bejelentő, utazás, pályaudvar, jegypénztár, információkérés, család)
- Boldog születésnapot! (bulit szervezünk, Egy nehéz reggelen..., Mit kell csinálni?, Érkeznek a vendégek, család, személyleírás, külső és belső tulajdonságok)

Exam topics/questions
3. Mit eszünk? (élelmiszerek, zöldségek, gyümölcsök, vásárlás, étel, az étteremben, Mit szeret vagy csinálni?, hobbik, Hányhóz?)
4. Fél évszázad nagy idő! (évszakok, születésnap, telefonálás, udvariassági formulák, szállodai bejelentő, utazás, pályaudvar, jegypénztár, információkérés, család)
5. Boldog születésnapot! (bulit szervezünk, Egy nehéz reggelen?, Mit kell csinálni?, Érkeznek a vendégek, család, személyleírás, külső és belső tulajdonságok)

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
OAFH12 HUNGARIAN FOR FOREIGNERS A1 - BREAKTHROUGH HUNGARIAN - PART 2
Course director: KATALIN PELCZ, language teacher
International Studies Center

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 1
Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 4 – max. 12
Prerequisites: OAFH11 parallel

Topic
The Breakthrough Hungarian course puts an emphasis on basic grammatical structures in speaking, writing, reading and listening. Has a very basic repertoire of words and simple phrases related to personal details and particular concrete situations.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted.

Reading material

Lectures
Practices
Seminars
- Ki vagy te? (Bemutatkozás, köszönési formák, Hogy vagy?, Milyen ember vagy?, Hol élsz? Milyen nyelven beszélsz? Hány éves vagy?)
- A városban (Mik vannak/nincsenek a városban?, Hol vannak ...?, Mit csinálz?, Honnan jössz?, Hová mész?, napirend, heti program, csőrög a telefon, Hány óra van?, Hány?, Mennyi?, Mikor?, napszakok, napirend)
- Mit eszünk? (Élelmiszer, zöldségek, gyümölcsök, vásárlás, étel, az étteremben, Mit szeretsz csinálni?, hobbyk, Hányhóz?)
- Fél évszázad nagy idő! (Évszakok, születésnap, telefonálás, udvariassági formák, szállodai bejelentő, utazás, pályaudvar, jegypénztár, betanítás, család)
- Boldog születésnapot! (Búlat szervezünk, Egy nehéz reggelen..., Mit kell csinálni?, Érkeznek a vendégek, család, személyleírás, külső és belső tulajdonságok)

Exam topics/questions
3. Mit eszünk? (Élelmiszer, zöldségek, gyümölcsök, vásárlás, étel, az étteremben, Mit szeretsz csinálni?, hobbyk, Hányhóz?)
4. Fél évszázad nagy idő! (Évszakok, születésnap, telefonálás, udvariassági formák, szállodai bejelentő, utazás, pályaudvar, jegypénztár, információkérés, család)
5. Boldog születésnapot! (Búlat szervezünk, Egy nehéz reggelen..., Mit kell csinálni?, Érkeznek a vendégek, család, személyleírás, külső és belső tulajdonságok)

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
INTERCULTURAL COMMUNICATION IN MEDICINE

Course director: DR. ZSUZSANNA FÜZESI, associate professor
Department of Behavioural Sciences

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 1

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 1 – max. 300
Prerequisites: -

Topic
The course provides the content and aspects of communication skills and a particular background of knowledge in that science. This will help students in taking medical history and in interviews with patients, in particular in intercultural context.

Conditions for acceptance of the semester
maximal 3 lessons

Making up for missed classes

Reading material

Lectures
1 Introduction
   Dr. Füzesi Zsuzsanna
2 Introduction
   Dr. Füzesi Zsuzsanna
3 The term and duty of communication
   Dr. Füzesi Zsuzsanna
4 The term and duty of communication
   Dr. Füzesi Zsuzsanna
5 Direct and indirect communication
   Dr. Füzesi Zsuzsanna
6 Direct and indirect communication
   Dr. Füzesi Zsuzsanna
7 Verbal and non-verbal communication
   Dr. Füzesi Zsuzsanna
8 Verbal and non-verbal communication
   Dr. Füzesi Zsuzsanna
9 Non-verbal communication
   Dr. Füzesi Zsuzsanna
10 Non-verbal communication
    Dr. Füzesi Zsuzsanna
11 The interpretation and importance of „the other”
    Dr. Füzesi Zsuzsanna
12 The interpretation and importance of „the other”
    Dr. Füzesi Zsuzsanna
13 Interculturality
    Dr. Füzesi Zsuzsanna
14 Interculturality
    Dr. Füzesi Zsuzsanna
15 Cultural models
    Dr. Füzesi Zsuzsanna
16 Cultural models
    Dr. Füzesi Zsuzsanna
17 Stereotype, prejudice, discrimination I.
    Dr. Füzesi Zsuzsanna
18 Stereotype, prejudice, discrimination I.
    Dr. Füzesi Zsuzsanna
19 Stereotype, prejudice, discrimination II.
    Dr. Füzesi Zsuzsanna
20 Stereotype, prejudice, discrimination II.
    Dr. Füzesi Zsuzsanna
The cultural shock
Dr. Füzesi Zsuzsanna

Cultural groups I.
Dr. Füzesi Zsuzsanna

Cultural groups II.
Dr. Füzesi Zsuzsanna

Evaluation
Dr. Füzesi Zsuzsanna

Practices
Seminars
Exam topics/questions
Participants
OAFKEF | PHYSICAL BASIS AND APPLICATION OF MEDICAL IMAGING TECHNIQUES
Course director: | DR. DÉNES LÓRINCZY, professor
Department of Biophysics

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 1

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 36

Prerequisites: -

Topic
Structure, function and resolution of light and electron microscopes. Generation and spectrum of X-ray, its interaction with matter. Structure of X-ray equipment, image formation, summation effect, contrast. CT, two and three dimensional image formation, resolution, limits of application. Principle of magnetic resonance imaging, interpretation of TR, TE, T1 and T2, as well as their interrelationship. Ultrasound imaging. (According to our actual possibilities there will be picture presentation from the different imaging techniques).

Conditions for acceptance of the semester
The applicants-in the case of more than one absence (up to maximum three absences in which must not be the consultation or test)-should prepare and will be tested from the missed topics given by the instructor. In the case of more than three absences the course can not be accepted.

Making up for missed classes
As mentioned above.

Reading material
It will be announced at the beginning of the course depending on the possibilities of libraries of Biophysical Department, Faculty of Medicine. A permanent source could be the roaming in the Internet.

Lectures
   Dr. Lörinczy Dénes
2. Basic optics, interference, diffraction.
   Dr. Lörinczy Dénes
3. Camera, optics of eye, aberration of image formation.
   Dr. Lörinczy Dénes
4. Light microscope, resolution (Abbe).
   Dr. Lörinczy Dénes
5. Phasecontrast and polarised microscope.
   Dr. Lörinczy Dénes
   Dr. Lörinczy Dénes
7. The structure of electronmicroscope, its types, their working principle.
   Dr. Lörinczy Dénes
8. Laser tweezers.
   Dr. Lörinczy Dénes
   Dr. Lörinczy Dénes
10. Fluorescence microscope.
    Dr. Lörinczy Dénes
11. Ultramicroscope.
    Dr. Lörinczy Dénes
    Dr. Lörinczy Dénes
    Dr. Lörinczy Dénes
14. x-ray image formation, summation effect, contrast, image amplification.
    Dr. Lörinczy Dénes
15. CT, two and three dimensional image formation, resolution.
    Dr. Lörinczy Dénes
16. PET, gamma camera.
    Dr. Lörinczy Dénes
17. Scintigraphy.
    Dr. Lörinczy Dénes
18 Principle of magnetic resonance, the NMR.
   Dr. Lőrinczy Dénes
19 Principle of magnetic resonance imaging (MRI), limits of application.
   Dr. Lőrinczy Dénes
20 Interpretation of TR, TE, T1 and T2, as well as their interrelationship.
   Dr. Lőrinczy Dénes
21 Ultrasound, its medical and biological effects.
   Dr. Lőrinczy Dénes
22 Ultrasound imaging.
   Dr. Lőrinczy Dénes
23 Free consultation from the topics of course (discussion of any problem).
   Dr. Lőrinczy Dénes
24 Free consultation from the topics of course (discussion of any problem).
   Dr. Lőrinczy Dénes
25 Written test.
   Dr. Lőrinczy Dénes
26 Written test.
   Dr. Lőrinczy Dénes
27 Discussion of the test, final evaluation of the course.
   Dr. Lőrinczy Dénes
28 Discussion of the test, final evaluation of the course.
   Dr. Lőrinczy Dénes

Practices
Seminars
Exam topics/questions
written test
Participants
OAFKKB CHEMISTRY AND BIOCHEMISTRY IN THE KITCHEN

Course director: DR. ZOLTÁN BERENTE, associate professor
Department of Biochemistry and Medical Chemistry

1 credit • midssemester grade • Optional module • both semesters semester • recommended semester: 1

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 3 – max. 20
Prerequisites: -

Topic
The course attempts to make certain chapters of „Medical Chemistry” and „Biochemistry” more familiar to students by demonstrating how chemical and biochemical principles work in a common area of everyday life: the kitchen.

Conditions for acceptance of the semester
Presentation and successful discussion of a project elaborated at home.

Making up for missed classes
On the judgement of the tutor.

Reading material
Depends on individual projects; see on CooSpace.

Lectures
1 Chemical characterization of food ingredients
   Dr. Berente Zoltán
2 Transport through the cell membrane: salting, curing and cooking
   Dr. Berente Zoltán
3 Cell lysis in the casserole: osmosis, salting out and thermal denaturation
   Dr. Berente Zoltán
4 Thermochemistry and biochemistry of cooking, baking and roasting
   Dr. Berente Zoltán
5 Aerobic yeast: doughs, cakes and bread
   Dr. Berente Zoltán
6 Anaerobic yeast: alcoholic fermentation
   Dr. Berente Zoltán
7 Beer, wine and spirits: extraction and distillation
   Dr. Berente Zoltán
8 Tea and coffee: extraction and pharmacokinetics
   Dr. Berente Zoltán
9 Natural and artificial preservatives
   Dr. Berente Zoltán
10 Natural and artificial sweeteners
    Dr. Berente Zoltán
11 Table salt: taste and osmotic effect
    Dr. Berente Zoltán
12 Taste enhancers, monosodium glutamate and the umami taste
    Dr. Berente Zoltán
13 Washing up: detergents and surfactants
    Dr. Berente Zoltán
14 Project presentations
    Dr. Berente Zoltán

Practices

Seminars

Exam topics/questions
Possible practical projects to be elaborated at home:
- baking biscuits under various conditions
- baking dough under various conditions
- roasting meat after different preparations
Possible theoretical projects:
- Omega lipids: composition, metabolism, dietary role
- Milk: composition and preservation
- Dairy products: composition and technology
- How to produce alcohol-free beer?
- Coffee: ingredients and technology
- Possible side effects of artificial sweeteners
- Possible side effects of taste enhancers

Participants
OAFMUV  PSYCHIATRY AND ART
Course director:  DR. TAMÁS TÉNYI, associate professor
Department of Psychiatry and Psychotherapy

1 credit • midesterm grade • Optional module • both semesters semester • recommended semester: 1

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 3 – max. 120
Prerequisites: -

Topic
The subject deals with the psychopathology of expression and art therapy. The psychoanalysis of art is introduced and philosophical issues are integrated.

Conditions for acceptance of the semester
According to the Code of Studies and Examinations

Making up for missed classes
According to the Code of Studies and Examinations

Reading material
Jakab I: Pictorial expression in psychiatry, Akadémia Kiadó, Bp.

Lectures
1  Summary  
   Dr. Tényi Tamás
2  Psychology of creativity II.  
   Dr. Tényi Tamás
3  Music therapy II.  
   Dr. Tényi Tamás
4  Music therapy I.  
   Dr. Tényi Tamás
5  Art therapy II.  
   Dr. Tényi Tamás
6  Art therapy I.  
   Dr. Tényi Tamás
7  Psychology of creativity IV.  
   Dr. Tényi Tamás
8  Poetry of psychotics  
   Dr. Tényi Tamás
9  Psychopathology of art I.  
   Dr. Tényi Tamás
10  Psychology of creativity III.  
    Dr. Tényi Tamás
11  Psychology of creativity I.  
    Dr. Tényi Tamás
12  Psychopathology of art III.  
    Dr. Tényi Tamás
13  Psychopathology of art II.  
    Dr. Tényi Tamás
14  Van Gogh  
    Dr. Tényi Tamás

Practices
Seminars
Exam topics/questions
Participants
**OAFNET  INTERNET (COMPUTER APPLICATIONS 2)**

**Course director:** DR. LÁSZLÓ PÓTÓ, associate professor

**Institute of Bioanalysis**

| 1 credit • midterm grade • Optional module • both semesters semester • recommended semester: 1 |
|---|---|
| Number of hours/semester: | 0 lectures + 14 practices + 0 seminars = total of 14 hours |
| Headcount limitations (min-max.): | min. 1 – max. 20 |
| Prerequisites: | - |

**Topic**

Internet, FTP, E-mail, WWW, chat, VoIP, ... and Facebook, Twitter, ... terms and applications that you can meet everyday. This course guides you in this rapidly growing world.

Forming a basic Internet routine. Widen your knowledge and scope of this field.

**Conditions for acceptance of the semester**

Active participation on the classes

**Making up for missed classes**

one extra class

**Reading material**

handouts

**Lectures**

**Practices**

| 1-2 | Internet history. Internet access options. |
| 3-4 | Connections 1 (email) |
| 5-6 | Connections 2 (news-groups, forums, chat, phone, …) |
| 7-8 | Up- and downloading files |
| 9-10 | Find and look for information: the web 1. |
| 13-14 | web2 ... Create your own website. |

**Seminars**

**Exam topics/questions**

**Participants**

Dr. Póto László (POLGABO.PTE)
**OAFSIK PERSONAL INFORMATION MANAGEMENT (COMPUTER APPLICATIONS 3)**

**Course director:** DR. LÁSZLÓ PÓTÓ, associate professor  
Institute of Bioanalysis  

| 1 credit • midterm grade • Optional module • both semesters semester • recommended semester: 1 |
|---|---|---|
| **Number of hours/semester:** | 0 lectures + 14 practices + 0 seminars = total of 14 hours |
| **Headcount limitations (min-max.):** | min. 1 – max. 20 |
| **Prerequisites:** | - |

**Topic**
Overview of the basic tools and strategies for time and life management - and look into another field of computer applications. You can find ideas - or may be solutions - for such typical problems like ‘I have no time’, ‘I can’t find it’ - in the school, job or private life.

Traditional and computerized methods for collecting, storing, finding the pieces of information in your everyday life. Goals and the basics of time management. Organize your schedule by notes and calendars or by the PC.

**Conditions for acceptance of the semester**
Active participation on the classes
Making up for missed classes
one extra class

**Reading material**
handouts

**Lectures**

| Practices | 1-2 What the “personal information” is and how do we handle them using traditional tools. Urgent and/or important? | 3-4 Goals and values: Exercises 1. |
| 5-6 Goals and values: Exercises 2 | 7-8 Time management basics | 9-10 Time management Exercises |
| 11-12 Traditional time- and goal management methods and Exercises | 13-14 Personal information and contact management and group work software examples for the PC |

**Seminars**

Exam topics/questions
written or oral test on the topics of the course.

**Participants**
Dr. Pótó László (POLGABO.PTE)
OAFSZ1  WORD PROCESSING (COMPUTER APPLICATIONS 1)
Course director: DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis

1 credit • midssemester grade • Optional module • autumn semester • recommended semester: 1

Number of hours/semester: 0 lectures + 14 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 1 – max. 20
Prerequisites: -

Topic
Forming a basic word processing routine
Methods and tools for creating simple written works (letter, CV, grant, and so on) by the PC

Conditions for acceptance of the semester
Active participation on the classes, maximum one missed class

Making up for missed classes
one extra class

Reading material
handouts

Lectures

Practices
1-2 The most widely used text editors: the Notepad, the Wordpad and the Word.
3-4 Entering and correcting text. File handling. Format character...
5-6 Format paragraph. Using tabulators
7-8 Tables. Create, edit and format.
9-10 Format sections. Columns.
11-12 More complex documents 1 (chapters, pagination, footnote, ...)
13-14 More complex documents 2 (contents, ...) Using the outline feature.

Seminars

Exam topics/questions
Prepare a Word file. It should demonstrate the application skill of all the routines of the course.

Participants
Dr. Póó László (POLGABO.PTE)
**Using Computers (A Basic Course)**

**Course director:** DR. LÁSZLÓ PÓTÓ, associate professor

**Institute of Bioanalysis**

1 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 1

**Number of hours/semester:** 0 lectures + 14 practices + 0 seminars = total of 14 hours

**Headcount limitations (min-max.):** min. 1 – max. 20

**Prerequisites:** -

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**Topic**

This is a basic course about computers and the PC. Students will practice how to use Windows and have an impression about the most widely used applications areas.

Widen your view about computers - first of all PC - by combining amplifying and completing your knowledge on this field.

**Conditions for acceptance of the semester**

Active participation on the classes

**Making up for missed classes**

one extra class

**Reading material**

handouts

**Lectures**

**Practices**

1-2 History and development of computing and the PC. Basic components and characteristics of the PC 1.

3-4 Basic components and characteristics of the PC 2. Development of the operating systems; features of Windows.

5-6 The most important applications. Office software components 1.

7-8 Office software components - 2.

9-10 Multimedia 1: sound recording, editing, compressing, playing.

11-12 Multimedia 2: pictures and video; picture processing.

13-14 Internet - history and the main application fields.

**Seminars**

**Exam topics/questions**

Activity and/or a written test based on all topics and fields of the course.

**Participants**

Dr. Pótó László (POLGABO.PTE)
OAFSZI  INFORMATICS OF MEDICAL LITERATURE
Course director: DR. FERENC KILÁR, professor
Institute of Bioanalysis

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 1
Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 24
Prerequisites: -

Topic
Search of scientific literature in the internet or in local databases. Databases of our own. Preparation of scientific publications, construction of reference lists.

Conditions for acceptance of the semester
According to the faculty rules

Making up for missed classes
According to the faculty rules

Reading material

Lectures

Practices
1  Introduction, definitions
2  Introduction, definitions
3  Structure of databases
4  Structure of databases
5  History of scientific literature
6  History of scientific literature
7  Basics of preparation of manuscripts
8  Basics of preparation of manuscripts
9  Web of Science
10 Web of Science
11 Web of knowledge
12 Web of knowledge
13 Endnote for web
14 Endnote for web
15 Medline, PubMed
16 Medline, PubMed
17 ACS, Science Direct
18 ACS, Science Direct
19 Impact factor, Hirsch index, citation index
20 Impact factor, Hirsch index, citation index
21 Reference lists
22 Reference lists
23 Reference Manager, EndNote
24 Reference Manager, EndNote
25 Import, export between databases
26 Import, export between databases
27 Search for other scientific information
28 Search for other scientific information

Seminars

Exam topics/questions
Preparation of a sample manuscript with the use of scientific literature search, and construction of reference list. Current Contents, Medline, Web of Science, Science Direct, SciFinder. Reference Manager, EndNote Web. EISZ.

Participants
Dr. Dömyei Ágnes (DOASAAP.PTE), Dr. Kilár Ferenc (KIIFGAAO.PTE)
**OAFTMO UNIVERSITY LEARNING SKILLS**

**Course director:** DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis

<table>
<thead>
<tr>
<th>1 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 1</th>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong> 7 lectures + 7 practices + 0 seminars = total of 14 hours</td>
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<td><strong>Headcount limitations (min-max.):</strong> min. 1 –</td>
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<td><strong>Prerequisites:</strong> -</td>
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**Topic**

Some students are successful at the university. Some are not. What makes this difference? There can be many such reasons. One of the most important is - for sure - that most students are continuing the learning style from their earlier practice. This leads to failure that causes increasing stress. This results even more failure. The key point is to break this circle: Change your learning habit, develop your learning skills. The aim of this course is to help students in that in order to maximally benefit from their university experience.

**Conditions for acceptance of the semester**

Activity and home assignments based on all topics and fields of the course.

**Making up for missed classes**

one extra class

**Reading material**

handouts

**Lectures**

1. Specificities of learning at a university. Students and Professors
   Dr. Pótó László
2. Lectures and taking notes
   Dr. Pótó László
3. Note taking systems
   Dr. Pótó László
4. Readings
   Dr. Pótó László
5. Managing your time
   Dr. Pótó László
6. Tests
   Dr. Pótó László
7. Exams
   Dr. Pótó László

**Practices**

1. Specificities of learning at a university. Students and Professors
2. Listening lectures and taking notes
3. Taking notes - 2
4. Reading skills
5. Time management skills
6. Test skills
7. Exam skills

**Seminars**

**Exam topics/questions**

**Participants**

Dr. Pótó László (POLGABO.PTE)
### OAFVB1  **HOW TO TAKE THE EXAM IN MOLECULAR CELL BIOLOGY? 1**

**Course director:** DR. JÓZSEF SZEBERÉNYI, professor  
Department of Medical Biology

| 1 credit  •  midsemester grade  •  Optional module  •  autumn semester  •  recommended semester: 1 |
|---|---|---|---|---|
| **Number of hours/semester:** | 0 lectures + 0 practices + 14 seminars = total of 14 hours |
| **Headcount limitations (min-max.):** | min. 5 – max. 80 |

### Topic

The objective of this course is to imitate the oral exam situation of Molecular Cell Biology (MCB) in a small-group-discussion setting. The list of exam question of MCB will be followed during the course: each time 4-5 students of the 20-25 member class will be examined with one question for each examinee. The examiner is one of the instructors/professors of the Department who conducts and grades the examination the same way as on „real” exams. All the examiners of the Department will be involved, in a rotation system. The aim of the course is to make students familiar with the stressful atmosphere of oral exams. Only students ready to be exposed to the exam situation week-after-week are invited to take this course.

### Conditions for acceptance of the semester

The grade is determined by continuous performance evaluation. Maximum absences: 4.

### Making up for missed classes

No possibility to make up for missed classes.

### Reading material

József Szeberényi-László Komáromy: Molecular Cell Biology Syllabus

### Lectures

### Practices

### Seminars

| 1 | Exam trial |
| 2 | Exam trial |
| 3 | Exam trial |
| 4 | Exam trial |
| 5 | Exam trial |
| 6 | Exam trial |
| 7 | Exam trial |
| 8 | Exam trial |
| 9 | Exam trial |
| 10 | Exam trial |
| 11 | Exam trial |
| 12 | Exam trial |
| 13 | Exam trial |
| 14 | Exam trial |

### Exam topics/questions


### Participants

Dr. Pap Marianna (PAMFAO.PTE), Dr. Szeberényi József (SZJGACO.PTE), ifj. Dr. Sétáló György (SEGMAAO.PTE)
OAFBKK  BIO-CULTURAL INTERACTIONS: THE NATURE OF HUMAN VARIABILITY

Course director:  DR. ÁRPÁD CSATHÓ, assistant professor
Department of Behavioural Sciences

2 credit  •  midterm grade  •  Optional module  •  spring semester  •  recommended semester: 2

Number of hours/semester:  0 lectures + 0 practices + 28 seminars = total of 28 hours

Headcount limitations (min-max.):  min. 4 – max. 40

Prerequisites: -

Topic
The aim of the course is to provide knowledge about the main underlying mechanisms of human biological and cultural variability. Through the course, students’ knowledge about the nature of human variability will be progressed along with two theoretical frameworks. On one hand, the lectures focus on issues of human population dynamics, the main characteristics of cultural and biological adaptation processes, as well as the interactions of human populations and environmental systems. On the other hand, the lectures deal with the role of gene-environment interactions in determining the high variability of human behavior. For example, issues on normal cognition, psychopathology, personality, and addiction are proposed to be discussed.

Conditions for acceptance of the semester
Attending at the seminars
Making up for missed classes

Reading material
Lectural notes

Lectures
Practices

Seminars
1  Reproductive strategies
2  Reproductive strategies
3  Human variations in aging: genetics and cognitive aging
4  Human variations in aging: genetics and cognitive aging
5  Hunger, body weight, and culinary practices
6  Hunger, body weight, and culinary practices
7  Aggression and antisocial behavior: The bio-cultural models of human personality
8  Aggression and antisocial behavior: The bio-cultural models of human personality
9  Our addictions
10  Our addictions
11  Psychopathology: environmental and genetic effects
12  Psychopathology: environmental and genetic effects
13  Heritable intelligence?
14  Heritable intelligence?
15  Genotype-Environment interactions
16  Genotype-Environment interactions
17  Challenge of urbanization
18  Challenge of urbanization
19  The main issues of ecological psychology
20  The main issues of ecological psychology
21  Growth variation: Biological and cultural factors
22  Growth variation: Biological and cultural factors
23  Evolution of human life cycle
24  Evolution of human life cycle
25  Introduction to demography
26  Introduction to demography
27  Theories in human biology and ecology: Evolutionary ecology, adaptability, and variation
28  Theories in human biology and ecology: Evolutionary ecology, adaptability, and variation

Exam topics/questions
www.aok.pte.hu/magtud

Participants
Dr. Csathó Árpád (CSAAAC.T.JPTE)
OAFBO2  BIOPHYSICS SEMINARS 2

Course director: DR. GÁBOR HILD, associate professor
Department of Biophysics

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 25

Prerequisites: OAABI2 parallel

Topic
The objective of the course is to advance the acquisition of knowledge and skills related to Biophysics 2. Object-oriented discussions and problem solving sessions are organized in interactive small-group seminars.

Conditions for acceptance of the semester
Maximum of three absences.

Making up for missed classes
None.

Reading material
2. Online materials on departmental website (http://biofizika.aok.pte.hu)

Lectures

Practices

Seminars

1 The cytoskeletal system. Motor proteins. Muscle function
2 Absorption photometry
3 Fluorescence spectroscopy
4 Fluorescence polarization. FRAP
5 FRET. Fluorescence quenching
6 X-ray diffraction
7 Transient kinetic methods
8 Modern microscopic methods
9 Sedimentation, electrophoresis
10 Infrared, Raman and CD spectroscopy
11 ESR, NMR
12 Flow cytometry
13 Diagnostic imaging methods
14 Test writing

Exam topics/questions
Can be found on the departmental website (http://biofizika.aok.pte.hu)

Participants
Dr. Bádis Emőke (BOEAAD.T.JPTE), Dr. Bugyi Beáta (BUBEAB.T.JPTE), Dr. Talián Csaba Gábor (TACRAAO.PTE), Dr. Visegrády Balázs (VIBAAB.T.JPTE), Huber Tamás (HUTEAB.T.JPTE), Kardos Roland (KARFAB.T.JPTE), Szatmári Dávid Zoltán (SZDHAAT.PTE), Ujfalusi Zoltán (UJZDAA.T.JPTE)
THE CYTOSKELETAL SYSTEM

Course director: DR. BEÁTA BUGYI, assistant professor
Department of Biophysics

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 25
Prerequisites: -

Topic
The course discusses the cytoskeletal system, a filamentous network that traverses the entire cell and participates in almost every cellular process. Biophysical, biological and biochemical properties of cytoskeletal filaments and associated proteins will be presented, as well as the experimental methods, with videomicroscopic recordings and practical examples.

Conditions for acceptance of the semester
A maximum of three absences, and a passed test.

Making up for missed classes
None.

Reading material
Mechanics of Motor Proteins and the Cytoskeleton by Jonathon Howard, 2005,
The Prokaryotic Cytoskeleton: A Written Symposium (Journal of Molecular Microbiology and Biotechnology) by S. Trachtenberg, 2006,
Online materials on departmental website (http://biofizika.aok.pte.hu)

Lectures
1  Actin cytoskeleton, microfilaments.
   Dr. Bugyi Beáta
2  Actin-binding proteins.
   Dr. Bugyi Beáta
3  Tubulin, microtubules and associated proteins.
   Dr. Talián Csaba Gábor
4  Intermediate filaments and associated proteins.
   Dr. Talián Csaba Gábor
5  Motor proteins I. Myosins and kinesins.
   Dr. Bódis Emőke
6  Motor proteins II. Dynein, dynamin, DNA-based motors, rotational motors.
   Dr. Bódis Emőke
7  Mechanisms of muscle contraction.
   Dr. Hild Gábor
8  Mechanisms of cell migration.
   Dr. Nyitrai Miklós
9  Mechanics of cell division.
   Dr. Visegrády Balázs
10 The role of cytoskeleton in intercellular communication.
    Dr. Visegrády Balázs
11 The cytoskeleton and diseases.
    Dr. Hild Gábor
12 Biophysical methods to study the cytoskeleton I: Kinetic and steady-state spectroscopic approaches.
    Dr. Nyitrai Miklós
13 Biophysical methods to study the cytoskeleton II: Microscopy, in vitro motility assay, TIRFM, FSM, AFM and single molecule approaches.
    Dr. Bugyi Beáta
14 Test writing
   Dr. Bugyi Beáta
Practices
Seminar
Exam topics/questions
Can be found on the departmental website (http://biofizika.aok.pte.hu).
Participants
OAFH21 HUNGARIAN FOR FOREIGNERS A2 - WAYSTAGE HUNGARIAN - PART 1

Course director: KATALIN PELCZ, language teacher
International Studies Center

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 2
Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 4 – max. 12
Prerequisites: OAFH22 parallel + OAFH11 completed

Topic
The Waystage Hungarian course focuses on speaking, listening, writing and reading skills and deepens fundamental grammatical and oral skills. Uses basic sentence patterns with memorised phrases, groups of a few words and formulae in order to communicate limited information in simple everyday situations.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted.

Reading material

Lectures
Practices
Seminars
- Mindennapi élet (Ádám egy reggele, az új telefon, ruhát veszünk, Milyen volt a buli?)
- A magyar konyha (étkezési szokások Magyarországon, étkezés és italok, Dávid asztalt foglal, asztalfoglalás telefonon, Mit is kell ma csinálni?)
- Utazás (a vasútállomáson, a taxiban, budapesti program, napirend, Mit fogsz csinálni?)
- (M)ilyenek vagyunk? (Mit gondolsz, milyen ember?, egy kedves ismerős, a nagyi névnapja)
- Mi történt? (Mi a panasz?, egészség, betegség, Mit szoktál csinálni? Ki volt Csontváry Kosztka Tivadar?, Mi történt?)

Exam topics/questions
1. Mindennapi élet (Ádám egy reggele, az új telefon, ruhát veszünk, Milyen volt a buli?)
2. A magyar konyha (étkezési szokások Magyarországon, étkezés és italok, Dávid asztalt foglal, asztalfoglalás telefonon, Mit is kell ma csinálni?)
3. Utazás (a vasútállomáson, a taxiban, budapesti program, napirend, Mit fogsz csinálni?)
4. (M)ilyenek vagyunk? (Mit gondolsz, milyen ember?, egy kedves ismerős, a nagyi névnapja)
5. Mi történt? (Mi a panasz?, egészség, betegség, Mit szoktál csinálni? Ki volt Csontváry Kosztka Tivadar?, Mi történt?)

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
**OAFH22 HUNGARIAN FOR FOREIGNERS A2 - WAYSTAGE HUNGARIAN - PART 2**

**Course director:** KATALIN PELCZ, language teacher

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Optional module • both semesters • semester • recommended semester: 2</th>
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**Number of hours/semester:** 0 lectures + 0 practices + 28 seminars = total of 28 hours

**Headcount limitations (min-max.):** min. 4 – max. 12

**Prerequisites:** OAFH21 parallel + OAFH12 completed

**Topic**
The Waystage Hungarian course focuses on speaking, listening, writing and reading skills and deepens fundamental grammatical and oral skills. Uses basic sentence patterns with memorised phrases, groups of a few words and formulae in order to communicate limited information in simple everyday situations.

**Conditions for acceptance of the semester**
75% of class attendance, successful oral and written exam at the end of the course

**Making up for missed classes**
75% of the lessons are obligatory. Medical certificate is accepted.

**Reading material**

**Lectures**

**Practices**

**Seminars**
- Mindennapi élet (Ádám egy reggele, az új telefon, ruhát veszünk, Milyen volt a buli?)
- A magyar konyha (étkezési szokások Magyarországon, ételk és italok, Dávid asztalt foglal, asztafoglalás telefonon, Mit is kell ma csinálnom?)
- Utazás (a vasútállomáson, a taxiban, budapesti program, napirend, Mit fogs csinálni?)
- (M)ilyenek vagyunk? (Mit gondolsz, milyen ember?, egy kedves ismerős, a nagyi névnapja)
- Mi történt? (Mi a panasza?, egészség, betegség, Mit szoktál csinálni? Ki volt Csontváry Kosztka Tivadar?, Mi történt?)

**Exam topics/questions**
1. Mindennapi élet (Ádám egy reggele, az új telefon, ruhát veszünk, Milyen volt a buli?)
2. A magyar konyha (étkezési szokások Magyarországon, ételk és italok, Dávid asztalt foglal, asztafoglalás telefonon, Mit is kell ma csinálnom?)
3. Utazás (a vasútállomáson, a taxiban, budapesti program, napirend, Mit fogs csinálni?)
4. (M)ilyenek vagyunk? (Mit gondolsz, milyen ember?, egy kedves ismerős, a nagyi névnapja)
5. Mi történt? (Mi a panasza?, egészség, betegség, Mit szoktál csinálni? Ki volt Csontváry Kosztka Tivadar?, Mi történt?)

**Participants**
Pelcz Katalin (PEKAAD.B.JPTE)
OAFIRO OFFICE APPLICATIONS (COMPUTER APPLICATIONS 4)

Course director: Dr. László Pótó, associate professor
Institute of Bioanalysis

1 credit • midterm grade • Optional module • both semesters • recommended semester: 2

Number of hours/semester: 0 lectures + 14 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 1 – max. 20

Prerequisites: -

Topic

The use of spreadsheet and presentation software is essential today when it comes to student's scientific or diploma work/theses at the university.

This course covers the basics of Excel and PowerPoint. It also gives a short introduction to databases.

Conditions for acceptance of the semester

Active participation on the classes

Making up for missed classes

one extra class

Reading material

Lectures

Practices

1 Excel basics (data entry, editing, simple calculations)
2 continue
3 Excel basics (using functions)
4 continue
5 Excel basics (creating charts)
6 continue
7 PowerPoint basics (text and background - colour, type and size)
8 continue
9 PowerPoint basics (structure of the presentation and animations)
10 continue
11 PowerPoint basics (using figures and tables)
12 continue
13 Editing and animation of Excel figures and tables in ppt presentation.
14 continue

Seminars

Exam topics/questions

Prepare a working PowerPoint presentation based on the features presented on the course.

Participants

Dr. Pótó László (POLGABO.PTE)
OAFIZM  MOLECULAR BASIS OF MUSCLE FUNCTION
Course director: DR. DÉNES LÖRINCZY, professor
Department of Biophysics

2 credit • midsemester grade • Optional module • spring semester • recommended semester: 2
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 36
Prerequisites: -

Topic

Conditions for acceptance of the semester
The applicants-in the case of more than one absence (up to maximum three absences in which must not be the consultation or test)-should prepare and will be tested from the missed topics given by the instructor. In the case of more than three absences the course can not be accepted.

Making up for missed classes
The applicants-in the case of more than one absence (up to maximum three absences in which must not be the consultation or test)-should prepare and will be tested from the missed topics given by the instructor.

Reading material
It will be announced at the beginning of the course depending on the possibilities of libraries of Biophysical Department, Faculty of Medicine. A permanent source could be the roaming in the Internet.

Lectures
1  The composition of muscle.
   Dr. Lörinczy Dénes
2  The sorts of muscle.
   Dr. Lörinczy Dénes
3  The structure of muscle on the basis of light, phasecontrast and polarization microscope.
   Dr. Lörinczy Dénes
4  Structure of muscle by ELMI.
   Dr. Lörinczy Dénes
5  Sorts of muscle contraction.
   Dr. Lörinczy Dénes
6  Elastic behaviour of passive and active muscle.
   Dr. Lörinczy Dénes
7  Muscle force and length relationship, Hill’s equation.
   Dr. Lörinczy Dénes
8  Work and heat production done by a muscle, efficiency of muscle function.
   Dr. Lörinczy Dénes
9  Thermoelastic behaviour of muscle.
   Dr. Lörinczy Dénes
10 Muscle models proposed by mechanical and structural investigations.
   Dr. Lörinczy Dénes
11 Biochemical basis and energetics of muscle function.
   Dr. Lörinczy Dénes
12 Bioelectrical phenomena. Action potentials.
   Dr. Lörinczy Dénes
13 Nernst equation, G-H-K equation.
   Dr. Lörinczy Dénes
14 Voltage- and patch-clamp techniques.
   Dr. Lörinczy Dénes
15 Excitation-contraction coupling.
   Dr. Lörinczy Dénes
16 Structure of muscle proteins (actin and myosin, actomyosin complex).
   Dr. Lörinczy Dénes
17 Discussion of sliding model in details (x-ray diffraction).
   Dr. Lőrinczy Dénes
18 Molecular dynamic background of muscle contraction (EPR spectroscopy)
   Dr. Lőrinczy Dénes
19 Muscle in the sport and rehabilitation (wellness).
   Dr. Lőrinczy Dénes
20 Principle of differential scanning calorimetry.
   Dr. Lőrinczy Dénes
21 Thermodynamic background of muscle contraction (DSC results)
   Dr. Lőrinczy Dénes
22 Muscle and levers in locomotion.
   Dr. Lőrinczy Dénes
23 Free consultation from the topics of course (discussion of any problem).
   Dr. Lőrinczy Dénes
24 Free consultation from the topics of course (discussion of any problem).
   Dr. Lőrinczy Dénes
25 Written test.
   Dr. Lőrinczy Dénes
26 Written test.
   Dr. Lőrinczy Dénes
27 Discussion of the test, final evaluation of the course.
   Dr. Lőrinczy Dénes
28 Discussion of the test, final evaluation of the course.
   Dr. Lőrinczy Dénes

Practices
Seminars
Exam topics/questions
Written test
Participants
DISEASES OF SIGNAL TRANSDUCTION

Course director: GYÖRGY SÉTÁLÓ DR. JR., associate professor
Department of Medical Biology

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 25
Prerequisites: OAAMB1 completed

Topic
The topics of signal transduction will be discussed beyond the details of the compulsory course, Molecular cell biology 2. In 14 x 45 minutes special attention is paid to mechanisms that are relevant to diseases. The course is recommended to those students who are especially interested in the signaling aspects of pathological processes.

Conditions for acceptance of the semester
The maximally acceptable number of missed classes is 4.

Making up for missed classes
It is not possible to make up for missed classes.

Reading material
Lodish et al.: Molecular Cell Biology
Karp: Cell and Molecular Biology

Lectures
Practices
Seminars
1 Introduction of the topics. Types of inter- and intracellular signaling.
2 Second messengers. The cAMP-system in cholera, pertussis and tumors.
3 The phospholipase C-system. Intracellular calcium. Tumor promotion and the PKC-family.
4 Catalytic receptors and their pathological alterations in diseases.
5 Insulin signaling and its aspects in certain types of diabetes mellitus.
6 Cytokines. NFK-B and inflammation.
7 Integrin signaling and metastasis.
8 Stress signaling and the consequences of too much stress. Heatshock proteins in signaling.
9 Signaling of apoptosis and its alterations in disease.
10 Cell-cell and cell-matrix connections and their pathological relevance.
11 The role of steroids in signaling and in certain diseases.
12 Signaling of the neuromuscular junction and in synapses. Pathological aspects.
13 Signaling in development. Malformations.
14 Multiple-choice test.

Exam topics/questions
Multiple-choice Test

Participants
Dr. Ábrahám Hajnalka (ABHMAAO.PTE), Dr. Bátor Judit (BAIFAAO.PTE), Dr. Berta Gergely (BEGFADO.PTE), Dr. Mikó Éva (MIEFAAO.PTE), Dr. Palkovics Tamás (PATHAAO.PTE), Dr. Pap Marianna (PAMFAAO.PTE), Dr. Sebők Ágnes (SEASAAP.PTE), Dr. Wittmann István (WIILAAO.PTE), ifj. Dr. Sétáló György (SEGMAAO.PTE)
Capillary Electrophoresis

Course director: DR. FERENC KILÁR, professor
Institute of Bioanalysis

2 credit • midsession grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 –
Prerequisites: OAAOM1 completed

Topic

Conditions for acceptance of the semester
oral exam, maximum 2 absences

Making up for missed classes
According to the faculty rules.

Reading material

Lectures
1 Evolution of separation methods
   Dr. Kilár Ferenc
2 Evolution of separation methods
   Dr. Kilár Ferenc
3 Development of new electrophoretic methods
   Dr. Kilár Ferenc
4 Development of new electrophoretic methods
   Dr. Kilár Ferenc
5 Theory of electrophoresis
   Dr. Kilár Ferenc
6 Theory of electrophoresis
   Dr. Kilár Ferenc
7 Separation modes in electrophoresis
   Dr. Kilár Ferenc
8 Separation modes in electrophoresis
   Dr. Kilár Ferenc
9 Zone electrophoresis
   Dr. Kilár Ferenc
10 Zone electrophoresis
    Dr. Kilár Ferenc
11 Isoelectric focusing theory
    Páger Csilla
12 Isoelectric focusing theory
    Dr. Kilár Ferenc
13 IEF methodology, sandwich injection
    Páger Csilla
14 IEF methodology, sandwich injection
    Dr. Kilár Ferenc
15 IEF of proteins
    Páger Csilla
16 IEF of proteins
    Dr. Kilár Ferenc
17 Isotachophoresis
    Páger Csilla
18 Isotachophoresis
    Dr. Kilár Ferenc
19 Gel electrophoresis
    Dr. Kilár Ferenc
20 Gel electrophoresis
   Dr. Kilár Ferenc
21 Micellar electrokinetic chromatography
   Dr. Kilár Ferenc
22 Micellar electrokinetic chromatography
   Dr. Kilár Ferenc
23 Capillary electrochromatography
   Dr. Kilár Ferenc
24 Capillary electrochromatography
   Dr. Kilár Ferenc
25 Chiral separation
   Dr. Kilár Ferenc
26 Chiral separation
   Dr. Kilár Ferenc
27 Medical applications
   Dr. Kilár Ferenc
28 Medical applications
   Dr. Kilár Ferenc

Practices
Seminars
Exam topics/questions
Discussion of practical questions after home work.
Participants
OAFKEZ Biological Basics of Handwriting Analysis. Applications in the Medical Practice

Course director: Dr. István Kiss, associate professor
Department of Public Health Medicine

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester: 12 lectures + 0 practices + 2 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 30
Prerequisites: -

Topic
The handwriting may give information on the personality and state of mind of its writer. The course covers the most important areas of handwriting analysis: Formation and development of handwriting, psychological and biological factors of writing, main characteristics of handwriting, basics of handwriting analysis, applications and limitations of graphology.

Conditions for acceptance of the semester

Making up for missed classes

Reading material

Lectures
1. Introduction: History of graphology, main applications, its relation with other subjects.
   Dr. Kiss István
2. Neurophysiological basis of handwriting. Development of handwriting, its relation with the psychosocial development.
   Dr. Kiss István
   Dr. Kiss István
   Dr. Kiss István
5. Characteristics of handwriting II. (Binding, microstructural elements. Dynamics of handwriting.)
   Dr. Kiss István
   Dr. Kiss István

Practices

Seminars
1. Applied graphology.
2. Applied graphology

Exam topics/questions

Participants
Dr. Kiss István (KIIFAD.A.JPTE), Horváth-Sarródi Andrea Dr.
OAFN04 ANATOMICAL TERMINOLOGY
Course director: KATALIN FOGARASI, language teacher
Department of Languages for Specific Purposes

2 credit • midsemester grade • Optional module • spring semester • recommended semester: 2
Number of hours/semester:
0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.):
min. 3 – max. 25
Prerequisites: -

Topic
The course aims to mediate the basic anatomical terms supporting the studies of Anatomy.

Conditions for acceptance of the semester
Making up for missed classes

Reading material

Lectures
Practices
Seminars
1 Structure of anatomical terms.
2 Structure of anatomical terms.
3 Basic grammar of the anatomical terminology
4 Basic grammar of the anatomical terminology
5 Extremities 1. Functional terms pertaining to bones, muscles
6 Extremities 1. Functional terms pertaining to bones, muscles
7 Extremities 2. Terms pertaining to ligaments, tendons
8 Extremities 2. Terms pertaining to ligaments, tendons
9 Terminology pertaining to the skull
10 Terminology pertaining to the skull
11 Terminology pertaining to the structure of the digestive system
12 Terminology pertaining to the structure of the digestive system
13 Anatomical terms of the respiratory system
14 Anatomical terms of the respiratory system
15 Test paper 1.
16 Test paper 1.
17 Functional and anatomical terms concerning the structure of the heart and the circulatory system
18 Functional and anatomical terms concerning the structure of the heart and the circulatory system
19 Terminology of the urinary tract
20 Terminology of the urinary tract
21 Terminology pertaining to the female and male genital organs
22 Terminology pertaining to the female and male genital organs
23 Terms of sensory perception
24 Terms of sensory perception
25 Structure of the brain
26 Structure of the brain
27 Test paper 2.
28 Test paper 2.

Exam topics/questions
Participants
Fogarasi Katalin (FOKEAA.BJPTE), Hábel Gabriella, Ronczykné Berta Anikó (BEAAAI.BJPTE)
OAFN07  CLINICAL TERMINOLOGY

Course director: KATALIN FOGARASI, language teacher
Department of Languages for Specific Purposes

2 credit • midsemester grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 3 – max 25
Prerequisites: -

Topic
The course aims to mediate the basic clinical terms supporting the clinical studies.

Conditions for acceptance of the semester

Making up for missed classes

Reading material
Lectures
Practices
Seminars
1 Structure of clinical terms, synonymous Greek equivalents
2 Structure of clinical terms, synonymous Greek equivalents
3 Case reports in the field of gastroenterology
4 Case reports in the field of gastroenterology
5 Diagnoses in the field of pulmonology.
6 Diagnoses in the field of pulmonology.
7 Cardiology: Diagnostic methods, disorders
8 Cardiology: Diagnostic methods, disorders
9 Disorders of the circulatory system.
10 Disorders of the circulatory system.
11 Case reports and diagnoses in the field of haematology.
12 Case reports and diagnoses in the field of haematology.
13 Disorders and diagnostic methods in case reports in the field of nephrology.
14 Disorders and diagnostic methods in case reports in the field of nephrology.
15 Test paper 1.
16 Test paper 1.
17 Disorders of the urinary system on the basis of clinical diagnoses.
18 Disorders of the urinary system on the basis of clinical diagnoses.
19 Diagnostic methods, surgical interventions and disorders in the fields of gynaecology and andrology.
20 Diagnostic methods, surgical interventions and disorders in the fields of gynaecology and andrology.
21 Clinical terms pertaining to neurology and psychiatry and otorhinolaryngology.
22 Clinical terms pertaining to neurology and psychiatry and otorhinolaryngology.
23 Injuries of the extremities. Clinical terms of traumatology.
24 Injuries of the extremities. Clinical terms of traumatology.
25 Disorders of the endocrine system.
26 Disorders of the endocrine system.
27 Test paper 2.
28 Test paper 2.

Exam topics/questions

Participants
Fogarasi Katalin (FOKEAB.JPTE), Hábel Gabriella, Ronczykné Berta Anikó (BEAAAAL.BJPTE)
THE PLACEBO EFFECT

Course director: Tibor Szolcsányi, assistant professor
Department of Behavioural Sciences

2 credit • midsemester grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 30

Prerequisites: -

Topic
The use of placebo effect has been an inherent part of medicine for thousands of years, and in the recent decades it has become an inevitable element of medical research due to the introduction of placebo controlled clinical trials. In spite of this fact the research methodology to measure the effectiveness of placebo effect has been clarified only in the last 10-15 years. At the same time researches on the neurochemical mechanisms underlying the placebo effect have gained a new impetus. Currently, therefore, we have a much greater understanding of placebo effect in the context of evidence-based medicine than before, which raises new types of ethical questions as well. During the course we will examine the different aspects of the phenomenon of placebo effect, and the students will gain knowledge of the current research results on the field. The main topics of the course: the history of the use of placebo therapies, the role of placebo effect in medical research, the psycho-social factors that are able to induce placebo effect, neurochemical mechanisms underlying the placebo effect, the ethical implications of the use of placebo effect in medical treatments.

Conditions for acceptance of the semester
written test

Making up for missed classes
According to the Code of Studies and Examinations.

Reading material
Compulsory:
Franklin G. Miller; Luna Colloca; Ted J. Kaptchuk, The placebo effect: illness and interpersonal healing, Perspect Biol Med. 2009; 52(4)
Damien G. Finniss; Ted J. Kaptchuk; Franklin G. Miller; Fabrizio Benedetti, Biological, clinical, and ethical advances of placebo effects, Lancet 2010; 375; 686-695
Franklin G. Miller; Donald L. Rosenstein, The nature and power of the placebo effect, Journal of Clinical Epidemiology 59 (2006); 331-335
Fabrizio Benedetti, Mechanisms of placebo and placebo-related effects across diseases and treatments, Annual Review of Pharmacology and Toxicology, Vol.48; 2008; 33-60.
Jozien M. Bensing; William Verheul, The silent healer: The role of communication in placebo effects, Patient Education and Counseling 80 (2010); 293-299

Suggested:
Fabrizio Benedetti, Placebo Effect, Oxford University Press, Oxford, 2009

Lectures
Practices

Seminars
1 Introduction, definitions of placebo effect
2 The use of placebo effect in the history of medicine
3 The use of placebo effect in the context of medical research: the introduction of randomized placebo controlled clinical trials and its consequences
4 The methodological and ethical challenges of placebo research
5 The main forms of placebo effect (expectancy based / classical conditioning / affective modulation) and their effectiveness in different diseases
6 The neurochemistry of placebo effect: placebo analgesia
7 The neurochemistry of placebo effect: the cardiovascular and the respiratory system, immune response and hormone secretion, Parkinson disease
8 The neurochemistry of placebo effect: further results
9 An overview of the psycho-social factors that are able to induce placebo effect
10 The anthropological and evolutionary background of placebo effect
11 Pain management through psychological interventions and placebo analgesia
12 Ethical implications: how to enhance the placebo effect through improving the physician-patient relationship
13 Ethical implications: the possible role of complemementer medicine in the enhancement of placebo effect
14 Written test
Exam topics/questions
Participants
Szolcsányi T ibor (SZTAAJ.B.JPTE)
UP MS General Medicine major – Elective and Optional subjects – academic year of 2011/2012

**OAFSMP PATHOLOGY OF THE CELL NUCLEUS**

Course director: **DR. LÁSZLÓ KOMÁROMY**, associate professor

**Department of Medical Biology**

- 2 credit
- • midsemester grade
- • Optional module
- • spring semester
- • recommended semester: 2

**Number of hours/semester:**

- 28 lectures + 0 practices + 0 seminars = total of 28 hours

**Headcount limitations (min-max.):**

- min. 1 –

**Prerequisites:**

- OAAMB1 completed

**Topic**

The main significance of this course to demonstrate a basic knowledge of cell pathology which is giving fundamental information for preclinical and clinical subjects. The other goal is to demonstrate the results of ultrastructural morphology and molecular biology at cell-pathological level. The course is discussing the functional-morphological changes and alterations of cell nucleus components in different pathological conditions (including the effect of therapeutic procedures). The changes and alterations are estimated as a results of diseases or experimental pathological procedures and methods. The functional-morphological changes are estimated and analyzed on the basis of molecular biological processes. The lectures are summarizing in short the main changes of cytoplasmic structures in the different pathological conditions. The course pays attention to functional morphological changes appearing in the tumor cells especially.

**Conditions for acceptance of the semester**

- 30% absences are allowed and successful exam.

**Making up for missed classes**

- None.

**Reading material**

- Ghadially, F.N.: Ultrastructural Pathology of the Cell and Matrix
- Constantinides, P.: Ultrastructural Pathology
- Cooper, G.M.: The Cell. A Molecular Approach
- Szeberényi J.: Experiments in Molecular Cell Biology
- Relevant publications (given during the course) and handouts of lectures.

**Lectures**

   Dr. Komáromy László
   Dr. Komáromy László
   Dr. Komáromy László
   Dr. Komáromy László
5. Ultrastructure of nuclear periphery 1.
   Dr. Komáromy László
   Dr. Komáromy László
7. Protein import to the cell nucleus (regulation and troubles) 1.
   Dr. Komáromy László
8. Protein import to the cell nucleus (regulation and troubles) 2.
   Dr. Komáromy László
9. RNA export to cytoplasm (regulation, troubles) 1.
   Dr. Komáromy László
10. RNA export to cytoplasm (regulation, troubles) 2.
    Dr. Komáromy László
    Dr. Komáromy László
    Dr. Komáromy László
13. Changes of chromatin structures in different pathological conditions 1.
    Dr. Komáromy László
14. Changes of chromatin structures in different pathological conditions 2.
    Dr. Komáromy László
15 Semester test 1.
  Dr. Komáromy László
16 Semester test 2.
  Dr. Komáromy László
17 Alterations of nuclear matrix 1.
  Dr. Komáromy László
18 Alterations of nuclear matrix 2.
  Dr. Komáromy László
19 Changes and alterations in structure and function of nucleoli in different pathological conditions 1.
  Dr. Komáromy László
20 Changes and alterations in structure and function of nucleoli in different pathological conditions 2.
  Dr. Komáromy László
21 Effects of antimetabolites and cytostatic molecules on the nuclear and nucleolar structures 1.
  Dr. Komáromy László
22 Effects of antimetabolites and cytostatic molecules on the nuclear and nucleolar structures 2.
  Dr. Komáromy László
23 Virus induced alterations in the cell nucleus 1.
  Dr. Komáromy László
24 Virus induced alterations in the cell nucleus 2.
  Dr. Komáromy László
25 Ultrastructure of apoptotic cells 1.
  Dr. Komáromy László
26 Ultrastructure of apoptotic cells 2.
  Dr. Komáromy László
27 Final test 1.
  Dr. Komáromy László
28 Final test 2.
  Dr. Komáromy László

Practices

Seminars

Exam topics/questions
Multiple-choice test.

Participants
OAFSZ2  ADVANCED-LEVEL WORD PROCESSING

Course director: DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis

1 credit • midterm grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 14 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 1 – max. 10

Prerequisites: -

Topic
Methods and tools for creating more complex documents for presenting your scientific work and results (thesis, grant applications, scientific papers, ...) by the PC.

Conditions for acceptance of the semester
Active participation on the classes

Making up for missed classes
one extra class

Reading material
handouts

Lectures

Practices
1-14: Solve the tasks of the given written piece of work (diploma-work grant application scientific paper ...). The most likely tasks are: tables, figures and diagrams, using styles. Also: chapters and sub-chapters, page numbers, header and footer, footnote, contents.
7 Some more complex tools: using templates, macro, creating reference list, ...

Seminars

Exam topics/questions
Activity and a written piece of work based on all topics and fields of the course.

Participants
Dr. Póó László (POLGABO.PTE)
# Nutrition and Cancer

**Course director:** Dr. István Ember, professor

**Department of Public Health Medicine**

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Optional module • spring semester • recommended semester: 2</th>
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**Number of hours/semester:** 28 lectures + 0 practices + 0 seminars = total of 28 hours

**Headcount limitations (min-max.):** min 5 – max. 30

**Prerequisites:** -

## Topic

Nutrition takes an important part in the formation of several types of cancer. Approximately 35% of human cancers is attributed to nutrition factors. The importance of these factors and the way of their action is discussed during the course. After the theoretical introduction the human epidemiological results are interpreted and practical pieces of advice are given for healthy and carciopreventive diet.

The primary prevention is the most effective method to prevent cancers. The possible cancer preventive methods in nutrition will be demonstrated for the students during the lectures.

### Conditions for acceptance of the semester

Absence of 2 x 2 hours is acceptable.

In case of missing more than 30% of the lectures the semester cannot be accepted.

During the course more tests has to be done. The mean of the notes will give the progress grade.

### Making up for missed classes

### Reading material

#### Lectures

1. The multistep model of carcinogenesis. Possibilities for cancer prevention
   Dr. Ember István
2. Epidemiology of cancers
   Dr. Kiss István
3. The role of energy, protein, carbohydrate intake in carcinogenesis.
   Dr. Ember István
4. The role of fat intake in carcinogenesis.
   Dr. Kiss István
5. Alcohol and cancers The role of micro-nutrients in cancer formation
   Dr. Ember István
6. Food pollutants and food additives
   Dr. Kiss István
7. Genetically modified foods
   Dr. Kiss István
8. Anticarcinogenic compounds in foods
   Dr. Ember István
9. Compounds of plant origin and their role in carcinogenesis
   Dr. Ember István
10. The role of drinking water in carcinogenesis
    Dr. Varga Csaba
11. The relationship between nutrition and cancers I.
    Dr. Gombos Katalin
12. The relationship between nutrition and cancers II.
    Dr. Gombos Katalin
13. The role of kitchen technology in the formation of cancers
    Dr. Ember István
14. Dietary recommendations
    Dr. Ember István

#### Practices

#### Seminars
Exam topics/questions
Questions for the retake-exam:

1. Epidemiology of cancers
2. Multistep model of carcinogenesis
3. The role of energy intake in the formation of cancers
4. The relationship between fat intake and carcinogenesis
5. The relationship between protein and carbohydrate intake and carcinogenesis
6. The relationship between alcohol consumption and carcinogenesis
7. Vitamins, trace elements and carcinogenesis
8. Food additives and cancer formation
9. Phytochemicals’ role in cancer formation and cancer prevention
10. Anticarcinogenic compounds
11. Nutrition and colorectal carcinoma
12. Nutrition and gastric cancer
13. Nutrition and lung cancer
14. Nutrition and oral cavity cancer
15. Nutrition and breast cancer

Participants
OAFVB2  HOW TO TAKE THE EXAM IN MOLECULAR CELL BIOLOGY? 2
Course director:  DR. JÓZSEF SZEBERÉNYI, professor
Department of Medical Biology

1 credit • midssemester grade • Optional module • spring semester • recommended semester: 2

Number of hours/semester:  0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.):  min. 5 – max. 80
Prerequisites:  -

**Topic**
The objective of this course is to imitate the oral exam situation of Molecular Cell Biology (MCB) in a small-group-discussion setting. The list of exam question of MCB will be followed during the course: each time 4-5 students of the 20-25 member class will be examined with one question for each examinee. The examiner is one of the instructors/professors of the Department who conducts and grades the examination the same way as on „real” exams. All the examiners of the Department will be involved, in a rotation system. The aim of the course is to make students familiar with the stressful atmosphere of oral exams. Only students ready to be exposed to the exam situation week-after-week are invited to take this course.

**Conditions for acceptance of the semester**
The grade is determined by continuous performance evaluation. Maximum absences: 4.

**Making up for missed classes**
No possibility to make up for missed classes.

**Reading material**
József Szeberényi-László Komáromy: Molecular Cell Biology Syllabus

**Lectures**

**Practices**

**Seminars**

1  Orientation
2  Exam questions 58-60, L11
3  Exam questions 61-64
4  Exam questions 65-67, L12
5  Exam questions 68-70, L13
6  Exam questions 71-73, L14
7  Exam questions 74-76, L15
8  Exam questions 77-79, L16
9  Exam questions 80-82, L17
10 Exam questions 83-84, L18
11 Exam questions 85-87, L19
12 Exam questions 88-91
13 Exam questions 92-94, L20
14 Exam questions 95-97

**Exam topics/questions**

**Participants**
Dr. Pap Marianna (PAMFAAO.PTE), Dr. Szeberényi József (SZJGACO.PTE), ifj. Dr. Sétáló György (SEGMAAO.PTE)
FASE PRESENTATION OF CASE REPORTS IN ENGLISH

Course director: DR. VILMOS WARTA, language teacher
Department of Languages for Specific Purposes

2 credit • midterm grade • Optional module • both semesters semester • recommended semester: 3

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 3 – max. 100
Prerequisites: -

Topic
Preparing, understanding and giving biomedical case report presentations in English. Preparing for presentations in Student Research Association in English.

Conditions for acceptance of the semester
Participation in practices is obligatory. Absences exceeding 15% but below 25% of the total number of contact hours can be excused by the group tutor. In case absences exceed 25% of the total number of contact hours the course must be regarded as uncompleted.

Making up for missed classes
To be discussed with the course tutor in each individual case.

Reading material
Mark Powel (1996) Presenting in English
Handout materials

Lectures
1 Introduction
   Dr. Warta Vilmos
2 Introduction
   Dr. Warta Vilmos
3 Communicative purpose and structure of case reports
   Dr. Warta Vilmos
4 Communicative purpose and structure of case reports
   Dr. Warta Vilmos
5 Verbal tenses in case reports
   Dr. Warta Vilmos
6 Verbal tenses in case reports
   Dr. Warta Vilmos
7 Impersonalisation
   Dr. Warta Vilmos
8 Impersonalisation
   Dr. Warta Vilmos
9 Modality and politeness strategies
   Dr. Warta Vilmos
10 Modality and politeness strategies
   Dr. Warta Vilmos
11 Lexis and terminology
   Dr. Warta Vilmos
12 Lexis and terminology
   Dr. Warta Vilmos
13 Presentation techniques
   Dr. Warta Vilmos
14 Presentation techniques
   Dr. Warta Vilmos
15 Presentation of case report 1
   Dr. Warta Vilmos
16 Presentation of case report 1
   Dr. Warta Vilmos
17 Presentation of case report 2
   Dr. Warta Vilmos
18 Presentation of case report 2
   Dr. Warta Vilmos
19 Presentation of case report 3
Dr. Warta Vilmos

20 Presentation of case report 3
Dr. Warta Vilmos

21 Presentation of case report 4
Dr. Warta Vilmos

22 Presentation of case report 4
Dr. Warta Vilmos

23 Presentation of case report 5
Dr. Warta Vilmos

24 Presentation of case report 5
Dr. Warta Vilmos

25 Consolidation
Dr. Warta Vilmos

26 Consolidation
Dr. Warta Vilmos

27 Course evaluation
Dr. Warta Vilmos

28 Course evaluation
Dr. Warta Vilmos

Practices

Seminars

Exam topics/questions
1) one 10-minute power point presentation in English
2) one essay about the theory of writing and presenting biomedical case reports

Participants
OAFETA  HUMAN NUTRITION AND DIETETICS
Course director: DR. ZSUZSANNA VÉRTES, associate professor
Department of Physiology

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 3
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 3 – max. 40
Prerequisites: OAAMB2 completed

Topic
Medical students may find that this course will help them to coordinate their knowledge of the biological, physiological and clinical aspects of human nutrition.

The lectures will include the following topics:
Physiology of nutrition, general description of the foods most commonly eaten by man. Diet and physiological status (pregnancy, lactation, childhood, old age, exercise, sport and athletics). Clinical nutrition.

The course will be divided into 5 parts:
Part I gives an account of the physiology of nutrition
Part II gives a general description of the foods most commonly eaten by man
Part III describes those diseases that are known to be primarily due to faulty nutrition
Part IV deals with the role of defective diets in contributing to the onset of general diseases which are not primarily nutritional in origin
Part V deals briefly with the modifications necessary in normal diets to meet special circumstances of pregnancy, lactation, childhood, athletic training.

Conditions for acceptance of the semester
Oral and written exams.

Making up for missed classes
as mentioned above

Reading material
Garrow James: Human nutrition and dietetics

Lectures
1 Energy metabolism
   Dr. Vértes Zsuzsanna
2 Energy balance
   Dr. Vértes Zsuzsanna
3 Digestion, absorption
   Dr. Vértes Zsuzsanna
4 Digestion, absorption
   Dr. Vértes Zsuzsanna
5 Carbohydrates
   Dr. Vértes Zsuzsanna
6 Carbohydrates
   Dr. Vértes Zsuzsanna
7 Fats
   Dr. Vértes Zsuzsanna
8 Fats
   Dr. Vértes Zsuzsanna
9 Protein
   Dr. Vértes Zsuzsanna
10 Protein
   Dr. Vértes Zsuzsanna
11 Vitamins
   Dr. Vértes Zsuzsanna
12 Vitamins
   Dr. Vértes Zsuzsanna
13 Minerals
   Dr. Vértes Zsuzsanna
14 Minerals
   Dr. Vértes Zsuzsanna
15 Water and body fluids  
   Dr. Vértes Zsuzsanna
16 Alcohol  
   Dr. Vértes Zsuzsanna
17 Nutrition during pregnancy and lactation  
   Dr. Vértes Zsuzsanna
18 Nutrition for growth and development  
   Dr. Vértes Zsuzsanna
19 Nutrition and physical fitness  
   Dr. Vértes Zsuzsanna
20 Nutrition and physical fitness  
   Dr. Vértes Zsuzsanna
21 Nutrition and weight management  
   Dr. Vértes Zsuzsanna
22 Eating disorders  
   Dr. Vértes Zsuzsanna
23 Nutrition and diabetes mellitus  
   Dr. Vértes Zsuzsanna
24 Nutrition and osteoporosis  
   Dr. Vértes Zsuzsanna
25 Overweight and obesity  
   Dr. Vértes Zsuzsanna
26 Overweight and obesity  
   Dr. Vértes Zsuzsanna
27 Exam  
   Dr. Vértes Zsuzsanna
28 Exam  
   Dr. Vértes Zsuzsanna

Practices

Seminars

Exam topics/questions

written exam

Participants
GENETICALLY MODIFIED ORGANISMS AND OUR HEALTH

Course director: DR. ZOLTÁN GYÖNGYI, assistant professor
Department of Public Health Medicine

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 3

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 3 –
Prerequisites: OAAMB2 completed

Topic
The application of genetically modified organisms (GMOs) gains more and more ground in food industry. Over the direct health effect, they have an impact on human economy and health modifying natural environment. The topic provokes social debate, in which, in lack of information, delusions also appear.
The goal of the education is that students receive impartial knowledge of the role of GMOs in our life and their possible harmful impact on our health.
During the education students receive a knowledge of molecular background of production of GMOs, their role in agriculture, the appeared cases and possible health risks, their occurrence in foodstuffs, medical applications, tests, regulations, authorization, economical and social impacts.

Conditions for acceptance of the semester
Attendance on lectures with maximum two absences.

Making up for missed classes
1. The reasons of the appearance of the GMOs, overview
2. Impact of GMOs on nature environment and eco farms
3. Molecular basics of genetically modifications
4. The cause of deaths because of GM food
5. Possible harmful effect of GMOs to health
6. Prevention of harmful effect of GMOs
7. Occurrence of GMOs in foodstuffs, food tests
8. Authorization of GMOs on economy, social debate, flow of information
9. Medical application of GMOs

Reading material

Lectures
1 The appearance of genetically modified organisms (GMOs)
   Dr. Gyöngyi Zoltán
2 Role of GMOs in agriculture
   Dr. Gyöngyi Zoltán
3 Basics of genetically modification I.
   Dr. Gyöngyi Zoltán
4 Basics of genetically modification II.
   Dr. Gyöngyi Zoltán
5 Possible harmful effect of GMOs to health
   Dr. Gyöngyi Zoltán
6 Background of deaths caused by GM food
   Dr. Gyöngyi Zoltán
7 Prevention of GMO induced health hazard
   Dr. Gyöngyi Zoltán
8 Genetically modification in medicine
   Dr. Gyöngyi Zoltán
9 GMOs in food I.
   Dr. Horváth Tibor
10 GMOs in food II.
   Dr. Horváth Tibor
11 Authorization of GMOs
   Dr. Gyöngyi Zoltán
12 Regulation of application
   Dr. Gyöngyi Zoltán
13 Impact of GMOs on nature environment and eco farms
   Dr. Gyöngyi Zoltán

14 Effect of GM business on economy, social debates and the flow of information
   Dr. Gyöngyi Zoltán

Practices

Seminars

Exam topics/questions
1. Reasons, why GMOs appeared
2. The role of GMOs in the agriculture
3. Impact of GMOs on nature environment and eco farms
4. Molecular basics of genetically modifications
5. The cause of deaths because of GM food
6. Possible harmful effect of GMOs to health
7. Prevention of harmful effect of GMOs
8. Occurrence of GMOs in foodstuffs, food tests
9. Authorization of GMOs on economy, social debate, flow of information
   Medical application of GMOs

Participants
OAFGSA  BASICS OF MEDICAL EQUIPMENTS

Course director: JUDIT KOVÁCS-KELEMEN, nursing director
Head Nurse Department

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 3

Number of hours/semester: 7 lectures + 7 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 200
Prerequisites: -

Topic
The aims of the course to give basic knowledge about the next topics: how can use and prescribing medical equipments.

Conditions for acceptance of the semester
15% absence.
Writing a test, that must be better than 50%.

Making up for missed classes
In the next year.

Reading material
Lecture materials:
http://aok.pte.hu/Departments/Central Nursing Services/Documents/BME

CooSpace

Lectures
1 Definition and classification of medical equipments
   Kovácsné Kósa Judit
2 Indication of medical equipments
   Kovácsné Kósa Judit
3 Quality requirements for medical equipments
   Kovácsné Kósa Judit
4 Proper use of medical equipments; basic hygiene rules
   Kovácsné Kósa Judit
5 Basics of social insurance
   Kovácsné Kósa Judit
6 Medical equipments - close to the body
   Kovácsné Kósa Judit
7 Medical equipments - remote from the body
   Kovácsné Kósa Judit

Practices
1 Application of medical equipments - choose with patient
2 Compliance of medical equipments
3 Taking of measurements - the rules
4 Types of medical equipments in the practice I. - musculoskeletal disorders and skin
5 Types of medical equipments in the practice II. - breast disease and respiratory diseases
6 Types of medical equipments in the practice III. - metabolic diseases, circulatory diseases and painkilling
7 Types of medical equipments in the practice IV. - gastro - intestinal diseases, diseases of urinary and genital system

Seminars

Exam topics/questions

Participants
Kovácsné Kósa Judit (SOKDAB.F.JPTE)
OAFH31 Hungarian for Foreigners B1 - Threshold Hungarian - Part 1

Course director: Katalin Pelcz, language teacher
International Studies Center

2 credit • midsemester grade • Optional module • both semesters • semester • recommended semester: 3

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours

Headcount limitations (min-max.): min. 4 – max. 12

Prerequisites: OAFH32 parallel + OAFH21 completed

Topic
The Threshold Hungarian course focuses on speaking, listening, writing and reading skills and deepens generally grammatical and oral skills. Has enough language to get by, with sufficient vocabulary to express him/herself with some hesitation and circumlocutions on topics such as family, hobbies and interests, work, travel, and current events.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted.

Reading material
Beszélsz magyarul? Tankönyv 2.

Lectures
Practices
Seminars
- Mit nézzünk a tévében? (téléműsor, Mit csináljunk?, Inkább maradjunk itthon!, receptklub, a kulisszák mögött)
- Álom és valóság (Míről álmodunk?, Mit tennél?, Mit tettél volna?, önéletrajz, egy kis udvariasság)
- Élet a városban (költszés, névutók: honnan?, hol?, hová?, lakásvásárlás)
- A sport világa (kézilabda, Egy soha el nem múló élmény, a riporter közvetít, olimpia)
- Környezetvédelem (környezetvédelmi akciók, Greenpeace, környezetszenyezés)

Exam topics/questions
1. Mit nézzünk a tévében? (téléműsor, Mit csináljunk?, Inkább maradjunk itthon!, receptklub, a kulisszák mögött)
2. Álom és valóság (Míről álmodunk?, Mit tennél?, Mit tettél volna?, önéletrajz, egy kis udvariasság)
3. Élet a városban (költszés, névutók: honnan?, hol?, hová?, lakásvásárlás)
4. A sport világa (kézilabda, Egy soha el nem múló élmény, a riporter közvetít, olimpia)
5. Környezetvédelem (környezetvédelmi akciók, Greenpeace, környezetszenyezés)

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
OAFH32  HUNGARIAN FOR FOREIGNERS B1 - THRESHOLD HUNGARIAN - PART 2

Course director: KATALIN PELCZ, language teacher
International Studies Center

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 3

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 4 – max. 12
Prerequisites: OAFH31 parallel + OAFH22 completed

Topic
The Threshold Hungarian course focuses on speaking, listening, writing and reading skills and deepens generally grammatical and oral skills. Has enough language to get by, with sufficient vocabulary to express him/ herself with some hesitation and circumlocutions on topics such as family, hobbies and interests, work, travel, and current events.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted.

Reading material
Beszélsz magyarul? Tankönyv 2.

Lectures
Practices
Seminars
- Mit nézzünk a tévében? (tévéműsor, Mit csináljunk?, Inkább maradjunk itthon!, receptklub, a kulisszák mögött)
- Álom és valóság (Miröl álmodunk?, Mit tennél?, Mit tettél volna?, önéltrajz, egy kis udvariasság)
- Élet a városban (költözés, névutók: honnan?, hol?, hová?, lakásvasárlás)
- A sport világa (kézilabda, Egy soha el nem múló élmény, a riporter közvetít, olimpia)
- Környezetvédelem (környezetvédelmi akciók, Greenpeace, környezetszennyezés)

Exam topics/questions
1. Mit nézzünk a tévében? (tévéműsor, Mit csináljunk?, Inkább maradjunk itthon!, receptklub, a kulisszák mögött)
2. Álom és valóság (Miröl álmodunk?, Mit tennél?, Mit tettél volna?, önéltrajz, egy kis udvariasság)
3. Élet a városban (költözés, névutók: honnan?, hol?, hová?, lakásvasárlás)
4. A sport világa (kézilabda, Egy soha el nem múló élmény, a riporter közvetít, olimpia)
5. Környezetvédelem (környezetvédelmi akciók, Greenpeace, környezetszennyezés)

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
**OAFHAK  THE CHEMISTRY OF DEATH**

*Course director:*  
**DR. LÁSZLÓ MÁRK**, assistant professor  
Department of Biochemistry and Medical Chemistry

<table>
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<th>1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 3</th>
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<tr>
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<td>14 lectures + 0 practices + 0 seminars = total of 14 hours</td>
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<td><strong>Prerequisites:</strong></td>
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**Topic**

Death is not an unaltering state, and far from being an inert mass, the dead body is, under normal circumstances, subject to many complex and, often enough, only partly investigated changes arising from intrinsic as well as extrinsic causes which bring about quite substantial chemical and morphological alterations of the tissues.

Under natural conditions an initially intact body commences to decompose immediately after death, the aim of this course is the integration of these decomposition processes into medical and chemical, biochemical sciences.

**Topics:**
- Introduction to toxicology
- Enzymatic reactions
- The last minutes of life
- Postmortem changes in general
- Postmortem enzymal changes
- Postmortem non-enzymal chemical changes
- Postmortem chemical changes (short term)
- Postmortem chemical changes (long term)
- Special chemical processes, mummification
- Pathological observations
- Traumatic changes
- Forensic and paleoanthropological methods
- Dating methods

**Conditions for acceptance of the semester**

Written exam. Max. absences: 20%.

**Making up for missed classes**

Not possible.

**Reading material**

Lecture slides and notes.

Evans: The Chemistry of Death. 1963

Stein: Physical Anthropology. 1976

**Lectures**

1. Introduction. Basics of toxicology  
   Dr. Máriászló László
2. Introduction to biochemistry and enzymatic alterations.  
   Dr. Máriászló László
3. Chemical processes of the last few minutes of the life.  
   Dr. Máriászló László
4. Chemical processes of the last few minutes of the life.  
   Dr. Máriászló László
5. General postmortem changes.  
   Dr. Máriászló László
6. General postmortem changes.  
   Dr. Máriászló László
7. Short term postmortem changes.  
   Dr. Máriászló László
8. Short term postmortem changes.  
   Dr. Máriászló László
9. Chemical alterations of the first hours.  
   Dr. Máriászló László
10. Chemical alterations of the first hours.  
    Dr. Máriászló László
11 Decomposition processes.
   Dr. Márk László
12 Decomposition processes.
   Dr. Márk László
13 Special chemical modifications, mummification.
   Dr. Márk László
14 Pathological and traumatic investigations.
   Dr. Márk László

Practices

Seminars

Exam topics/questions
- Introduction to toxicology
- Enzymatic reactions
- The last minutes of life
- Postmortem changes in general
- Postmortem enzymal changes
- Postmortem non-enzymal chemical changes
- Postmortem chemical changes (short term)
- Postmortem chemical changes (long term)
- Special chemical processes, mummification
- Pathological observations
- Traumatic changes
- Forensic and paleoanthropological methods
- Dating methods

Participants
WHAT ARE MISSING FROM THE REGULAR HISTOLOGY TEACHING

Course director: DR. RITA JÓZSA, professor
Department of Anatomy

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 3

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5
Prerequisites: OAASF1 completed

Topic
The course offers broader knowledge from histology, additional to the obligatory course, with the assistance of experienced teachers and clinicians of the Medical Faculty. The aim of the course: To get a deeper understanding of the morphology, ultrastructure and function of different structures of the organs, to get insight into methodological processes.

Conditions for acceptance of the semester
The acceptance of the semester: The semester score (1 to 5) will be based on the quality of 2 written exams. To receive the credit, at least score 2 (satisfactory) should be received and the student must participate in more than 70 % of the practices.

Making up for missed classes

Reading material
http://an-server.pote.hu

Lectures
1. Microscopic slides in 3 dimensional aspect
   Dr. Horváth Judit
   Dr. Ábrahám Hajnalka
3. The structures of the urinary system
   Dr. Tamás Andrea
4. Biological rhythms. The biological clock and the pineal gland
   Dr. Mess Béla
5. The structure of the heart: the morphological characteristics of the cardiac valves, the myocardium and the conducting system
   Dr. Halmosi Róbert
6. The skin, as an organ: highly specialized cells of the epidermis
   Dr. Battyáni Zita
7. The characteristics of the gastrointestinal tract. Three-dimensional organization of the intestinal villi and the hepatic lobules.
   Dr. Józsa Rita
8. Bone marrow: the diversity of cells, mononuclear line. Stem cells in focus.
   Dr. Losonczy Hajna
9. Lymphoid system: marker-specificity of the lymphocytes
   Dr. Németh Péter
    Dr. Tóth Pál
11. Structures of the liver.
    Dr. Józsa Rita
    Dr. Gaszner Balázs
13. Life or death? The apoptosis.
    Dr. Reglodi Dóra
14. The reproductive cycle: maturation of follicles. What determines the selection of the follicle during maturation
    Dr. Kovács Magdolna

Practices
Seminars
Exam topics/questions
written test, questions are based on the materials of the lectures

Participants
OAFMBK MODERN BIOPHYSICAL RESEARCH METHODS
Course director: DR. GÁBOR HILD, associate professor
Department of Biophysics

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 3

Number of hours/semester: 0 lectures + 14 practices + 14 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 25
Prerequisites: OAABI2 completed

Topic
The course addresses the physics and biophysics-based research methods employed in life sciences. The practicals will familiarize the students with the methods, including a hands-on experience with the instruments.

Conditions for acceptance of the semester
Maximum of three absences either from the seminars or practicals.

Making up for missed classes

Reading material

Lectures

Practices
1 Absorption photometry
2 Fluorescence spectroscopy
3 Fluorescence spectroscopic applications (FRET, quenching, anisotropy)
4 Transient kinetic methods
5 Flow cytometry
6 Fluorescence and confocal microscopy
7 ESR and NMR spectroscopy
8 Differential scanning calorimetry

Seminars
1 Foundations of spectroscopic methods
2 Absorption photometry
3 Raman, infrared, CD, FTIR spectroscopy
4 Fluorescence spectroscopy
5 Fluorescence spectroscopic methods (FRET, quenching, anisotropy)
6 Transient kinetic methods
7 Flow cytometry
8 Fluorescence and confocal microscopy
9 ESR and NMR spectroscopy
10 Molecular structure determination by X-ray diffraction
11 Atomic force microscopy
12 Differential scanning calorimetry
13 Thermogravimetry. Combination of thermoanalytical methods with other techniques
14 Test writing

Exam topics/questions
Can be found on the departmental website (http://biofizika.aok.pte.hu)

Participants
Barkó Szilvia (BASFAA.T.JPTE), Dr. Hild Gábor (HIGMAAO.PTE), Dr. Talián Csaba Gábor (TACRAAO.PTE), Huber Tamás (HUTEAB.T.JPTE), Kardos Roland (KARFAB.T.JPTE), Szatmári Dévid Zoltán (SZDHAAT.PTE), Ujfalusi Zoltán (UJZDAA.T.JPTE), Vig Andrea Teréz (VIAFAAO.PTE)
OAFMC1 METHODS IN MOLECULAR CELL BIOLOGY I.

Course director: DR. MARIANNA PAP, associate professor
Department of Medical Biology

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 3
Number of hours/semester: 10 lectures + 18 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 1 – max. 20
Prerequisites: OAAMB2 completed

Topic
The main objective of the course to improve theoretical knowledge and practical skills of students. The course covers the most important techniques used in molecular cell biology. On the small-group discussions theoretical background of molecular cell biology methods are described and discussed. On the practicals students perform basic experiments used in Department of Medical Biology.

Conditions for acceptance of the semester
Making up for missed classes
individually discussed

Reading material
handouts prepared by the Medical Biology Department

Lectures
1 Tissue culture methods (cell culturing, harvesting, counting, freezing procedures)
   Dr. Pap Marianna
2 Tissue culture methods (cell culturing, harvesting, counting, freezing procedures)
   Dr. Pap Marianna
3 Vectors used in molecular cell biology, types of transformation, stable and transient transfection
   Dr. Pap Marianna
4 Vectors used in molecular cell biology, types of transformation, stable and transient transfection
   Dr. Pap Marianna
5 Analysis of DNA I. (DNA isolation, types of gelelectrophoresis)
   Dr. Pap Marianna
6 Analysis of DNA I. (DNA isolation, types of gelelectrophoresis)
   Dr. Pap Marianna
7 Analysis of DNA II. (enzimatical manipulation of DNA)
   Dr. Pap Marianna
8 Analysis of DNA II. (enzimatical manipulation of DNA)
   Dr. Pap Marianna
9 Analysis of DNA III. (microchip analysis, in vitro mutagenesis, analysis of DNA-protein interactions)
   Dr. Pap Marianna
10 Analysis of DNA III. (microchip analysis, in vitro mutagenesis, analysis of DNA-protein interactions)
   Dr. Pap Marianna

Practices
1 Tissue culture methods - demonstration (cell culturing, harvesting, counting, freezing procedures)
2 Tissue culture methods - demonstration (cell culturing, harvesting, counting, freezing procedures)
3 Tissue culture methods - demonstration (cell culturing, harvesting, counting, freezing procedures)
4 Tissue culture methods (plate cells)
5 Tissue culture methods (harvesting cells)
6 Tissue culture methods (harvesting cells)
7 Tissue culture methods (freezing cells)
8 Tissue culture methods (freezing cells)
9 Tissue culture methods (counting cells)
10 Tissue culture methods (counting cells)
11 Tissue culture methods (counting cells)
12 Tissue culture methods (counting cells)
13 Transient transfection of tissue culture cells using a green fluorescent protein expressing plasmid (counting and plate cells)
14 Transient transfection of tissue culture cells using a green fluorescent protein expressing plasmid (counting and plate cells)
15 Transient transfection of tissue culture cells using a green fluorescent protein expressing plasmid (transfection)
16 Transient transfection of tissue culture cells using a green fluorescent protein expressing plasmid (transfection)
17 Transient transfection of tissue culture cells using a green fluorescent protein expressing plasmid (fixation, staining of nuclei)
18 Transient transfection of tissue culture cells using a green fluorescent protein expressing plasmid (check the expression by confocal laser scanning microscopy)

Seminars

Exam topics/questions

Participants
Dr. Balogh András (BAAFACE.PTE), Dr. Pap Marianna (PAMFAAO.PTE)
| **Course director:** | **Dr. BALOGH, PÉTER, Außerordentlicher Professor**  
Undergraduate Research |
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<tr>
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**Topic**

The aim of this subject is to nurture and promote the activity of students sufficiently motivated to perform biomedical project research. The students may progressively enroll to four parts in four separate semesters, for the total credit value of 8. For acknowledging the 3rd and 4th (elective) parts, the student must train research student novice(s).

The subject’s administrator is the actual Chairman of the Students’ Research Society (SRS) of the Faculty of Medicine.

**Conditions for acceptance of the semester**

To enroll this course a registered SRS membership is mandatory. Acknowledging the course requires (a) either first-author presentation of work at a Students’ conference (UP or elsewhere) or Dean’s assay, or presentation at any professional conference relevant to the research field, or (b) progress report on the work performed or demonstrating expertise at the methodology employed before the Tutor and the Chairman of SRS. Grades will be accorded corresponding to the criteria set out in the Rules and Regulations of SRS.

**Making up for missed classes**

Not applicable.

**Reading material**

Lectures

Practices

Research

Seminars

Exam topics/questions

Participants

Dr. Balogh Péter (BAPOAGP.PTE)
OAFTSS  MEDICAL APPLICATIONS OF MASS SPECTROMETRY

Course director:  Dr. LÁSZLÓ MÁRK, assistant professor  
Department of Biochemistry and Medical Chemistry

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 3

Number of hours/semester:  24 lectures + 0 practices + 0 seminars = total of 24 hours

Headcount limitations (min-max.):  min. 3

Prerequisites:  -

Topic
In medical sciences, emphasis is increasingly placed on instrumental techniques and accurate, quantitative measurements. This course is give an overall review about the modern mass spectrometry and it shows the medical applications of the MS in the clinical and diagnostic practice.

Topics:

Conditions for acceptance of the semester
Written exam. Max. absences: 20%.

Making up for missed classes
Not possible.

Reading material
Lecture slides and notes.
Hoffman et al. Mass Spectrometry. 2007

Lectures
1  Introduction  
   Dr. Márk László
2  Basics of mass spectrometry  
   Dr. Márk László
3  Basics of mass spectrometry  
   Dr. Márk László
4  Ionization techniques  
   Dr. Márk László
5  Analizators  
   Dr. Márk László
6  Detectors, The mass spectrum  
   Dr. Márk László
7  Biomedical sampling  
   Dr. Márk László
8  Separation techniques, sample preparation  
   Dr. Márk László
9  Separation techniques, sample preparation  
   Dr. Márk László
10  Proteomics  
    Dr. Márk László
11  Proteomics  
    Dr. Márk László
12  Metabolomics  
    Dr. Márk László
13  Metabolomics  
    Dr. Márk László
14  Mass spectrometry of endocrine system  
    Dr. Márk László
15  Mass spectrometry of endocrine system  
    Dr. Márk László
16  Biomarker discovery  
    Dr. Márk László
17 Biomarker discovery  
Dr. Márk László

18 Lipidomics  
Dr. Márk László

19 Lipidomics  
Dr. Márk László

20 Proteomics of viruses and bacteria  
Dr. Márk László

21 Proteomics of viruses and bacteria  
Dr. Márk László

22 Molecular imaging by MS  
Dr. Márk László

23 Exam  
Dr. Márk László

24 Exam  
Dr. Márk László

Practices
Seminars

Exam topics/questions
Ionsources.
Analizators.
Detectors.
Separation techniques.
Sample handling. Biomedical sampling.
Bioinformatics.
Proteomics.
Metabolomics
Lipidomics.
Biomarker discovery.
Mass spectrometric imaging techniques.
MS of endocrine system.

Participants
# OAFANC  Medical English 2/C - Writing Up Research - How to Prepare and Read Medical Journal Articles

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. GÁBOR RÉBÉK-NAGY, associate professor</th>
</tr>
</thead>
</table>

- **2 credit • midsemester grade • Optional module • both semesters • semester • recommended semester: 4**

- **Number of hours/semester:** 28 lectures + 0 practices + 0 seminars = total of 28 hours

- **Headcount limitations (min-max.):** min. 3 – max. 200

- **Prerequisites:** -

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**Topic**

Preparing for processing biomedical research articles written in English required during the premedical, medical, preclinical and clinical courses. Preparing for writing up research in biomedical research articles in English

**Conditions for acceptance of the semester**

Participation in practices is obligatory. Absences exceeding 15% but below 30% of the total number of contact hours can be excused by the group tutor. In case absences exceed 25% of the total number of contact hours the course must be regarded as uncompleted.

**Making up for missed classes**

To be discussed with the course tutor in each individual case.

**Reading material**


in-house handouts

**Lectures**

1. The format of MRAs  
   Dr. Rébék-Nagy Gábor
2. The format of MRAs  
   Dr. Rébék-Nagy Gábor
3. The logical cycle of inductive inquiry  
   Dr. Rébék-Nagy Gábor
4. The logical cycle of inductive inquiry  
   Dr. Rébék-Nagy Gábor
5. The genre of MRA  
   Dr. Rébék-Nagy Gábor
6. The genre of MRA  
   Dr. Rébék-Nagy Gábor
7. The discourse community  
   Dr. Rébék-Nagy Gábor
8. The discourse community  
   Dr. Rébék-Nagy Gábor
9. Non-native writers’ paradox  
   Dr. Rébék-Nagy Gábor
10. Non-native writers’ paradox  
    Dr. Rébék-Nagy Gábor
11. Psycholinguistic aspects of the MRA  
    Dr. Rébék-Nagy Gábor
12. Psycholinguistic aspects of the MRA  
    Dr. Rébék-Nagy Gábor
13. Socio-cultural aspects of the MRA  
    Dr. Rébék-Nagy Gábor
14. Socio-cultural aspects of the MRA  
    Dr. Rébék-Nagy Gábor
15. The lexis and grammar of MRAs  
    Dr. Rébék-Nagy Gábor
16. The lexis and grammar of MRAs  
    Dr. Rébék-Nagy Gábor
17. The introduction section  
    Dr. Rébék-Nagy Gábor
Practices

Seminars

Exam topics/questions
1/ Four quizzes
2/ Essay on the theory of medical research article writing
3/ Annotating a medical research article

Participants
Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE)
Topic

According to a simple definition bioinformatics is molecular biology on a computer. Today, also due to the Human Genome Project, an incredible amount of information is available on our genes and proteins. What can we use this information for? The aim of bioinformatics is to organize these information and to help us find and analyze the relevant data. Our course provides an introduction to these. We will seek answers to questions like:
- how can we find the DNA and amino acid sequence of a given protein on the internet?
- how can we distinguish coding and non-coding regions of a gene?
- how can we predict the properties of DNA and protein molecules based on their sequence?
- how can we design a protein cloning experiment?
- how similar is the same protein found in men and mice?
- how can the 3D structure of a protein be predicted?
- how can we visualize and manipulate the 3D structure of a protein?

During the course we will not only discuss the theoretical background of the above (and many other) questions, but students will also be able to try out all these methods in practice.

Conditions for acceptance of the semester

Maximum of three absences.

Making up for missed classes

Reading material

http://biofizika.aok.pte.hu

Lectures

Practices

1. Computer and molecular biology basics
2. Nucleotide databases
3. Protein databases
4. Analyzing DNA sequences
5. Analyzing protein sequences
6. Comparing two sequences
7. Similarity searches (BLAST)
8. Multiple sequence alignments. Filogenetic trees
9. 3D protein structures
10. Protein structure prediction, computer simulations
12. Basics of genomics, proteomics and systems biology
13. Bibliography databases (PubMed), handling references
14. Medical databases
15. Test writing

Seminars

1. Computer and molecular biology basics
2. Nucleotide databases
3. Protein databases
4. Analyzing DNA sequences
5. Analyzing protein sequences
6. Comparing two sequences
7. Similarity searches (BLAST)
8. Multiple sequence alignments. Filogenetic trees
9. 3D protein structures
10. Protein structure prediction, computer simulations
11. Basics of genomics, proteomics and systems biology
12. Bibliography databases (PubMed), handling references
13. Medical databases
14 Test writing

Exam topics/questions
http://biofizika.aok.pte.hu

Participants
Dr. Grama László (GRLHAAO.PTE), Dr. Talián Csaba Gábor (TACRAAO.PTE), Dr. Visegrády Balázs (VIBAAB.T.JPTE)
Course director: DR. TAMÁS DECSI, professor
Department of Paediatrics

**Topic**
Evidence-based medicine (EBM) offers practical tools to solve the practical problems arising in clinical settings as well as in outpatient care. This course is aimed not only to summarise the basic knowledge of EBM, but to provide practical examples of the usefulness of EBM as well. Formulating of clinical questions, literature search strategies as well as critical appraisal of papers revealed by the search is discussed in detail.

**Conditions for acceptance of the semester**
Missing more than 4 hours of teaching excludes the student from the course.

**Making up for missed classes**
Missing not more than four hours may be amended by studying at home and answering specific questions of the tutor.

**Reading material**
The teaching material will be made electronically available for the students.

**Lectures**

1. Formulating clinical questions (PICO strategy)  
   Dr. Decsi Tamás
2. Searching electronic databases  
   Dr. Decsi Tamás
3. Randomised controlled trials  
   Dr. Decsi Tamás
4. Appraisal of randomised controlled trials  
   Dr. Decsi Tamás
5. Systematic reviews  
   Dr. Decsi Tamás
6. Appraisal of systematic reviews  
   Dr. Decsi Tamás
7. Clinical guidelines  
   Dr. Decsi Tamás
8. Appraisal of clinical guidelines  
   Dr. Decsi Tamás
9. Epidemiological studies  
   Dr. Decsi Tamás
10. Appraisal of epidemiological studies  
   Dr. Decsi Tamás
11. Health technology assessment  
   Dr. Decsi Tamás
12. Cost-benefit analysis  
   Dr. Decsi Tamás
13. Practical implication of the evidence  
   Dr. Decsi Tamás
14. Implementation of changes in health care  
   Dr. Decsi Tamás

**Practices**

**Seminars**

**Exam topics/questions**
The individual performance of students will be follow-up during the course; the last hour of the course will be devoted to evaluating the readiness of the student to apply methods of EBM in practical settings.

**Participants**
Dr. Decsi Tamás (DETIAAK.PTE)
OAFEMM  MOLECULAR BASIS OF ENDOCRINE DISEASES

Course director: DR. MARIETTA VÉRTES, professor emeritus
Department of Physiology

2 credit • midsemester grade • Optional module • spring semester • recommended semester: 4

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 50

Prerequisites: OAAMB2 completed

Topic
Endocrinology is the study of hormones, their receptors and the intracellular signaling pathways they invoke. The aim of the program is to understand the effects of hormones on cellular growth and function and their implications in development of endocrine dysfunction. Explain the molecular and cellular abnormalities in common endocrine-based diseases.

Conditions for acceptance of the semester
Participation at the lectures, exam

Making up for missed classes
Oral discussion of given chapter

Reading material

Lectures
1. Hormonal disorders of growth
   Dr. Vértes Marietta
2. Antidiuretic hormones
   Dr. Vértes Marietta
3. Goiter
   Dr. Vértes Marietta
4. Hypothyroidism
   Dr. Vértes Marietta
5. Disorders of pancreas
   Dr. Vértes Marietta
6. Disorders of the thyroid:
   Dr. Vértes Marietta
7. Glucocorticoids
   Dr. Vértes Marietta
8. Hormonal dysfunction of carbohydrate, protein and fat metabolism
   Dr. Vértes Marietta
9. Exam
   Dr. Vértes Marietta
10. Disorders of endocrine system
    Dr. Vértes Marietta
11. Defect in sensitivity to hormones
    Dr. Vértes Marietta
12. Hypo- and hyperfunction
    Dr. Vértes Marietta
13. Atrial Natriuretic Hormones
    Dr. Vértes Marietta
14. Endocrinologic evaluation of the hypothalamo-pituitary axis
    Dr. Vértes Marietta
15. Hyperthyroidism. Autoimmun disorders
    Dr. Vértes Marietta
16. Hormonal disorders of growth
    Dr. Vértes Marietta
17. Approach to the patient with endocrine disease
    Dr. Vértes Marietta
18. Neural and hormonal integration in control of fluid homeostasis
    Dr. Vértes Marietta
Pituitary disorders: hypopituitarism, hypothalamic dysfunction
Dr. Vétes Marietta

Pituitary disorders: adenomas
Dr. Vétes Marietta

Laboratory and imaging studies
Dr. Vétes Marietta

Calcitonin and Vitamin D
Dr. Vétes Marietta

Mineralcorticoids
Dr. Vétes Marietta

Renin-angiotensin system
Dr. Vétes Marietta

Adrenal medulla
Dr. Vétes Marietta

Hormonal basis for development of edema, dehydration, or overhydration. Endocrine hypertension.
Dr. Vétes Marietta

Disorders of parathyroid hormones
Dr. Vétes Marietta

The calcitropic hormones and bone disease
Dr. Vétes Marietta

Practices

Seminars

Exam topics/questions
Written exam, multiple choice questions from lectures

Participants
**OAFFEO  HIGHLIGHTS OF CONSERVATION MEDICINE: ECOLOGICAL HEALTH IN PRACTICE**

**Course director:**
Dr. Csaba Varga, associate professor
Department of Public Health Medicine

<table>
<thead>
<tr>
<th>1 credit • midsemester grade • Optional module • spring semester • recommended semester: 4</th>
</tr>
</thead>
</table>

**Number of hours/semester:** 14 lectures + 0 practices + 0 seminars = total of 14 hours

**Headcount limitations (min-max.):** min. 5 –

**Prerequisites:** -

**Topic**
Conservation medicine is an emerging discipline, focusing on the intersection of ecosystem health, animal health, and human health. Work in the biomedical and veterinary sciences is now being folded into conservation biology; to explore the connections between animal and human health; trace the environmental sources of pathogens and pollutants; develop an understanding of the ecological causes of changes in human and animal health; and understand the consequences of diseases to populations and ecological communities. Conservation Medicine defines this new discipline.

Course will provide a framework to examine the connections between the health of the planet and the health of all species and challenge students in the health sciences and natural sciences to think about new, collaborative ways to address ecological health concerns.

**Conditions for acceptance of the semester**
Absence of 2 hours is acceptable.

**Making up for missed classes**

**Reading material**
CooSpace

**Lectures**

1. What is Conservation Medicine? It examines ecological health issues from various standpoints, including the emergence and resurgence of infectious disease agents; the increasing impacts of toxic chemicals and hazardous substances; and the health implications of habitat fragmentation and degradation and loss of biodiversity.
   Dr. Varga Csaba

2. How do waves of infections accompany periods of social and environmental transitions?
   (influenza: WWI, plague: Middle Ages)
   Dr. Varga Csaba

3. Tuberculosis, smallpox and cholera appeared in concert among the teeming urban centres of Charles Dickens’s 19th England.
   Dr. Varga Csaba

4. Domestication of animals triggered spill-over of animal microorganisms.
   Dr. Varga Csaba

5. Health, political and economic impact of BSE epidemic in Britain.
   Dr. Varga Csaba

6. Climate change and emerging infectious diseases.
   Dr. Varga Csaba

7. Emerging diseases can cause extinction of endangered species.
   Dr. Varga Csaba

8. Emerging diseases alter the ratios of predators, prey, competitors and recyclers necessary for healthy ecosystems.
   Dr. Varga Csaba

9. Emerging diseases alter habitat already threatened by fragmentation and global climate change.
   Dr. Varga Csaba

10. Sociology, economics, and politics: these disciplines prominently influence and are influenced by human behaviour, which shapes our environment, which then shapes our health.
    Dr. Varga Csaba

11. Sustainability is just another word for health.
    Dr. Varga Csaba

12. Microbial adaptation: pathogens jumping from wildlife to humans, as in the case of monkeypox. People are vulnerable to at least 1415 species of infectious organisms.
    Dr. Varga Csaba

13. Parasite ecology I.
    Dr. Varga Csaba

14. Parasite ecology II.
    Dr. Varga Csaba
Practices
Seminars
Exam topics/questions
Participants
OAFH41 HUNGARIAN FOR FOREIGNERS B2 - VANTAGE HUNGARIAN - PART 1

Course director: KATALIN PELCZ, language teacher
International Studies Center

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 4

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 4 - max. 12
Prerequisites: OAFH42 parallel + OAFH31 completed

Topic
The Vantage Hungarian course focuses on further expansion of students’ vocabulary and oral skills. Students are introduced more complex grammar. Readings include texts from literature, history, folklore as well as from the field of sociology and politics. Has a sufficient range of language to be able to give clear descriptions, express viewpoints on most general topics, without much conspicuous searching for words, using some complex sentence forms to do so.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted. In the case of unforeseen matters happen and the absence of the students is not verifying by medical certificate, the students will have the possibility to discuss the case with his/her teacher and present an essay which topic basis on the personal discussion.

Reading material
Beszélsz magyarul? Tankönyv 3.

Lectures
Practices
Seminars

- Országismeret (Magyarország, utazás, turizmus, gyógyfürdők, wellness, Milyenek a magyarok?)
- A magyar konyha (receptek, dalok)
- Zene (dalok, zeneszerzők élete és munkássága)
- Egészség / Betegség (egészséges életmód, az orvostól)
- Falu / Város (előnyök és hátrányok, környezetvédelem)

Exam topics/questions
1. Országismeret (Magyarország, utazás, turizmus, gyógyfürdők, wellness, Milyenek a magyarok?)
2. A magyar konyha (receptek, dalok)
3. Zene (dalok, zeneszerzők élete és munkássága)
4. Egészség / Betegség (egészséges életmód, az orvostól)
5. Falu / Város (előnyök és hátrányok, környezetvédelem)

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
**OAFH42 Hungarian for Foreigners B2 - Vantage Hungarian - Part 2**

**Course director:** KATALIN PELCZ, language teacher
International Studies Center

- 2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 4
- Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
- Headcount limitations (min-max.): min. 4 – max. 12
- Prerequisites: OAFH41 parallel + OAFH32 completed

**Topic**
The Vantage Hungarian course focuses on further expansion of students’ vocabulary and oral skills. Students are introduced more complex grammar. Readings include texts from literature, history, folklore as well as from the field of sociology and politics. Has a sufficient range of language to be able to give clear descriptions, express viewpoints on most general topics, without much conspicuous searching for words, using some complex sentence forms to do so.

**Conditions for acceptance of the semester**
75% of class attendance, successful oral and written exam at the end of the course

**Making up for missed classes**
75% of the lessons are obligatory. Medical certificate is accepted. In the case of unforeseen matters happen and the absence of the students is not verifying by medical certificate, the students will have the possibility to discuss the case with his/her teacher and present an essay which topic basis on the personal discussion.

**Reading material**
Beszélsz magyarul? Tankönyv 3.

**Lectures**
**Practices**
**Seminars**
- Országismeret (Magyarország, utazás, turizmus, gyógyfürdők, wellness, Milyenek a magyarok?)
- A magyar konyha (receptek, dalok)
- Zene (dalok, zeneszerzők élete és munkássága)
- Egészség / Betegség (egészséges életmód, az orvosnál)
- Falu / Város (előnyök és hátrányok, környezetvédelem)

**Exam topics/questions**
1. Országismeret (Magyarország, utazás, turizmus, gyógyfürdők, wellness, Milyenek a magyarok?)
2. A magyar konyha (receptek, dalok)
3. Zene (dalok, zeneszerzők élete és munkássága)
4. Egészség / Betegség (egészséges életmód, az orvosnál)
5. Falu / Város (előnyök és hátrányok, környezetvédelem)

**Participants**
Pelcz Katalin (PEKAAD.B.JPTE)
OAFMAF \textbf{RELATIONSHIP BETWEEN INTRAUTERINE DEVELOPMENT AND ANATOMICAL SITUS}  

\textbf{Course director:} DR. JUDIT HORVÁTH, associate professor \hfill \textbf{Department of Anatomy}  

\begin{tabular}{|l|}
\hline
1 credit \bullet midsession grade \bullet Optional module \bullet spring semester \bullet recommended semester: 4  
\hline
\textbf{Number of hours/semester:} & \textbf{4 lectures + 0 practices + 8 seminars = total of 12 hours}  
\hline
\textbf{Headcount limitations (min-max.):} & \textbf{min. 5 – max. 30}  
\hline
\textbf{Prerequisites:} & \textbf{OAAAA2 completed + OAAEL1 completed + OAASF2 completed}  
\hline
\end{tabular}

\textbf{Topic}  
Synthesis of previous anatomical and embryological knowledge, enlightening connections of embryological development, explaining the background of developmental malformations.

\textbf{Conditions for acceptance of the semester}  
The course will be held on the 4th, 5th, 6th, 7th, 8th, and 9th week of the semester, 1x2 hours.

\textbf{Making up for missed classes}  
There is no possibility of making up the missed classes.

\textbf{Reading material}  
\url{http://an-server.pote.hu/}

\textbf{Lectures}  
\begin{enumerate}
  \item Intrauterine development in the first two months and the external body shape.  
  \hfill Dr. Horváth Judit  
  \item Development of the organs of the thoracic cavity – the embryological basis of the anatomical situs.  
  \hfill Dr. Horváth Judit  
  \item Development of the organs of the abdominal cavity – the embryological basis of the anatomical situs.  
  \hfill Dr. Horváth Judit  
  \item Development of the nervous system - the embryological basis of the macroscopy of the brain.  
  \hfill Dr. Horváth Judit
\end{enumerate}

\textbf{Practices}  

\textbf{Seminars}  
\begin{enumerate}
  \item Intrauterine development in the first two months and the external body shape.  
  \item Intrauterine development in the first two months and the external body shape.  
  \item Development of the organs of the thoracic cavity – the embryological basis of the anatomical situs.  
  \item Development of the organs of the thoracic cavity – the embryological basis of the anatomical situs.  
  \item Development of the organs of the abdominal cavity – the embryological basis of the anatomical situs.  
  \item Development of the organs of the abdominal cavity – the embryological basis of the anatomical situs.  
  \item Development of the nervous system - the embryological basis of the macroscopy of the brain.  
  \item Development of the nervous system - the embryological basis of the macroscopy of the brain.
\end{enumerate}

\textbf{Exam topics/questions}  
\url{http://an-server.pote.hu/}

\textbf{Participants}  
Dr. Horváth Judit (HOJIAAO.PTE)
OAFMC2 METHODS IN MOLECULAR CELL BIOLOGY II

Course director: DR. MARIANNA PAP, associate professor
Department of Medical Biology

2 credit • midsemester grade •Optional module • spring semester • recommended semester: 4

Number of hours/semester: 12 lectures + 16 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 1 –
Prerequisites: OAAMB2 completed

Topic
The main objective of the course to improve theoretical knowledge and practical skills of students. The course covers the most important techniques used in molecular cell biology. On the small-group discussions theoretical background of molecular cell biology methods are described and discussed. On the prakticals students perform basic experiments used in Department of Medical Biology.

Conditions for acceptance of the semester
Making up for missed classes
individually discussed

Reading material
handouts prepared by the Medical Biology Department

Lectures
1. Apoptosis methods (DNA-fragmentation, morphological methods, detection of biochemical changes)
   Dr. Pap Marianna
2. Apoptosis methods (DNA-fragmentation, morphological methods, detection of biochemical changes)
   Dr. Pap Marianna
3. Protein methods (Western blot, immunprecipitation, immunhistochemistry)
   ifj. Dr. Sétáló György
4. Protein methods (Western blot, immunprecipitation, immunhistochemistry)
   ifj. Dr. Sétáló György
5. PCR I. (detection methods, types of primers and probes)
   Dr. Pap Marianna
6. PCR I. (detection methods, types of primers and probes)
   Dr. Pap Marianna
7. PCR II. (primer and probe design, uses of databases)
   Dr. Balogh András
8. PCR II. (primer and probe design, uses of databases)
   Dr. Balogh András
9. Analysis of RNA (RNA isolation, electrophoresis, RNase protection assay, S1 nuclease mapping)
   Dr. Pap Marianna
10. Analysis of RNA (RNA isolation, electrophoresis, RNase protection assay, S1 nuclease mapping)
    Dr. Pap Marianna
11. Radioactive isotopes used in molecular cell biology (3H, 32P, 35S-labeling, probe labeling)
    Dr. Pap Marianna
12. Test
    Dr. Pap Marianna

Practices
1. Apoptosis assay (counting cells)
2. Apoptosis assay (treatment of cells)
3. Apoptosis assay (fixation, staining of nuclei)
4. Apoptosis assay (check nuclei morphology by confocal laser scanning microscopy)
5. Western blot (counting cells)
6. Western blot (treatment of cells)
7. Western blot (cell lysis, measurement of protein concentration)
8. Western blot (cell lysis, measurement of protein concentration)
9. Western blot (preparation of the gel)
10. Western blot (preparation of the gel)
11. Western blot (loading and running the gel, set up the transfer)
12. Western blot (loading and running the gel, set up the transfer)
13. Western blot (blocking, adding primary- and secondary antibodies, washing steps)
14 Western blot (blocking, adding primary- and secondary antibodies, washing steps)
15 Western blot (blocking, adding primary- and secondary antibodies, washing steps)
16 Western blot (detection, densitometry)

Seminars

Exam topics/questions

Participants

Dr. Balogh András (BAAFACE.PTE), Dr. Pap Marianna (PAMFAAO.PTE)
OAFMMR NUCLEAR MAGNETIC RESONANCE

Course director: DR. ZOLTÁN BERENTE, associate professor
Department of Biochemistry and Medical Chemistry

1 credit • midterm grade • Optional module • spring semester • recommended semester: 4
Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 3 – max. 20
Prerequisites: OAABI2 completed + OAABK1 completed

Topic
The course covers the theoretical background of the medical diagnostic (imaging and biomarkers) and drug industrial (drug development, drug analysis) applications of nuclear magnetic resonance with a problem-based attitude and case studies.

Conditions for acceptance of the semester
Elaboration and successful discussion of project.

Making up for missed classes
On the judgement of the instructor.

Reading material
http://cis.rit.edu/htbooks/nmr
http://cis.rit.edu/htbooks/mri
http://www.e-mri.org

Lectures
1 The NMR phenomenon. Excitation, relaxation and signal formation
   Dr. Berente Zoltán
2 Fourier-transform pulse NMR: Theory and practice
   Dr. Berente Zoltán
3 Structure elucidation of small molecules 1. One-dimensional techniques based on coupling through chemical bonds or through the space.
   Dr. Berente Zoltán
4 Structure elucidation of small molecules 2. NMR in more dimensions, strategy of structure analysis
   Dr. Berente Zoltán
5 Structure elucidation of small molecules 3. NMR in drug development and in drug analysis
   Dr. Berente Zoltán
6 Structure elucidation of macromolecules. Intramolecular and intermolecular interactions, structure-activity relationship
   Dr. Berente Zoltán
7 Study of energy metabolism using 31P NMR spectroscopy
   Dr. Berente Zoltán
8 Study of fuel metabolism using 13C NMR spectroscopy
   Dr. Berente Zoltán
9 Applications of NMR spectroscopy of other nuclei (19F, 23Na, 87Rb) in life sciences
   Dr. Berente Zoltán
10 Statistical NMR spectroscopy: searching for biomarkers
   Dr. Berente Zoltán
11 Basics of MR imaging
   Dr. Berente Zoltán
12 Current MR imaging techniques
   Dr. Berente Zoltán
13 Localised (volume selective) NMR spectroscopy
   Dr. Berente Zoltán
14 NMR in solid phase: study of biological membranes
   Dr. Berente Zoltán

Practices
Seminars
Exam topics/questions
Participants
**OAFMRK  MOLECULAR AND CELLULAR MR IMAGING**

**Course director:**

**DR. ZOLTÁN BERENTE, associate professor**

Department of Biochemistry and Medical Chemistry

1 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 4

**Number of hours/semester:**

14 lectures + 0 practices + 0 seminars = total of 14 hours

**Headcount limitations (min-max.):**

min. 3 – max. 20

**Prerequisites:**

OAABI2 completed + OAABK1 completed

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**Topic**

Magnetic resonance imaging (MRI) has been known so far mostly as a whole-body imaging technique. Since the technology already allows to obtain MR signal not only from water, but also substances of significantly lower concentration. The course covers the concepts, basic theory and known limits of current MR imaging methods on molecular probes and their applications in frequent disorders (e.g. tumors, diabetes, inflammations) or in „hot topics” (e.g. stem cells).

**Conditions for acceptance of the semester**

Presentation and successful discussion of a project elaborated at home.

**Making up for missed classes**

On the judgement of the tutor

**Reading material**


http://cis.rit.edu/htbooks/nmr

http://cis.rit.edu/htbooks/mri

http://www.e-mri.org

**Lectures**

1. The NMR phenomenon, excitation and signal formation, relaxation
   Dr. Berente Zoltán

2. Theory and practice of the Fourier transform NMR technique
   Dr. Berente Zoltán

3. Basics of MR imaging
   Dr. Berente Zoltán

4. Contrast in MRI, contrast agents
   Dr. Berente Zoltán

5. Molecular and functional MRI of cancer
   Dr. Berente Zoltán

6. Molecular MRI of atherosclerosis
   Dr. Berente Zoltán

7. Molecular MRI of apoptosis
   Dr. Berente Zoltán

8. Molecular MRI of reporter genes
   Dr. Berente Zoltán

9. Pharmacological MRI
   Dr. Berente Zoltán

10. Cellular Imaging of macrophage activity in infection, inflammation and in stroke
    Dr. Berente Zoltán

11. Cellular and molecular MR Imaging of the diabetic pancreas
    Dr. Berente Zoltán

12. MR tracking of stem cells
    Dr. Berente Zoltán

13. Cellular imaging of cell transplants
    Dr. Berente Zoltán

14. Project presentations
    Dr. Berente Zoltán
Practices
Seminars
Exam topics/questions
Participants
Topic

The course gives an overall review about the observable pathological alterations of the human remains with their diagnostic possibilities as well as their interpretation.

Topics:
- Chemical composition of human bone tissue.
- Sex determination techniques.
- Life determination.
- Congenital alterations.
- Traumatic morphology.
- Trepanations.
- Mycobacterial infections.
- Tuberculosis.
- Lepra.
- Syphilis.
- The Pest.
- Bone tumors, osteocarcinoma.
- Joint diseases.
- Oral paleopathology.
- Molecular biomarker discovery.
- Evolution of human pathogens.
- Evolution of Mycobacterium.

Conditions for acceptance of the semester

Written exam. Max. absences: 20%.

Making up for missed classes

Not possible.

Reading material

Lecture slides and notes.

Palfi et al. Tuberculosis past and present. 1999


Lectures

1 Introduction  
   Dr. Márk László

2 The paleopathology, an interdisciplinary science  
   Dr. Márk László

3 The paleopathology, an interdisciplinary science  
   Dr. Márk László

4 Chemical composition and biochemistry of the bone tissue  
   Dr. Márk László

5 Chemical composition and biochemistry of the bone tissue  
   Dr. Márk László

6 Sex determination techniques  
   Dr. Márk László

7 Lifetime determination  
   Dr. Márk László

8 Congenital alterations. Trauma  
   Dr. Márk László

9 Trepanations  
   Dr. Márk László
10 Tuberculosis
   Dr. Márk László
11 Tuberculosis
   Dr. Márk László
12 Lepra
   Dr. Márk László
13 Lepra
   Dr. Márk László
14 Syphilis
   Dr. Márk László
15 Syphilis
   Dr. Márk László
16 The Pest
   Dr. Márk László
17 The Pest
   Dr. Márk László
18 Osteo-necrotic alterations, dystrophies
   Dr. Márk László
19 Osteocarcinoma, bone tumors
   Dr. Márk László
20 Joint diseases
   Dr. Márk László
21 Joint diseases
   Dr. Márk László
22 Oral paleopathology
   Dr. Márk László
23 Determination of molecular biomarkers
   Dr. Márk László
24 Paleoproteomics. Evolution of the human pathogenes
   Dr. Márk László
25 Exam
   Dr. Márk László
26 Exam
   Dr. Márk László

Practices

Seminars

Exam topics/questions
Chemical composition of human bone tissue.
Sex determination techniques.
Life determination.
Congenital alterations.
Traumatic morphology.
Trepanations.
Mycobacterial infections.
Tuberculosis.
Lepra.
Syphilis.
The Pest.
Bone tumors, osteocarcinoma.
Joint diseases.
Oral paleopathology.
Molecular biomarker discovery.
Evolution of human pathogenes.
Evolution of Mycobacterium.

Participants
OAFTD2   STUDENT PROJECT RESEARCH 2

Course director:  Dr. BALOGH, PÉTER, Außerordentlicher Professor
Undergraduate Research

2 credit • midterm grade • Optional module • both semesters semester • recommended semester: 4

Number of hours/semester:  0 lectures + 24 practices + 0 seminars = total of 24 hours
Headcount limitations (min-max.):  min. 1 – max. 300
Prerequisites:  OAFTD1 completed

Topic
The aim of this subject is to nurture and promote the activity of students sufficiently motivated to perform biomedical project research. The students may progressively enroll to four parts in four separate semesters, for the total credit value of 8. For acknowledging the 3rd and 4th (elective) parts, the student must train research student novice(s).

The subject’s administrator is the actual Chairman of the Students’ Research Society (SRS) of the Faculty of Medicine.

Conditions for acceptance of the semester
To enroll this course a registered SRS membership is mandatory. Acknowledging the course requires (a) either first-author presentation of work at a Students’ conference (UP or elsewhere) or Dean’s assay, or presentation at any professional conference relevant to the research field, or (b) progress report on the work performed or demonstrating expertise at the methodology employed before the Tutor and the Chairman of SRS. Grades will be accorded corresponding to the criteria set out in the Rules and Regulations of SRS.

Making up for missed classes
Not applicable.

Reading material

Lectures
Practices
Research
Seminars
Exam topics/questions
Participants
Dr. Balogh Péter (BAPOAGP.PTE)
The Ethics of Scientific Research

Course director: Tibor Szolcsányi, assistant professor
Department of Behavioural Sciences

2 credit • midsemester grade • Optional module • spring semester • recommended semester: 4

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 30

Prerequisites: -

Topic

The results of scientific researches have a great social impact and therefore the ethical problems raised by the practice of scientific researches are significant problems not only for the researchers, but for the wider society as well. The seminar helps to clarify the basic ethical, legal and philosophical concerns of medical research. During the semester the following subjects will be discussed: the criterions of rationality, reasoning and ethically correct debate, the characteristics and norms of scientific cognition, the ethics of scientific publication, the ethical and legal concerns of human and animal experimentation, neuroethical examples of the social impact of medical researches.

Conditions for acceptance of the semester

Short presentation, written test.

Making up for missed classes

Reading material


Lectures

Practices

Seminars

1. Introduction
2. Introduction
3. Rationality and ethics
4. Rationality and ethics
5. Rationality and ethics
6. Rationality and ethics
7. The methodology of scientific research in natural sciences, and its ethical implications
8. The methodology of scientific research in natural sciences, and its ethical implications
9. The methodology of scientific research in natural sciences, and its ethical implications
10. The methodology of scientific research in natural sciences, and its ethical implications
11. The ethical concerns of clinical trials
12. The ethical concerns of clinical trials
13. The ethical concerns of clinical trials
14. The ethical concerns of clinical trials
15. Ethical problems raised by animal experimentation
16. Ethical problems raised by animal experimentation
17. The placebo effect
18. The placebo effect
19. Ethics and scientific achievement
20. Ethics and scientific achievement
21. Gene-ethics
22. Gene-ethics II.
23. The ethics of stem cell research
24. The ethics of stem cell research II.
25 Neuroethical examples of the social impact of medical research
26 Summarizing discussion
27 Test
28 Test

Exam topics/questions

Participants
Szolcsányi T ibor (SZTAAJ.B.JPTE)
**Topic**

The aim of the course is to introduce participants to the methodological basis of flow cytometry (FC), its theoretical background and applications. The most important diagnostic and research applications will be discussed in detail. Besides the “classical” cell phenotyping based on cell surface and intracellular labeling, recent methods including functional studies, which can provide information about signaling events or apoptosis on a cell-by-cell basis, will also be presented. The theoretical knowledge will be presented in seminars, and participants will also have the opportunity to get “hands on practice” in preparing samples, data acquisition and analysis on the practices.

**Conditions for acceptance of the semester**

Maximum number of absences: 2. Acceptance of the semester is based on the active participation on the seminars and practices.

**Making up for missed classes**

None.

**Reading material**

The slides of the seminars will be available on-line on the website of the Department of Immunology and Biotechnology (www.immbio.hu).

**Lectures**

**Practices**

1. Immunophenotyping of human blood lymphocytes based on multiple cell surface labeling (CD3, CD4, CD8, CD19, CD25, CD45RA/RO) 1.
2. Immunophenotyping of human blood lymphocytes based on multiple cell surface labeling (CD3, CD4, CD8, CD19, CD25, CD45RA/RO) 2.
5. Intracellular Ca-signal in human T cell line 1.
6. Intracellular Ca-signal in human T cell line 2.

**Seminars**

1. Introduction. Information about the course. Basis of FC, historical overview.
2. Biophysical basis of fluorescence.
4. Labeling of cell surface molecules. Distinguishing cells based on their physical properties (light scatter) and fluorescent signals.
5. Diagnostic measurements with FC.
8. Measurement of cytokines in biological samples using multiplex bead array technique (CBA).

**Exam topics/questions**

None

**Participants**

Dr. Berki Timea (BETMABO.PTE), Dr. Boldizsár Ferenc (BOFFAAO.PTE), Dr. Grama László (GRLHAAO.PTE)
OAFADK Data Handling

Course director: DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis

2 credit • midsemester grade • Optional module • spring semester • recommended semester: 5

Number of hours/semester: 14 lectures + 14 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 1 – max. 8
Prerequisites: -

Topic
The medical papers are likely the most important source for refresh your knowledge as a student but even more importantly as a MD. Most of these papers are based on serious data collection and evaluation applying a wide array of statistical methods. It is essential to be familiar with these methods so to understand these papers. The participating students can also prepare themselves for such kinds of tasks concerning their thesis or their own research work.

Overview of the typical statistical methods most widely used in medical papers using fresh publications (good examples and typical errors as well). For those students who are working on some scientific problem or on their thesis. They will get some help with their own data collection and evaluation problems on the course.

Conditions for acceptance of the semester
Active participation on the classes and/or to some scientific work: data collection and evaluation of their own project and working on medical papers

Making up for missed classes
one extra class

Reading material
Any basic biometrics or biostatistics textbook. Some fresh scientific paper. Every participant should bring at least 2-3 papers that are connecting to their research work or thesis.

Lectures
1-6: Refresh the terms and methods from the first semester Biometrics (probability, discrete and continuous distributions, data description (histogram, measures of the sample), distribution of the sample mean, Confidence Interval of the expected value, t tests, linear regression and correlation, contingency tables and chi-squared test, nonparametric tests).
7-14: Design of experiments, data collection, errors, arrange data. Data evaluation. When can you use the learned methods and when should you use something else. If so, what? All these will be based on the actual problems of participants, but the most likely topics are: Analysis of Variance, Multiple regression and correlation, Survival analysis, Cox regression, Multivariate methods (factor-, discriminant- and so on analyses, ?).

Practices
1-6: Examples of fresh scientific work (from the student’s practice or papers). Applied methods are: probability, discrete and continuous distributions, data description (by graphs and numerical values - histogram, measures of the sample), distribution of the sample mean, Confidence Interval of the expected value, t tests, linear regression and correlation, contingency tables and chi-squared test, nonparametric tests
7-14: Examples of fresh scientific work (from the student’s practice or papers). Applied methods are: Design of experiments, data collection, errors, arrange data. Data evaluation. Analysis of Variance, Multiple regression and correlation, Survival analysis, Cox regression, Multivariate methods (factor-, discriminant- and so on analyses).

Seminars
Exam topics/questions
Demonstration of the data handling and evaluation methods used in a fresh scientific paper (issued by the lecturer or selected by the student) after preliminary (at home) preparation and/or presentation of data evaluation of their own data - based on all topics and fields of the course.

Participants
Dr. Pótó László (POLGABO.PTE)
**OAAZZZ COMMON PATHOMECHANISMS IN ENVIRONMENT-DETERMINED DISEASES**

**Course director:** DR. JÁNOS GARAI, associate professor
Department of Pathophysiology and Gerontology

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 5

- Number of hours/semester: 0 lectures + 1 practices + 13 seminars = total of 14 hours
- Headcount limitations (min-max.): min. 3 –
- Prerequisites: OAABK2 completed + OAAEL2 completed

### Topic
The main educational task of the subject:
The pathogenesis of chronic age-related diseases is mostly environment-determined. These diseases take the bulk of healthcare expenditure, hence medical students need to get detailed and up to date information on their causative factors and their pathomechanisms revealed so far. That will enable them to apply effective preventive measures in their future work.

Industrial and agricultural pollutants found in our food, drinks or in the air are environmental agents that often interfere with physiological functioning of our body. Numerous environmental effects, however, come from natural sources e.g. the atmosphere (O2), the sun (photons) or the biosphere (plant- or microbial chemicals). Artificial and natural agents often act via common molecular mechanisms within tissues and cells: these involve signal molecules (hormones, transmitters, mediators, cytokines etc.) receptors, messengers, signal cascades and transcription factors.

### Conditions for acceptance of the semester
- Type of exam: written test
- Type of retake-exam: oral exam
- Acceptance of the semester: max 3 misses, successful exam

### Making up for missed classes
Matter of individual discussion

### Reading material
Handout + materials available to students on

### Lectures
**Practices**
1. Chemoprevention with nutraceutics and functional food.

**Seminars**
1. Oxidative insults and the defense mechanisms.
2. The redox signal in the cell, free radical’s role in select diseases.
3. Vitamin-C and other antioxidant vitamins.
4. Preventive role of non-vitamin antioxidants.
5. The steroid vitamins’ (A,D) preventive role.
6. Non-vitamin phytohormones’ preventive role.
7. Endocrine disrupters and other ‘dummies’ lurking around.
8. ’Medicines in grass and tree’: Healthy substances we can consume with plants
11. The melatonin hipe Jet-lag pill, or more than that?
13. Psychoactive drugs of plant origin: Who mimes whom? CNS is their sole target indeed?

### Exam topics/questions

### Participants
Dr. Garai János (GAJMAAO.PTE)
Topic
Pre- and postnatal human cortical development is an essential event of the development of central nervous system, which is not discussed in details in embryology. The growing information about cortical development available nowadays gives reason for its review in the medical curriculum. Disturbances of cortical development e.g. altered neuronal migration are in the background of several diseases of the pediatrics, neurology and psychiatry. We discuss in details the normal human pre- and postnatal cortical development, the neuronal migration and its alterations as the most common cause of developmental malformations of the nervous system. Students are going to hear about the molecular, genetic and pathological background of these diseases, extending the knowledge that is given by pathology and providing basis for the future clinical subjects. Disruption of cortical development after premature birth and in human trisomies (Down, Edwards, Patau syndrome) will also be introduced.

Conditions for acceptance of the semester
Participation in 80% of the lectures is obligatory. On the 5th week and at the end of course test going to be written. Achievement of 50% on the tests is needed for the credit.

Making up for missed classes
Uncertified absences must not exceed 2 hours. There is no possibility for making up of missed lectures.

Reading material
Kandel, Schwartz and Jessel „Principles of neural sciences”, chapters dealing with the development of the cortex. The purchase of the book is not needed, we provide the copy of the relevant chapters, or relevant articles.

Lectures
1. Histological structure and function of neocortex and archicortex. Dr. Ábrahám Hajnalka
2. Phases of the human cortical development. Structure of the developing cortex. Dr. Ábrahám Hajnalka
3. Places of cell proliferation. (germinval matrix). Proliferation of pyramidal cells, interneurons and glial cells. Dr. Seress László
4. Neurogenesis after birth in the rodent, primate and human cortex. Dr. Seress László
5. Forms of neuronal migration. Dr. Ábrahám Hajnalka
6. Factors guiding neuronal migration. Dr. Ábrahám Hajnalka
7. Types of neurons and synapses. Neuronal maturation and differentiation. Dr. Seress László
8. Myelin formation in the cortex. Dr. Seress László
9. Postnatal cell proliferation in prematurely born infants. Dr. Ábrahám Hajnalka
10. Postnatal neuronal differentiation in prematurely born infants. Dr. Ábrahám Hajnalka
11. Consequences of failures of neuronal proliferation and migration. Lyssencephaly. Dr. Ábrahám Hajnalka
12. Consequences of failures of neuronal proliferation and migration. Polymicrogyria, epilepsy, schizophrenia. Dr. Ábrahám Hajnalka
13. Cortical developmental malformations in trisomies. (Down’s, Edwards’, Patau’s syndromes). Dr. Ábrahám Hajnalka
14. Test Dr. Ábrahám Hajnalka
**Exam topics/questions**

Questions of the test are based on these themes.

1. Structure of neocortex and archicortex.
2. Differences in the function of neocortex and archicortex.
3. Phases of the human cortical development.
4. Histological structure of the developing cortex.
5. Germinal matrices.
6. Methods used to detect cell proliferation.
7. Proliferation of pyramidal cells, interneurons and glial cells.
9. Forms of neuronal migration during cortical development.
10. Factors guiding neuronal migration.
12. Postnatal cell proliferation.
13. Cortical alterations in prematurely born infants.
15. Consequences of failures of neuronal proliferation and migration. Lissencephaly, polymicrogyria, epilepsy, schizophrenia etc.
OAFEVO  EVOLUTIONARY IMMUNOBIOLOGY

Course director: DR. PÉTER ENGELMANN, assistant professor
Department of Immunology and Biotechnology

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 5

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 3 – max. 30
Prerequisites: OAAMB2 completed + OAAIMM completed

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**Topic**

The course describes the molecular and cellular elements of innate/adaptive immunity in their evolutionary contexts. Moreover, it discusses the ancient immune functions (phagocytosis, antimicrobial molecules, antiviral RNA interference) along with the newest research data about the development of adaptive immunity.

**Conditions for acceptance of the semester**

referral, max. 2 absences from the seminars
Making up for missed classes
individual preparation

**Reading material**

www.immbio.hu

**Lectures**

**Practices**

**Seminars**

1. Definition of the topics and course, comparison of innate and adaptive immunity
2. Pattern recognition receptors: Toll, Croquemort and others
3. Conserved signal transduction pathways in immunology
4. Cellular immune functions of innate immunity: phagocytosis, cytotoxicity, encapsulation-, capsule-, granulomeformation
6. Humoral immune components II: Acute-phase proteins, complement-evolution
7. Humoral immune components III: evolution of cytokines and chemokines
8. Sounds of Silence or the role of RNA interference (RNAi) in innate immunity, antiviral innate immunity
9. Alternative adaptive immunity in invertebrates and in ancient vertebrates?
10. Histoincompatibility in invertebrates, MHC-evolution
11. Immunological twilight-zone - The appearance of adaptive immunity, immunological triumvirate
12. RAG-time: immunglobulin, TCR development in the context of phylogenesis
13. Phylogenetical development of vertebrate immune organs
14. Host-pathogen co-evolution

**Exam topics/questions**

**Participants**

Dr. Balogh Péter (BAPOAGP.PTE), Dr. Engelmann Péter (ENPAAA.T.JPTE), Dr. Németh Péter (NEPGAAN.PTE)
ENVIRONMENTAL GENOTOXICOLOGY AND ECOTOXICOLOGY

Course director: DR. CSABA VARGA, associate professor
Department of Public Health Medicine

2 credit • midssemester grade • Optional module • autumn semester • recommended semester: 5

Number of hours/semester: 20 lectures + 8 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 15

Prerequisites: OAABK2 completed + OAAMB2 completed

Topic
Short description of the course: The objective of this interdisciplinary field is to demonstrate the environmental effects of the different chemical agents and their consequences and the strategy of the research.

The main educational task of the subject: The course provides an up-to-date preventive approach including the role of environmental genotoxic effects as a cause of increasing frequency of cancers and congenital malformations.

Conditions for acceptance of the semester
Absence of 2 x 2 hours is acceptable.

During the course one test and at the end of the course an oral exam has to be done. The mean of the two notes will give the progress grade.

Making up for missed classes

Reading material
Hulka BS, Wilcosky TC, Griffith JC.: Biological markers in epidemiology, Oxford University Press, 1990

Lectures
1. Environmental mutagens.
   Dr. Varga Csaba
2. Genotoxic carcinogens.
   Dr. Varga Csaba
3. DNA primary lesions, levels of mutations I.
   Dr. Varga Csaba
4. DNA primary lesions, levels of mutations II.
   Dr. Varga Csaba
5. Consequences of mutations.
   Dr. Varga Csaba
6. General criteria for genotoxicity tests.
   Dr. Varga Csaba
7. Genotoxicological strategies. I.
   Dr. Varga Csaba
8. Genotoxicological strategies. II.
   Dr. Varga Csaba
9. Genotoxicity in details I.
   Dr. Varga Csaba
10. Genotoxicity in details II.
    Dr. Varga Csaba
    Dr. Varga Csaba
12. Conventional tests: DNA adduct measurements, UDS, Ames test, HPRT in cell cultures, chromosomal aberrations, SCE, micronucleus.II
    Dr. Varga Csaba
13. Molecular methods: transgenic animals, single cell DNA microgel electrophoresis I.
    Dr. Varga Csaba
14. Molecular methods: transgenic animals, single cell DNA microgel electrophoresis II.
    Dr. Varga Csaba
Image analysis and computer aided evaluation I.  
Dr. Varga Csaba

Image analysis and computer aided evaluation II.  
Dr. Varga Csaba

Genotoxicological endpoints as biomarkers I.  
Dr. Varga Csaba

Genotoxicological endpoints as biomarkers II.  
Dr. Varga Csaba

Individual risk assessment I.  
Dr. Varga Csaba

Individual risk assessment II.  
Dr. Varga Csaba

**Practices**
1. Bacterial mutagenicity studies  
2. Cytogenetic studies  
3. Comet assay  
4. Biomarker studies  
5. Ecotoxicology

**Seminars**

**Exam topics/questions**

Questions for the exam:

1. Environmental mutagens.  
2. Genotoxic carcinogens.  
3. DNA lesions.  
4. Levels of mutations.  
5. Consequences of mutations.  
6. General criteria for genotoxicity tests.  
10. Molecular methods: transgenic animals.  
12. Genotoxicological endpoints as biomarkers.  
14. Bacterial mutagenicity studies  
15. Cytogenetic studies  
16. Comet assay

**Participants**

Dr. Varga Csaba (VACMAAO.PTE)
OAFH51  HUNGARIAN FOR FOREIGNERS C1 - EFFECTIVE OPERATIONAL PROFICIENCY HUNGARIAN
- PART 1

Course director: KATALIN PELCZ, language teacher
International Studies Center

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 5

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours

Headcount limitations (min-max.): min. 4 – max. 12

Prerequisites: OAFH52 parallel + OAFH41 completed

Topic
The Effective Operational Proficiency Hungarian course puts an emphasis on reading and listening comprehension exercises, including discussions and working with authentic texts. Has a good command of a broad range of language allowing him/her to select a formulation to express him/herself clearly in an appropriate style on a wide range of general, academic, professional or leisure topics without having to restrict what he/she wants to say.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted. In the case of unforeseen matters happen and the absence of the students is not verifying by medical certificate, the students will have the possibility to discuss the case with his/her teacher and present an essay which topic basis on the personal discussion.

Reading material

Lectures

Practices

Seminars
- Magyarország az EU-ban (az EU szervezete, az EU tagországai, hivatalos nyelvei; az EU szimbólumai, Magyarország a csatlakozás óta, hungarikumok)
- Időjárás (időjárás jelentés; időjárás megjelenése a hétköznapi kommunikációban ? ?biztonságos beszédtémák?, közmondások, népi időjósítások, naptárhoz kapcsolódó népi ünnepék)
- Önéletrajz (önéletrajz írása ? magyar és angol típusú, álláshirdetés, állásinterjú)
- Iskolatípusok (a nyelvtanulásról, nyelvhasználati sajátságok, szleng, hivatalos nyelv)
- Párkapcsolatok

Exam topics/questions
1. Magyarország az EU-ban (az EU szervezete, az EU tagországai, hivatalos nyelvei; az EU szimbólumai, Magyarország a csatlakozás óta, hungarikumok)
2. Időjárás (időjárás jelentés; időjárás megjelenése a hétköznapi kommunikációban ? ?biztonságos beszédtémák?, közmondások, népi időjósítások, naptárhoz kapcsolódó népi ünnepék)
3. Önéletrajz (önéletrajz írása ? magyar és angol típusú, álláshirdetés, állásinterjú)
4. Iskolatípusok (a nyelvtanulásról, nyelvhasználati sajátságok, szleng, hivatalos nyelv)
5. Párkapcsolatok

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
**OAFH52 HUNGARIAN FOR FOREIGNERS C1 - EFFECTIVE OPERATIONAL PROFICIENCY HUNGARIAN**

**PART 2**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>KATALIN PELCZ, language teacher</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course</strong></td>
<td>International Studies Center</td>
</tr>
<tr>
<td><strong>Number of hours/semester:</strong></td>
<td>0 lectures + 0 practices + 28 seminars = total of 28 hours</td>
</tr>
<tr>
<td><strong>Headcount limitations (min-max.):</strong></td>
<td>min. 4 – max. 12</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong></td>
<td>OAFH51 parallel + OAFH42 completed</td>
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**Topic**

The Effective Operational Proficiency Hungarian course puts an emphasis on reading and listening comprehension exercises, including discussions and working with authentic texts. Has a good command of a broad range of language allowing him/her to select a formulation to express him/herself clearly in an appropriate style on a wide range of general, academic, professional or leisure topics without having to restrict what he/she wants to say.

**Conditions for acceptance of the semester**

75% of class attendance, successful oral and written exam at the end of the course

**Making up for missed classes**

75% of the lessons are obligatory. Medical certificate is accepted. In the case of unforeseen matters happen and the absence of the students is not verifying by medical certificate, the students will have the possibility to discuss the case with his/her teacher and present an essay which topic basis on the personal discussion.

**Reading material**

**Lectures**

**Practices**

**Seminars**

- Magyarország az EU-ban (az EU szervezete, az EU tagországai, hivatalos nyelvei; az EU szimbólumai, Magyarország a csatlakozás óta, hungarikumok)
- Időjárás (időjárás jelentés; időjárás megjelenése a hétköznapi kommunikációban ? biztonságos beszédtémák?, közmondások, népi időjövőslások, naptárhoz kapcsolódó népi ünnepek)
- Önletrajz (önletrajz írása ? magyar és angol típusú, álláshirdetés, állásinterjú)
- Iskolatípusok (a nyelvtanulásról, nyelvhasználati sajátságok, szleng, hivatalos nyelv)
- Párkapcsolatok

**Exam topics/questions**

1. Magyarország az EU-ban (az EU szervezete, az EU tagországai, hivatalos nyelvei; az EU szimbólumai, Magyarország a csatlakozás óta, hungarikumok)
2. Időjárás (időjárás jelentés; időjárás megjelenése a hétköznapi kommunikációban ? biztonságos beszédtémák?, közmondások, népi időjövőslások, naptárhoz kapcsolódó népi ünnepek)
3. Önletrajz (önletrajz írása ? magyar és angol típusú, álláshirdetés, állásinterjú)
4. Iskolatípusok (a nyelvtanulásról, nyelvhasználati sajátságok, szleng, hivatalos nyelv)
5. Párkapcsolatok

**Participants**

Pelcz Katalin (PEKAAD.B.JPTE)
**OAFHIF THE ANATOMY, PHYSIOLOGY, DEVELOPMENT AND PATHOLOGY OF THE HIPPOCAMPAL FORMATION**

Course director: **DR. LÁSZLÓ SERESS, professor**
Central Electron Microscope Laboratory

2 credit • mideyemester grade • Optional module • autumn semester • recommended semester: 5

**Number of hours/semester:** 28 lectures + 0 practices + 0 seminars = total of 28 hours

**Headcount limitations (min-max.):** min. 5 – max. 30

**Prerequisites:** OAAANE completed + OAAE2 completed

**Topic**
It is known that the normal function of the hippocampal formation is strongly connected with the memory formation. The pathology of this brain structure is known in illnesses that affects a large population, such as epilepsy or Alzheimer’s disease.

The aim is to discuss in details the structure, connectivity, physiology and pathology of the hippocampal formation and that of the memory-related archicortical areas. In addition, we give a general description of the ontogenetic development and ageing of the hippocampus in humans as well as discuss the recently popular ideas of stem-cell hypothesis and neuronal repair in the adult brain.

**Conditions for acceptance of the semester**
Written test and no more than 3 absences.

**Making up for missed classes**
No possibility

**Reading material**
The necessary literature will be provided in xerox copies to each lecture.

Suggested literature:
Kandel, Schwartz, Jessel „Principles of Neural Science”
Shepherd „Neurobiology”
Guyton „Textbook of Medical Physiology”

**Lectures**
1. Methods to study cell formation in the young and adult hippocampus  
   Dr. Seress László
2. The anatomy of the rodent archicortex  
   Dr. Seress László
3. The anatomy of the human archicortex  
   Dr. Seress László
4. Neuronal types of the dentate gyrus  
   Dr. Seress László
5. Connectivity among the dentate neurons  
   Dr. Seress László
6. Neuronal types of Ammon’s horn in rodents and primates  
   Dr. Seress László
7. Afferent and efferent connections of Ammon’s horn  
   Dr. Seress László
8. Neuronal cell formation and development of the rodent hippocampus  
   Dr. Seress László
9. Neuronal cell formation and development of the human hippocampus  
   Dr. Ábrahám Hajnalka
10. Stem cell theory  
    Dr. Seress László
11. Adult neuronal cell formation in the human dentate gyrus  
    Dr. Seress László
12. Hippocampal dependent memory in rodents  
    Dr. Seress László
13. Methods to study hippocampal dependent memories  
    Dr. Seress László
14. Hippocampal dependent memory in monkeys  
    Dr. Seress László
15. Hippocampal dependent memories in humans  
    Dr. Seress László
16 Hippocampal memory in ageing  
   Dr. Seress László  
17 Postnatal development of memory function in children  
   Dr. Seress László  
18 Neuropathology of epilepsy  
   Dr. Ábrahám Hajnalka  
19 Neuropathology of epilepsy  
   Dr. Ábrahám Hajnalka  
20 Neuropathology of Alzheimer disease  
   Dr. Seress László  
21 Neuropathology of Alzheimer disease  
   Dr. Seress László  
22 Experimental methods to study connectivity among limbic structures  
   Dr. Ábrahám Hajnalka  
23 Electronmicroscopy of the epileptic dentate gyrus  
   Dr. Ábrahám Hajnalka  
24 Normal electronmicroscopy of the dentate gyrus  
   Dr. Seress László  
25 Experimental models of epilepsy  
   Dr. Seress László  
26 Experimental models of epilepsy  
   Dr. Seress László  
27 Exam  
   Dr. Seress László  
28 Exam  
   Dr. Seress László  

Practices

Seminars

Exam topics/questions

At the end of the course every student has to fill a test with 5 questions that will involve 5 different subjects discussed during the lectures. Each question can be answered with a short description. The final note depends on the number of correctly answered questions.

As an example:
   „Describe the neuronal circuits and their postnatal development between the excitatory neurons of the hippocampal dentate gyrus”.

Participants

Dr. Ábrahám Hajnalka (ABHMAAO.PTE), Dr. Seress László (SELMAAO.PTE)
**OAKSOS Non- conventional Methods (Complementary Medicine)**

Course director: **DR. GABRIELLA HEGYI**, assistant professor
Department of Forensic Medicine

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 5

Number of hours/semester: 14 lectures + 0 practices + 14 seminars = total of 28 hours

Headcount limitations (min-max.): min. 5 – max. 100

Prerequisites: OAAEL2 completed

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**Topic**

International trends clearly show that besides traditional health care, complementary medicine, prevention, and self-care technics obtain an increasing role. The majority of European countries have successfully integrated several acknowledged branches of complementary medicine into their curriculum, we begin this kind of training in our higher education right now. The 104 § of 1997/CLIV. law on Health care (hereafter: the law) gives orders on non-conventional procedures. According to this, the law regulates the possible activities carried out by professional graduates.

The aim of non-conventional medicine and the procedures that improve the quality of life (non-conventional, Complementary medicine) is to prevent diseases, and to make prevention possible against the factors that endanger or damage human health. The methods that belong mainly to this healing category have great importance in the field of chronic diseases and prevention. Non-conventional methods are based on the different attitude to health and disease, they rely on a different approach that is unusual in the conventional, scientifically based methods. These non-conventional methods - regulated by law separately – complete or substitute conventional healing methods, or improve the state of health. As substitute methods these can only be practised under medical control, or administered by a medical doctor only.

The aim of the course is to provide the students with special knowledge. Therefore the students will be able to put this high level professional and general knowledge into practice, will possess the proper human and ethical behaviour, as well as vocation and responsibility during their medical practice. They will also be able to read scientific literature both in Hungarian and in a foreign language. In the possession of all the above mentioned knowledge and skills the would-be doctors will be able to perform on a high professional level.

Conditions for acceptance of the semester

via written test.

Making up for missed classes

In case of two unexcused absences the student can still be sent to exam.

Options of compensating absences: visit of a later seminar or private consultation.

Reading material


Lectures

1. Non-conventional medicine”/Complementary medicine, CAM/
   Dr. Hegyi Gabriella
2. The theoretical and practical basics of Traditional Chinese Medicine
   Dr. Hegyi Gabriella
3. The theoretical and practical basics of Traditional Chinese Medicine
   Dr. Hegyi Gabriella
4. The theoretical and practical basics of Traditional Chinese Medicine
   Dr. Hegyi Gabriella
5. Manualtherapy/ Manual medicine
   Dr. Hegyi Gabriella
6. Manualtherapy/ Manual medicine
   Dr. Hegyi Gabriella
7. Neural therapy
   Dr. Hegyi Gabriella
8. Fitotherapy / application of herbal plants
   Dr. Hegyi Gabriella
9. Physiotherapy / complementary physiotherapy
   Dr. Hegyi Gabriella
10. Foundations and appliability Ayurveda- the ancient hindu healing
    Dr. Hegyi Gabriella
11. The healing of anthroposophy
    Dr. Hegyi Gabriella
12. Homeopathia as „simile similibus”
    Dr. Hegyi Gabriella
13 Lifestyle advice – health improvement
   Dr. Hegyi Gabriella
14 Consultation, Test
   Dr. Hegyi Gabriella

Practices

Seminars
1 Acupressure
2 Reflexology, Chinesiology
3 Chinese massage, complemeniter movement and massage
4 Eye training
5 NADA detoxicating program in case of alcohol abuse
6 Cardiovascular diseases
7 Tumors
8 Locomotor disorders
9 Allergies
10 Metabolism disorders
11 Different kinds of hormonal diseases
12 Mental disorders, treatment options of patients suffering from panic and depressive mood disorders in complementary medicine
13 Discussion
14 Test and discussion

Exam topics/questions
There will be a written multiple-choice test at the end of the semester. The questions will include the material from seminars and lectures. Note that not all material can be found in sourcebooks.

Participants
Dr. Csütörtöki Krisztina (CSKSAAP.PTE), Dr. Hegyi Gabriella (HEGRAAO.PTE)
**OAFN27 CLINICAL HUNGARIAN 1.**

**Course director:** DR. RÉBÉK-NAGY GÁBOR, associate professor
Department of Languages for Specific Purposes

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 5</th>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong> 0 lectures + 28 practices + 0 seminars = total of 28 hours</td>
</tr>
<tr>
<td><strong>Headcount limitations (min-max.):</strong> min. 3 – max. 25</td>
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<tr>
<td><strong>Prerequisites:</strong> OAEH4A completed</td>
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**Topic**
The aim of the course is to help foreign students of the English Program survive during their clinical studies in Hungary through developing appropriate language competencies and also widen the scope of existing competencies in the field of doctor-patient communication.

At present teaching in Medical Hungarian is provided in the first 4 semesters when students do not participate in clinical studies. Therefore this course offered for the fifth and sixth semesters to enable students to cope with language, tasks in their clinical studies.

**Conditions for acceptance of the semester**
Taking part in the lessons is obligatory. Absences between 15% and 25% can be verified by the course director. Absences above 25% can’t be accepted, the course is not completed.

**Making up for missed classes**

**Reading material**
It can be bought at the Department.

**Lectures**

**Practices**

1. Ismétlés - Revision
2. Ismétlés - Revision
3. Magas vérnyomás, gyomorvérzés, epehólyag műtétként; high blood pressure, bleeding in the stomach, cholecystectomy
4. Magas vérnyomás, gyomorvérzés, epehólyag műtétként; high blood pressure, bleeding in the stomach, cholecystectomy
5. Mellkasi fájdalomban, székelési panaszok; Chest pain, complaints on defecation
6. Mellkasi fájdalomban, székelési panaszok; Chest pain, complaints on defecation
7. Vizelési problémák, transzfúzió szív-és érrendszeri betegségek; Problems on urination, blood transfusion, cardiovascular problems
8. Vizelési problémák, transzfúzió szív-és érrendszeri betegségek; Problems on urination, blood transfusion, cardiovascular problems
9. Pajzsmirigy túlműködés, hasnyálmirigygyulladás; Hyperthyroidism, pancreatitis
10. Pajzsmirigy túlműködés, hasnyálmirigygyulladás; Hyperthyroidism, pancreatitis
11. Betegknek szóló utasítások; Giving instructions to patients
12. Betegknek szóló utasítások; Giving instructions to patients
13. Vakbélgyulladás, végbélgyulladás; Appendicitis, rectal tumour, intestinal obstruction
14. Vakbélgyulladás, végbélgyulladás; Appendicitis, rectal tumour, intestinal obstruction
15. Nyelönögdaganat, gyomorfékely, epehólyaggyulladás; Oesophageal tumour, gastric ulcer, cholecystitis
16. Nyelönögdaganat, gyomorfékely, epehólyaggyulladás; Oesophageal tumour, gastric ulcer, cholecystitis
17. Sérvek, visszér, trombózis Hernias, varicose veins, thrombosis
18. Sérvek, visszér, trombózis Hernias, varicose veins, thrombosis
19. Epekőves görcs, gyomordaganat; Cholelithiasis, gastric cancer
20. Epekőves görcs, gyomordaganat; Cholelithiasis, gastric cancer
21. Aranyérbeteség, lágyéksér; Haemorrhoids, inguinal hernia
22. Aranyérbeteség, lágyéksér; Haemorrhoids, inguinal hernia
23. Gyógyszerfajták, gyógyszererők, gyógyszerártalom; Types of medications, prescribing medications based on patient complaints, side-effects of drugs
24. Gyógyszerfajták, gyógyszererők, gyógyszerártalom; Types of medications, prescribing medications based on patient complaints, side-effects of drugs
25. Balesetek, égési sérülések, törések; Accidents, injuries, fractures
26. Balesetek, égési sérülések, törések; Accidents, injuries, fractures
27. Műtét előtti vizsgálat, altatás előtt és után használt szakkifejezések, értékelés; Patient examination before an operation, expressions used before and after anaesthesia, evaluation.
28. Műtét előtti vizsgálat, altatás előtt és után használt szakkifejezések, értékelés; Patient examination before an operation, expressions used before and after anaesthesia, evaluation.
Seminars

Exam topics/questions
Kettő írásbeli dolgozat
Négy szóbeli prezentáció

Participants
Dr. Hegedűs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Judit (HASMAAO.PTE), Horváth Lilla Anita (HOLFABP..PTE), Kurdiné Molnár Eszter (KUMPAAK.PTE), Lokodiné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Móríczné Györfy Mária (MOGPAAP.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
OAFNMN  NEUROIMAGING METHODS IN NEUROPSYCHOLOGICAL RESEARCH

Course director: ÁDÁM FELDMANN, assistant lecturer
Department of Behavioural Sciences

1 credit • midterm grade • Optional module • autumn semester • recommended semester: 5

Number of hours/semester: 0 lectures + 7 practices + 7 seminars = total of 14 hours

Headcount limitations (min-max.): min. 1 – max. 10

Prerequisites: -

Topic
The aim of the course is to give an introduction to structural and functional MRI methods in field of neuropsychology. The students will be introduced to methods of fMRI experimental planning and statistical analysis.

Conditions for acceptance of the semester
Participation in class work is obligatory. In case absences exceed 25% of total class time the course must be regarded as uncompleted. Successful written examination.

Making up for missed classes
Should be discussed with the course tutor in each individual case.

Reading material

Lectures

Practices
1. Functional MRI and sMRI basics, softwares, file formats, data types
2. Experimental planning
3. Preprocessing steps in a single case and multiple case studies using SPM.
4. Functional MRI statistics (individual and group analyses) using SPM.
5. Controlling nuisance variables using SPM.
6. Cognitive functional network analysis using SPM.
7. Test

Seminars
1. History of neuroimaging, elements.
2. fMRI and sMRI basics.
3. Experimental design (block design).
4. Advanced experimental design (event-related fMRI).
5. Preprocessing steps and statistical analysis (hypothesis and data-driven methods).
6. Mapping cognitive functional networks and complex studies
7. Summary

Exam topics/questions

Participants
Feldmann Ádám (FEAFAD.BJPTE)
UP MS General Medicine major – Elective and Optional subjects – academic year of 2011/2012

OAFPNY Lymphoid Organogenesis - From Embryos to Inflammations

Course director: DR. PÉTER BAŁOGH, associate professor
Department of Immunology and Biotechnology

1 credit • midterm grade • Optional module • autumn semester • recommended semester: 5

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 3 – max. 30

Prerequisites: OAAIMM completed + OAASF1 completed + OAASF2 completed

Topic
The aim of this course is to present a comprehensive overview of peripheral lymphoid organogenesis, and its implications in the pathological (ectopic) formation of organized lymphoid tissues in chronic inflammations.

Conditions for acceptance of the semester
Regular attendance to the seminars. Absences may not exceed the limit set out in the Rules and Regulations.

Making up for missed classes
Not possible.

Reading material
none

Lectures
1 Introduction: of mice and men
   Dr. Balogh Péter
2 Overview of hemopoietic differentiation
   Dr. Balogh Péter
3 Development of lymphatic vasculature
   Dr. Balogh Péter
4 Peripheral lymph node development 1.
   Dr. Balogh Péter
5 Peripheral lymph node development 2.
   Dr. Balogh Péter
6 Organization of mucosal lymphoid tissues
   Dr. Balogh Péter
7 Development of Peyer’s patches
   Dr. Balogh Péter
8 Cryptopatches and ILFs
   Dr. Balogh Péter
9 Development of spleen I.
   Dr. Balogh Péter
10 Development of spleen II.
    Dr. Balogh Péter
11 Chronic inflammation - lymphoid neogenesis
   Dr. Balogh Péter
12 Therapeutic targets I. Cytokines
   Dr. Balogh Péter
13 Therapeutic targets II. Cell surface molecules
   Dr. Balogh Péter
14 Consultation/Exam
   Dr. Balogh Péter

Practices

Seminars

Exam topics/questions

none

Participants
OAFH61 HUNGARIAN FOR FOREIGNERS C2 - MASTERY HUNGARIAN - PART 1

Course director: KATALIN PELCZ, language teacher
International Studies Center

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 6

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours

Headcount limitations (min-max.): min. 4 – max. 12

Prerequisites: OAFH62 parallel + OAFH51 completed

Topic
The Mastery Hungarian course puts further emphasis on oral skills, grammar and reading comprehension. Students are expected to discuss relevant topics (such as up-to-date newspaper articles or TV reports), make oral presentations and join group discussions. Shows great flexibility reformulating ideas in differing linguistic forms to convey finer shades of meaning precisely, to give emphasis, to differentiate and to eliminate ambiguity. Also has a good command of idiomatic expressions and colloquialisms.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted. In the case of unforeseen matters happen and the absence of the students is not verifying by medical certificate, the students will have the possibility to discuss the case with his/her teacher and present an essay which topic basis on the personal discussion.

Reading material
Lectures

Practices

Seminars
1 Nyelvtanulási szokások
2 Irodalom
3 Világörökségi helyszínek
4 Magyar konyha
5 Karrier, életcélok
6 A férfi és a nő
7 Környezetvédelem
8 Aktuális gazdasági és társadalmi kérdések; közélet és politika.

Exam topics/questions
Themes and grammatical units are adjusted to the needs of the group.

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
OAFH62 HUNGARIAN FOR FOREIGNERS C2 - MASTERY HUNGARIAN - PART 2
Course director: KATALIN PELCZ, language teacher
International Studies Center

2 credit • Midsemester grade • Optional module • Both semesters semester • Recommended semester: 6
Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 4 – max. 12
Prerequisites: OAFH61 parallel + OAFH52 completed

Topic
The Mastery Hungarian course puts further emphasis on oral skills, grammar and reading comprehension. Students are expected to discuss relevant topics (such as up-to-date newspaper articles or TV reports), make oral presentations and join group discussions. Shows great flexibility reformulating ideas in differing linguistic forms to convey finer shades of meaning precisely, to give emphasis, to differentiate and to eliminate ambiguity. Also has a good command of idiomatic expressions and colloquialisms.

Conditions for acceptance of the semester
75% of class attendance, successful oral and written exam at the end of the course

Making up for missed classes
75% of the lessons are obligatory. Medical certificate is accepted. In the case of unforeseen matters happen and the absence of the students is not verifying by medical certificate, the students will have the possibility to discuss the case with his/her teacher and present an essay which topic basis on the personal discussion.

Reading material

Lectures
Practices
Seminars
1. Nyelvtanulási szokások
2. Irodalom
3. Világorökségi helyszínek
4. Magyar konyha
5. Karrier, életcéllok
6. A férfi és a nő
7. Környezetvédelem
8. Aktuális gazdasági és társadalmi kérdések; közélet és politika.

Exam topics/questions
Themes and grammatical units are adjusted to the needs of the group.

Participants
Pelcz Katalin (PEKAAD.B.JPTE)
OAFIM2 IMMUNOPATHOLOGY 2

Course director: DR. JÚLIA SZEKERES, professor
Department of Medical Microbiology and Immunology

2 credit • midsemester grade • Optional module • spring semester • recommended semester: 6

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 4 – max. 30
Prerequisites: OAAMB2 completed + OAAIMM completed

Topic
After reviewing the normal functions of the immune system the course focuses on mechanisms resulting in pathological functioning. The following topics will be covered; immunity to infections, anti-tumor immunity, reproductive immunity, transplantation immunology, autoimmunity, hypersensitivity, immunology of AIDS, neuroimmunology.

Conditions for acceptance of the semester
attending at least 80% of the lectures

Making up for missed classes
literature

Reading material

Lectures
1. The functioning of the immune system
   Dr. Szekeres Júlia
2. The functioning of the immune system
   Dr. Szekeres Júlia
3. Immunity to extracellular pathogens
   Dr. Szekeres Júlia
4. Immunity to extracellular pathogens
   Dr. Szekeres Júlia
5. Cytokines, acute phase reaction
   Dr. Szekeres Júlia
6. Immunity to viruses
   Dr. Szekeres Júlia
7. Immunity to viruses
   Dr. Szekeres Júlia
8. The immunology of HIV infection
   Dr. Szekeres Júlia
9. Immunity to parasites
   Dr. Szekeres Júlia
10. Immunity to parasites
    Dr. Szekeres Júlia
11. Pathogenetic role of anti-microbial immune response
    Dr. Szekeres Júlia
12. Pathogenetic role of anti-microbial immune response
    Dr. Szekeres Júlia
13. Mucosal immunity
    Dr. Szekeres Júlia
14. Mucosal immunity
    Dr. Szekeres Júlia
15. Hypersensitivity
    Dr. Szekeres Júlia
16. Hypersensitivity
    Dr. Szekeres Júlia
17. Autoimmunity
    Dr. Szekeres Júlia
18. Autoimmunity
    Dr. Szekeres Júlia
19. Reproductive immunology
    Dr. Szekeres Júlia
20 Reproductive immunology
   Dr. Szekeres Júlia
21 Transplantation
   Dr. Szekeres Júlia
22 Transplantation
   Dr. Szekeres Júlia
23 Tumor immunology
   Dr. Szekeres Júlia
24 Tumor immunology
   Dr. Szekeres Júlia
25 Neuro-immune-endocrine interactions
   Dr. Szekeres Júlia
26 Neuro-immune-endocrine interactions
   Dr. Szekeres Júlia
27 Immunological methods
   Dr. Szekeres Júlia
28 Immunological methods
   Dr. Szekeres Júlia

Practices
Seminars
Exam topics/questions
Participants
OAFIRE CELULAR MECHANISMS OF IMMUNE-REGULATION: BASICS AND THERAPEUTICAL CONSIDERATIONS

Course director: DR. PÉTER ENGELMANN, assistant professor
Department of Immunology and Biotechnology

1 credit • midssemester grade • Optional module • spring semester • recommended semester: 6

Number of hours/semester: 0 lectures + 0 practices + 13 seminars = total of 13 hours
Headcount limitations (min-max.): min. 3 – max. 30
Prerequisites: OAAIMM completed

Topic
The course describes the cellular interactions in immune-regulation, emphasizing the function of immune-regulatory lymphocytes such as gamma/delta T cells, NKT cells and regulatory T cells. The students will have an overview of the newest research implications about the immune-regulation in immunopathological processes.

Conditions for acceptance of the semester
referral, max. 2 absences from the seminars
Making up for missed classes
individual preparation

Reading material

Lectures

Practices

Seminars
1. Central and peripheral tolerance
2. Characteristics and function of NK cells
3. Characteristics and function of NKT cells
4. Characteristics and function of gamma/delta T cells
5. Definition of regulatory T cells; natural and induced regulatory T cells
6. Characteristics and function of Th17 cells
7. Immune regulation in infections
8. Immune regulation in pathological immune processes I: autoimmunity
9. Immune regulation in pathological immune processes II: tumorimmunology
10. Immune regulation in pathological immune processes III: transplantation
11. Immune regulation in pathological immune processes IV: allergy, asthma
12. Immune regulation in pregnancy
13. Immune regulation in neuroimmunology

Exam topics/questions

Participants
Dr. Boldizsár Ferenc (BOFFAAO.PTE), Dr. Engelmann Péter (ENPAAA.T.JPTE), Dr. Engelmann Péter (ENPAAA.T.JPTE), Dr. Engelmann Péter (ENPAAA.T.JPTE), Dr. Mikó Éva (MIEFAAO.PTE), Dr. Mikó Éva (MIEFAAO.PTE), Dr. Mikó Éva (MIEFAAO.PTE), Dr. Mikó Éva (MIEFAAO.PTE), Dr. Szereday László (SZLPAAP.PTE), Dr. Szereday László (SZLPAAP.PTE), Dr. Szereday László (SZLPAAP.PTE), Dr. Szereday László (SZLPAAP.PTE)
Chemoprevention is the administration of natural or (semi)synthetic agents to prevent induction, to inhibit, or to delay the progression of diseases. The focus is - according to the classical definition - on cancer chemoprevention. Getting to know with the molecular basics behind the diseases establish the (pre)clinical studies of a potent chemical to become medicine.

The way from an attractive chemical to a potent chemopreventive strategy in practice will also be discussed. Knowing recent achievements and publications helps a practitioner to involve chemoprevention in every-day practice to save human lives.

**Conditions for acceptance of the semester**
Attending the lectures is compulsory, attendance list is applied.
One absence is accepted, if more the signature of the semester is refused.
Grading is based on an essay that has to be prepared during the semester based on the lectures and scientific literature.
Correction of grades is possible during the exam period.

**Making up for missed classes**

**Reading material**

**Lectures**

1. Introduction; Chemoprevention as a prevention strategy I.
   Dr. Szabó István
2. Introduction; Chemoprevention as a prevention strategy II.
   Dr. Szabó István
3. Interventing the multistep carcinogenesis; anti-initiation strategies I.
   Dr. Szabó István
4. Interventing the multistep carcinogenesis; anti-initiation strategies II.
   Dr. Szabó István
5. Interventing the multistep carcinogenesis; inhibition of promotion and progression I.
   Dr. Szabó István
6. Interventing the multistep carcinogenesis; inhibition of promotion and progression II.
   Dr. Szabó István
7. Antioxidants I.
   Dr. Szabó István
8. Antioxidants II.
   Dr. Szabó István
9. Clinical trial of chemopreventive substances I.
   Dr. Szabó István
10. Clinical trial of chemopreventive substances II.
    Dr. Szabó István
11. Chemopreventive medicine from nature I.
    Varjas Timea
12. Chemopreventive medicine from nature II.
    Varjas Timea
13. Chemopreventive dietary factors I.
    Dr. Szabó István
14. Chemopreventive dietary factors II.
    Dr. Szabó István

**Practices**

**Seminars**

**Exam topics/questions**

**Participants**
OAFN28  CLINICAL HUNGARIAN 2.
Course director: DR. RÉBÉK-NAGY GÁBOR, egyetemi docens
Department of Languages for Specific Purposes

2 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 6

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Headcount limitations (min-max.): min. 3 – max. 25
Prerequisites: OAEH4A completed

Topic
The aim of the course is to help foreign students of the English Program survive during their clinical studies in Hungary through developing appropriate language competencies and also widen the scope of existing competencies in the field of doctor-patient communication.

At present teaching in Medical Hungarian is provided in the first 4 semesters when students do not participate in clinical studies. Therefore this course offered for the fifth and sixth semesters to enable students to cope with language, tasks in their clinical studies.

Conditions for acceptance of the semester
Taking part in the lessons is obligatory. Absences between 15% and 25% can be verified by the course director. Absences above 25% can’t be accepted, the course is not completed.

Making up for missed classes

Reading material
It can be bought at the Department.

Lectures

Practices
1. Anamnézis felvétel, családi és szociális anamnézis  History taking, (family and social history)
2. Anamnézis felvétel, családi és szociális anamnézis  History taking, (family and social history)
3. Korábbi betegségek, panasz, fájdalom jellege, iránya, helye  Previous illnesses, complaints, character, radiation, location of pain
4. Korábbi betegségek, panasz, fájdalom jellege, iránya, helye  Previous illnesses, complaints, character, radiation, location of pain
5. A leggyakrabban használt lehetséges magyar kérdések és válaszok a belgyógyászatban  The most frequently used questions and answers in Internal Medicine
6. A leggyakrabban használt lehetséges magyar kérdések és válaszok a belgyógyászatban  The most frequently used questions and answers in Internal Medicine
7. Kórlap kitöltése  Writing medical records
8. Kórlap kitöltése  Writing medical records
9. Párbeszéd írása megadott információs alapján. Wiriting dialogues on the basis of given information
10. Párbeszéd írása megadott információs alapján. Wiriting dialogues on the basis of given information
11. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 1. Improving listening comprehension on the basis of dialogues and case studies
12. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 1. Improving listening comprehension on the basis of dialogues and case studies
13. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 2. Improving listening comprehension on the basis of dialogues and case studies
14. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 2. Improving listening comprehension on the basis of dialogues and case studies
15. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 3. Improving listening comprehension on the basis of dialogues and case studies
16. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 3. Improving listening comprehension on the basis of dialogues and case studies
17. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 4. Improving listening comprehension on the basis of dialogues and case studies
18. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 4. Improving listening comprehension on the basis of dialogues and case studies
19. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 4. Improving listening comprehension on the basis of dialogues and case studies
20. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 5. Improving listening comprehension on the basis of dialogues and case studies
21. Hallás utáni szövegértés fejlesztése, esettanulmányok és diálogusok alapján 5. Improving listening comprehension on the basis of dialogues and case studies
22 Hallás utáni szövegértés fejlesztése, esettanulmányok és dialógusok alapján 16. Improving listening comprehension on the basis of dialogues and case studies 6.
23 Hallás utáni szövegértés fejlesztése, esettanulmányok és dialógusok alapján 16. Improving listening comprehension on the basis of dialogues and case studies 6.
24 Hallás utáni szövegértés fejlesztése, esettanulmányok és dialógusok alapján 7. Improving listening comprehension on the basis of dialogues and case studies 7.
26 Teszt- Test
27 Értékelés - Evaluation
28 Értékelés - Evaluation

Seminars

Exam topics/questions
Kettő írásbeli dolgozat
Négy szóbeli prezentáció

Participants
Dr. Hegedüs Anita (HEAAAA.B.JPTE), Dr. Rébék-Nagy Gábor (REGCAC.B.JPTE), Dr. Warta Vilmos (WAVEAB.B.JPTE), Hamarné Sávay Júdít (HASMAAO.PTE), Horváth Lilla Anita (HOLFABP..PTE), Kurdné Molnár Eszter (KUMPAAK.PTE), Lokodné Szolcsányi Judit (LOSIAAB.PTE), Mészégetőné Halmos Éva (MEHHABE.PTE), Mórnczné Győrffy Mária (MOGPAAP.PTE), Nagy Gabriella (NAGMAAO.PTE), Ronczykné Berta Anikó (BEAAAI.B.JPTE), Váradi Katalin (VAKHAAE.PTE)
**OAFPS HOW TO INTERPRET STATISTICAL RESULTS IN BEHAVIOURAL AND CLINICAL SCIENCES? A PRACTICAL APPROACH.**

**Course director:** DR. ÁRПАD CSАTHÓ, assistant professor  
Department of Behavioural Sciences

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 6

**Number of hours/semester:** 0 lectures + 0 practices + 14 seminars = total of 14 hours

**Headcount limitations (min-max.):** min. 1 – max. 10

**Prerequisites:** -

**Topic**
The general goal of the course is to give a practical introduction to reading statistical parts and results of scientific papers. Beyond the basics, useful statistical knowledge is essential to understanding scientific papers. It gives an overview of the main types of widely used statistical methods and helps in the understanding and interpreting of methods and results.

**Conditions for acceptance of the semester**
Participation in class work is obligatory. In case absences exceed 25% of total class time the course must be regarded as uncompleted. Successful written examination.

**Making up for missed classes**
Should be discussed with the course tutor in each individual case.

**Reading material**

**Lectures**

**Practices**

**Seminars**

1. Examples for methods based on standard deviation, mean and variance (t-probe, one-way ANOVA) I.
2. Examples for methods based on standard deviation, mean and variance (t-probe, one-way ANOVA) II.
4. Examples for regression-based statistics (simple and multivariate regressions) I.
5. Examples for the regression-based statistics (logistic regression, forward and backward methods) II.
6. Examples for general methods (General Linear Model) I.
7. Examples for generalized methods (Generalized Linear Model, Generalized Estimating Equations) II.
8. Examples for classification and clustering methods (factor-analysis, discriminant analysis) I.
9. Examples for classification and clustering methods (cluster-analysis, decision trees) II.
10. Examples for causal models, Structural Equation Modeling (SEM) I.
11. Examples for causal models, Structural Equation Modeling (SEM) II.
12. Examples for meta-analysis (fixed and random effects models, funnel and forest plots, Begg’s and Egger’s methods, sensitivity analysis).
13. Examples for often used data-mining methods in medical sciences.
14. Test

**Exam topics/questions**

**Participants**
Feldmann Ádám (FEAFAD.BJPTE)
**OAFVAE  PATHOPHYSIOLOGY OF BLOOD CELLS**

**Course director:**

DR. MÁRTA BALASKÓ, assistant professor
Department of Pathophysiology and Gerontology

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 6

**Number of hours/semester:**

14 lectures + 0 practices + 0 seminars = total of 14 hours

**Headcount limitations (min-max.):**

min. 3 – max. 100

**Prerequisites:**

OAPKO1 completed

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**Topic**

The course focuses on the pathophysiology of erythropoiesis and on the structural and functional abnormalities of blood cells at a preclinical level. In addition to those of red blood cells, functions and disorders of leukocytes and platelets are discussed. Related functional and clinical conditions together with the pathophysiological basis of possible therapies will also be included. Theory is complemented by case histories.

**Conditions for acceptance of the semester**

Active participation in the lectures (maximum 2 absences), minimum 40% score on the two tests (7. and 14. lecture)

**Making up for missed classes**

An essay on the topic of the missed lecture.

**Reading material**


**Lectures**

1. Erythropoiesis
   Dr. Balaskó Márta
2. Polycythemia vera and spuria: etiology, pathogenesis and complications.
   Dr. Balaskó Márta
3. Morphology of red blood cells, corpuscular hemolytic anemias I.
   Dr. Balaskó Márta
4. Corpuscular hemolytic anemias II., case histories.
   Dr. Balaskó Márta
5. Sickle cell anemia: etiology, pathogenesis, pathophysiology of therapeutic possibilities.
   Dr. Balaskó Márta
   Dr. Balaskó Márta
7. Test 1. Extracorpuscular hemolytic anemia I.
   Dr. Balaskó Márta
8. Extracorporeal hemolytic anemia II. Case studies.
   Dr. Balaskó Márta
9. Abnormalities of the neutrophil granulocytes I.
   Dr. Balaskó Márta
10. Abnormalities of the neutrophil granulocytes II. Case histories.
    Dr. Balaskó Márta
11. Abnormalities of eosinophil and basophil granulocytes I.
    Dr. Balaskó Márta
    Dr. Balaskó Márta
    Dr. Balaskó Márta
    Dr. Balaskó Márta

**Practices**

**Seminars**

**Exam topics/questions**

The grade depends on the test results.

**Participants**
OAFDEP  ANXIETY, DEPRESSION AND SOMATIZATION IN GENERAL MEDICAL PRACTICE  
Course director:  
DR. JÓZSEF VARGA, assistant professor  
Department of Behavioural Sciences

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 7  
Number of hours/semester:  
0 lectures + 14 practices + 0 seminars = total of 14 hours  
Headcount limitations (min-max.):  
min. 5 – max. 16  
Prerequisites:  
OAPMT5 completed

Topic
Anxiety and depression are often unrecognised and not treated, since doctors usually focus on somatic problems. Somatization - another frequent set of functional somatic symptoms - poses a diagnostic challenge for the doctors. This course overviews the diagnostics and therapy of the mentioned disorders in the general practice. Demonstrates the interaction of affective conditions and biological diseases, addresses the borderlines of behavioral medicine and its applications in the medical practice.

Conditions for acceptance of the semester
According to the Code of Studies and Examinations.

Making up for missed classes
Additional practices and homework.

Reading material
Handouts, publications presented at the practices.

Lectures

Practices
1 Affective and cognitive functions of personality, stress, health and illness.
2 Affective and cognitive functions of personality, stress, health and illness.
3 Theories, sources and symptoms of anxiety and depression. Psychological risks and their medical consequences.
4 Theories, sources and symptoms of anxiety and depression. Psychological risks and their medical consequences.
5 Recognising of early symptoms of anxiety and depression; prevention, diagnostics.
6 Recognising of early symptoms of anxiety and depression; prevention, diagnostics.
7 Mechanisms of somatization, symptomatology, diagnostics.
8 Mechanisms of somatization, symptomatology, diagnostics.
9 Communication with the somatizing patient, supportive therapy, patient care.
10 Communication with the somatizing patient, supportive therapy, patient care.
11 Cognitive and behavioral therapeutic approaches.
12 Cognitive and behavioral therapeutic approaches.
13 Case studies.
14 Case studies.

Seminars

Exam topics/questions
A topic presentation + closing test.

Participants
Dr. Tiringer István (TIIHAAE.PTE), Dr. Varga József (VAJGABO.PTE), Kerekes Zsuzsanna (KEZDAJ.TJPTE)
OAFFM2 BASIC CONCEPTS OF HIGHER MATHEMATICS 2

Course director: LÁSZLÓ ÓRI, bioengineer
Institute of Bioanalysis

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 7

Number of hours/semester:

- 7 lectures + 7 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.):

- min. 1 – max. 12

Prerequisites:

- OAFFMA parallel

Topic

This course supports understanding some topics of the Course Medical Informatics
(Feature of control loops and Sampling theory of Shannon)
Fourier-transform is widespread in evaluation of Time-series

Conditions for acceptance of the semester
one occasion absence of Lecture-practice couple
is possible

Making up for missed classes
one occasion consultation is possible

Reading material

Literature:
- Calculus - Gilbert Strong (Via Internet available)
- The Mathematics of Medicine and Biology J.G. Defáres - I.N Sneddon
- Emmanuel C. Ifeachor – Barrie W. Jervis
- Digital Signal Processing, A Practical Approach
  Addison-Wesley Publisher Ltd. 1993

Lectures

1 Refresh knowledge of differential-and integralcalculus
   Óri László
2 First order differential equations
   Óri László
3 Solution of separable differential equations (chemical reactions, etc.)
   Óri László
4 Second Order differential equations
   Óri László
5 Compartment model
   Óri László
6 Orthogonal functions
   Óri László
7 Fourier Transform
   Óri László

Practices

- suits to the lecture

Seminars

Exam topics/questions
activity in practice and solution of problems

Participants

Óri László (ORLMAAP.PTE)
OAFFMA BASIC CONCEPTS OF HIGHER MATHEMATICS

Course director: LÁSZLÓ ÓRI, bioengineer
Institute of Bioanalysis

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 7

Number of hours/semester: 7 lectures + 7 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min 2 – max. 18

Prerequisites: -

Topic
This course presents concepts of the set theory and of the mathematical analysis that are indispensable for understanding differential equations. These equations find application in description of biological and chemical processes. Topics: basic concepts of set theory, of functions, limit calculations of series and functions, differential calculus, further their application in calculating extremas, Taylor series, integral calculus.

Conditions for acceptance of the semester
max 4 lessons absent
Problems in the Seminar must be solved
Making up for missed classes
one consultation possible

Reading material
An introduction to the Mathematics of Medicine and Biology,
J.G Defares Dep. of Physiology, Univ. of Leyden, I.N. Sneddon, Dep. of Math, Univ. of Glasgow
Different Internet-Websites (e.g.: Website of the Institute of Bioanalysis

Lectures
1 Basic concepts and operation of the set theory, Sets of numbers.
Öri László
2 Functiontypes, Concept of functionlimit
Öri László
3 Differentiation of functions, basic derivatives
Öri László
4 Differential calculus
Öri László
5 Application of derivatives
Öri László
6 Indefinite integral
Öri László
7 Definite integral-improper integral
Öri László

Practices
1 Functiontypes, Concept of functionlimit
2 Differentiation of functions, differential calculus
3 Application of derivatives-1
4 Application of derivatives-2
5 Change of variable in an integral, integration by parts-1
6 Change of variable in an integral, integration by parts-2
7 Definite integral-improper integral

Seminars
Exam topics/questions
Solution of tasks

Participants
Öri László (ORLMAAP.PTE)
OAFLKB  LASER TREATMENT IN DERMATOLOGY

Course director: DR. ZITA SZEKERES-BATTYÁNI, associate professor
Department of Dermatology and Venereology

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 7

Number of hours/semester: 10 lectures + 4 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 50
Prerequisites: -

Topic
The first laser treatment was used in dermatology 40 years ago. Argon and CO2 technology based lasers were the initially used applications in treatment of benignant vascular lesions in hereditary and non-hereditary hemangiomas. The cosmetic secondary effects were not acceptable because intensive scar formation. In the last 20 years, laser technology has a revolutionary development. It is widely use in the treatment of many skin lesions and congenital defects, including vascular and pigmented lesions, as well as, for removal of tattoos, scars and wrinkles. Nowadays, there is a wide spectrum of laser and light methods available for skin resurfacing and rejuvenation.

The aims of this course is to explain for students the basics of laser technology, its physical and physiological effects, and types of the laser devices and their indication, detailed information of the vascular malformations, about their clinical appearance and therapeutic options. Beside the vascular malformations, due to the frequent occurrence, different other types of pigment disorders (hypo- and hyper-pigmentations), as well as, the telangiectasias are discussed during the course including the etiology, clinical appearance and advanced laser treatment.

Non-laser Intense Pulsed Light technology is widely used in dermatology, similarly to the laser treatment in vascular and pigmented conditions.

The base of Photodynamic treatment is red light illumination after the methyl laevulic acid (photosensitized) application, on the skin, which results tissue damage. This treatment is indicated in solar keratoses, in superficial basaliomas, and in extensive viral warts.

Conditions for acceptance of the semester
If not more than 1/3 of the obligatory clinical practices is missed. At the end of course the students are obliged to take a semester examination. The examination is oral test, free converse without preliminary questions.

Making up for missed classes
The replacement is not able, 1/3 absence is permitted.

Reading material
David J. Goldberg: Laser Dermatology (Springer, 2010)

Lectures
1 Physical basic and physiological effects of the laser light in the skin
   Dr. Battáni Zita
2 The type of laser lights used in dermatology
   Dr. Battáni Zita
3 Safety standards in everyday laser practice
   Dr. Battáni Zita
4 Haemangiomas, clinical aspects, histology
   Dr. Battáni Zita
5 Laser treatment modalities in hemangiomas
   Dr. Battáni Zita
6 Hairs abnormalities, hypertichosis
   Treatment facilities in hair abnormalities, Epilations modalities
   Dr. Battáni Zita
7 Pigment abnormalities and the treatment opportunities
   Dr. Battáni Zita
8 The Photodynamic treatment (PDT), physical basics, and physiological aspects.
   Dr. Battáni Zita
9 The usage of Intense Pulsed Light (IPL) in dermatology, mode of actions, indications
   Dr. Battáni Zita
10 Photodynamic treatment opportunities, of precancerses, and in situ carcinomas.
   Dr. Battáni Zita
Practices
1. NeYag laser treatment I.
2. PDT treatment I.
3. NeYag laser treatment II.
4. PDT treatment II.

Seminars
Exam topics/questions
List of the lectures:

Physical basic and physiological effects of the laser light in the skin
The type of laser lights used in dermatology
Safety standards in everyday laser practice
Haemangiomas, clinical aspects, histology
Laser treatment modalities in hemangiomas
Hairs abnormalities, hypertichosis
Treatment facilities in hair abnormalities, Epilations modalities
Pigment abnormalities and the treatment opportunities
The Photodynamic treatment (PDT), physical basics, and physiological aspects
Photodynamic treatment opportunities, of precancerses, and in situ carcinomas
The usage of Intense Pulsed Light (IPL) in dermatology, mode of actions, indications

Participants
Dr. Battyáni Zita (BAZGAAO.PTE)
OAFRAR IMMUNOLOGICAL BASIS OF RHEUMATOID ARTHRITIS (RA)

Course director: DR. FERENC BOLDIZSÁR, assistant professor
Department of Immunology and Biotechnology

1 credit • midsemester grade • Optional module • both semesters semester • recommended semester: 7

Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 3 – max. 20
Prerequisites: OAPPA1 completed + OAPPA2 completed

Topic
The aim of the course is to introduce the participants with the immunopathological background of rheumatoid arthritis (RA), paying special attention to the potential molecular and cellular mechanisms, beginning from the clinical features. The topics cover the role of T- and B cells, and cytokine regulation in detail. The role of new T cell groups (regulatory T cells and NKT cells) in the pathogenesis of RA will be discussed. Broadening of the „classical cytokine paradigm” (Th1/Th2): „new” cytokines (IL-17, IL-21, IL-23 and IL-27) and their potential role in RA. Complex, side-by-side discussion of experimental data from human RA patients and RA animal models is a central scope of the course. Getting acquainted with the immunological aspects of RA in detail will help the participants in the understanding of modern therapeutical approaches.

Conditions for acceptance of the semester
Maximum number of absences: 2. Participants will prepare a short talk based on a paper selected by the tutor and related to one of the topics of the seminars.

Making up for missed classes
None.

Reading material
The slides of the seminars will be available on-line on the website of the Department of Immunology and Biotechnology (www.immbio.hu).

Lectures

Practices

Seminars
1 Introduction, the aim of the course, requirements.
2 Natural and pathologic autoantibodies in the blood of healthy and autoimmune patients, the „immunological homunculus”.
3 Clinical features of RA (etiopathology, diagnosis, symptoms) 1.
4 Clinical features of RA (etiopathology, diagnosis, symptoms) 2.
5 Cells in the pathomechanism of RA 1. T cells.
6 Cells in the pathomechanism of RA 2. B cells.
7 Cells in the pathomechanism of RA 3. Regulatory T cells.
8 Cells in the pathomechanism of RA 4. NKT cells.
9 Cytokine regulators of RA 1. The classical Th1/Th2 paradigm.
10 Cytokine regulators of RA 2. IL-17 and other „novel” cytokines (IL-21, IL-23, IL-27).
11 Animal models of RA 1. Introduction, groups.
12 Animal models of RA 2. Induced models (proteoglycan-, collagen-, adjuvant-induced arthritis).
13 Animal models of RA 3. Spontaneous models. (IL-1R antagonist knock-out-, SKG mice)
14 Modern therapeutical approaches of RA.

Exam topics/questions
None.

Participants
Dr. Boldizsár Ferenc (BOFFAAO.PTE), Engelmann Péter (ENPAAA.T.JPTE), Dr. Németh Péter (NEPGAAO.PTE)
OAFSF SPECIALITIES IN OTOLARYNGOLOGY

Course director: DR. JÓZSEF PYTEL, professor
Department of Oto-rhino-laryngology

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 7

Number of hours/semester: 14 lectures + 14 practices + 0 seminars = total of 28 hours

Headcount limitations (min-max.): min. 1 – max. 30

Prerequisites: -

Topic
Specialities, which could not be involved in the regular course. The connection of the cultural civilisation and the ORL

Conditions for acceptance of the semester
Only two missing lectures are accepted

Making up for missed classes
There are no possibilities

Reading material
www.peditop.com

Lectures
1. Laryngeal cancer and the literature (Bahits, Kosztolányi)
   Dr. Pytel József
2. Laryngeal cancer and the history (Emperor Friedrich)
   Dr. Pytel József
3. Laryngeal cancer and the music (Puccini)
   Dr. Pytel József
4. The hearing and the music (Tartini - Beethoven)
   Dr. Pytel József
5. Functional esthetic surgery (Otoplasty, Rhinoplasty)
   Dr. Pytel József
6. Percutan endoscopic Gastrostomy (PEG)
   Dr. Lujber László
7. Snoring and sleepapnea
   Dr. Pytel József
8. Borderline in Functional Endoscopic Sinus Surgery  (Ophthalmology, neurosurgery)
   Dr. Pytel József
9. Otoacoustic Emissions
   Dr. Pytel József
10. Neonatal Hearing Screening
    Dr. Pytel József
11. Basics of the Acoustically Evoked Potentials
    Dr. Pytel József
12. Acoustically evoked potentials: ECoG, BERA, CERA,MLR
    Dr. Pytel József
13. Reconstructions after maior oncological surgery (Miocutan flaps, microvascular flaps)
    Dr. Pytel József
14. Borderlines in the ENT (Dermatology, General surgery, thyroid gland surgery, Neurosurgery etc)
    Dr. Pytel József

Practices
1. Direct laryngoscopy (on larynx of cadaver and pigs)
2. Suture technics, practices on leg of pig
3. Examination of the ear with microscope, Dissection (Drilling) on cadaver temporal bone.
4. Audiological examinations
5. Suture technics under microscopical control
6. Percutan endoscopic Gastrostomy (PEG) (Model-exercises)
7. Snoring and sleep apnea (instruments, aids)
8. Functional Endoscopic Sinus Surgery on cadaver nasal cavity
9. Measurements of Otoacoustic Emissions, TEOAE
10. Plastic flaps and suture technics, Microvascular suture technics
Seminars

Exam topics/questions
It is the same as the list of the lectures.

Participants
Dr. Lujber László (LULPAAP.PTE), Dr. Pytel József (PYJGAAO.PTE), Residents
OAFUMM MEASUREMENTS AND NEW THERAPIES IN THE SYSTEMIC AUTOIMMUNE DISEASES

Course director: DR. LÁSZLÓ CZIRJÁK, professor
Department of Immunology and Rheumatology

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 7

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Headcount limitations (min-max.): min. 5 – max. 25
Prerequisites: OAPMI2 completed + OAPPA2 completed + OAKKIR parallel

Topic
The main objective of the course is to learn the measurements of the activity, prognosis, the quality of life of the systemic autoimmune diseases. During the course practical skills will also be learned. In particular patients with rheumatoid arthritis (DAS28, SDAI, CDI, HAQ), systemic lupus erythematosus (SLEDAI, BILAG), systemic sclerosis (Rodnan skin score) and ankylosing spondylitis (BASDAI, BASFI) will be investigated.
The other theme is the knowledge and the treatment with new innovative drugs, with biologicals. In this context we will deal with the immunopathogenesis of certain diseases. In the official curriculum there is no time to discuss the issues above.

Conditions for acceptance of the semester
Making up for missed classes
none

Reading material
Kelleys Textbook of Rheumatology.

Lectures
1 The forms of the biological therapies. Cytokine, anti-cytokine therapies. The way of action.
   Dr. T. Kovács Katalin
2 Current biological therapies in the rheumatology. TNF antagonists, B cell targeted therapies, costimulation inhibition.
   Dr. Niedermayer Dóra
3 The new treatment of the inflammatory bowel diseases and associated spondylarthropathy.
   Dr. Sütő Gábor
4 Biologicals in rheumatoid arthritis, psoriatic arthritis and ankylosing spondylitis. The daily routine.
   Dr. Horváth Gábor
5 Follow up of the systemic manifestations in systemic autoimmune diseases. Examination and follow up of the kidney and lung involvement.
   Dr. Czirják László
6 New treatments in osteoporosis.
   Dr. Varjú Cecilia
7 Endothelin receptor antagonists, in the treatment of pulmonary hypertension. Autologe stem cell transplantation in the systemic autoimmune diseases.
   Dr. Czirják László
8 Follow up of the systemic autoimmune diseases. What and why to measure? Prognosis, quality of life, activity, severity, test methods and procedures.
   Dr. Czirják László
9 Activity, disability, quality of life in rheumatoid arthritis.
   Dr. Sütő Gábor
10 Follow up in systemic sclerosis.
   Dr. Czirják László
11 Follow up in ankylosing spondylitis and psoriatic arthritis.
   Dr. Horváth Gábor
12 Examination and follow up of the patient with systemic lupus erythematosus.
   Dr. Niedermayer Dóra

Practices
Seminars
Exam topics/questions
1. Introduction. What to measure, why to measure. Prognosis, quality of life, activity, severity, test methods and procedures.
3. Patient follow up in systemic sclerosis.
4. Follow up in ankylosing spondylitis and psoriatic arthritis.
5. The examination and follow up the patient with systemic lupus erythematosus.
6. The forms of biological therapies, the way of action.
7. TNF-alfa blockers, B cell targeted therapies, costimulation inhibition.
10. Autolog stem cell transplantation.
11. New drugs in osteoporosis.
12. Other new things in the field of rheumatology.

Participants
OAEFGTH  GENE THERAPY

Course director: DR. GÉZA SÁFRÁNY, clinical director and head of department
Department of Laboratory Medicine

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 8

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 5 – max. 5
Prerequisites: -

Topic
We wish to give a short overview about the present state of gene therapy, the current ongoing clinical trials and the potential side effects of gene therapy and about the ethical considerations. The various viral and non-viral gene delivery protocols suitable for high efficiency gene delivery both under in vitro and in vivo conditions will be discussed in details. Gene therapy protocols applied in the treatment of malignant diseases will be presented together with the results of ongoing clinical trials. We will talk about the results and the potentials of the treatments of inherited genetic disorders. One of the most promising field of the current clinical trials is the treatment of ischemic diseases, the results will be presented. The potential applications of stem cells during gene therapy will be described, as well. Finally, we will discuss the side effects occurring during gene therapy and the ethical considerations will also be mentioned.

Conditions for acceptance of the semester
In the case of maximum 2 unexcused absences the student is allowed to take the exam.

Making up for missed classes
Joining later seminars, individual consultations.

Reading material
3. Recent Development in Gene Therapy. Jim Xiang (Editor)

Lectures
1. Introduction to gene therapy, ongoing clinical trials
   Dr. Sáfrány Géza
2. Gene delivery protocols, viral vectors applied in gene therapy
   Dr. Sáfrány Géza
3. Targeted gene delivery and targeted gene expression
   Dr. Miseta Attila
4. The human genome project and the application of its results in molecular medicine
   Dr. Sáfrány Géza
5. Requirements for the clinical applications for gene therapy
   Dr. Sáfrány Géza
6. Gene directed enzyme pro-drug therapy of malignant diseases
   Dr. Sáfrány Géza
7. Immune therapy of malignant diseases
   Dr. Sáfrány Géza
8. Radiation-driven gene therapy of malignant disease
   Dr. Sáfrány Géza
9. Stem cells in gene therapy
   Dr. Sáfrány Géza
10. Treatment of immune-deficiencies with gene therapy
    Dr. Sáfrány Géza
11. Gene therapy of ischemic diseases
    Dr. Sáfrány Géza
12. Gene therapy of cystic fibrosis
    Dr. Miseta Attila
13. Gene therapy of hematopoietic disorders
    Dr. Sáfrány Géza
14. Ethical considerations of gene therapy
    Dr. Sáfrány Géza
Practices
Seminars

Exam topics/questions
Multiple choice tests for checking the acquisition of course material is given at the end of semester. Questions include material discussed in lectures and seminars. It is important to know that part of the material cannot be found in textbooks.

Participants
OAFIRK  ISCHEMIA-REPERFUSION INJURIES OF ORGANS AND TISSUES

Course director: DR. JÁNOS LANTOS, associate professor
Department of Surgical Research and Techniques

1 credit • midssemester grade • Optional module • spring semester • recommended semester: 8
Number of hours/semester: 0 lectures + 0 practices + 14 seminars = total of 14 hours
Headcount limitations (min-max.): min. 2 –
Prerequisites: OAPKO2 completed + OAPPA2 completed

Topic
The aim of the course is to give a comprehensive overview of the ischemia-reperfusion injury that plays a basic role in the pathomechanism of many diseases.

Many clinical conditions are caused by interruption of blood flow to tissues. In treating such conditions the aim is to restore the blood supply of the ischemic tissue. Paradoxically, restoration of blood flow can lead to further tissue damage with the potential for severe local and systemic injury. The course focuses the pathological and biochemical processes involved in ischemia-reperfusion injury and gives an overview of the strategies that may be adopted to mitigate or prevent such injury.

Conditions for acceptance of the semester
According to the Code of Studies and Regulations.

Making up for missed classes
Each missed lesson has to be supplied with an extra report.

Reading material

Lectures

Practices

Seminars
1 Definition of ischemia, experimental models for the investigation of I-R injury.
2 Influence of ischemia on cerebral energy metabolism.
3 Functional changes in the brain during I-R.
4 Changes in tissue oxygen tension and extracellular ion concentrations during I-R.
5 Free radicals, and free radical reactions.
6 Endogenous antioxidants, and the role of free radical reactions in reperfusion injury.
7 Leukocyte-endothelial cell interaction during I-R.
8 Adhesion molecules and signal transduction during I-R.
9 Recovery events following cerebral ischemia.
10 Effect of hypo- and hyperthermia, hypo- and hyperglycemia on I-R injury.
11 Pharmacologic treatment of I-R injury in the brain.
12 Endogenous adaptation, ischemic preconditioning in the heart.
13 Ischemic preconditioning of the brain.
14 Cardiopulmonary-cerebral resuscitation.

Exam topics/questions
http://soki.aok.pte.hu/

Participants
Dr. Lantos János (LAJMAAO.PTE), Dr. Mühl Diána (MUDMAAO.PTE)
OAFMIS  BASIS OF MINIMALLY INVASIVE SURGERY

Course director:  
DR. GYÖRGY WÉBER, professor  
Department of Surgical Research and Techniques

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 8

Number of hours/semester:  
0 lectures + 14 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.):  
min. 3 – max. 16

Prerequisites:  
OAKSE1 parallel + OAESMT completed

Topic
For the safe use of laparoscopic technique specific skills are needed that can be achieved by practicing. The aim of the course is to augment the theoretical knowledge and manual skills of the students interested in minimal invasive surgery.

Conditions for acceptance of the semester
According to the code of studies.

Making up for missed classes
Attendance in every practice is obligatory. Because of limited capacity of operating theatre, absence cannot be repeated by joining another group.

Reading material
http://soki.aok.pte.hu/

Lectures

Practices
1 Acquisition of hand-eye coordination. Thematic exercises on pelvitrainer.
2 Acquisition of hand-eye coordination. Thematic exercises on pelvitrainer.
3 Practicing of laparoscopic preparation in pelvitrainer.
4 Practicing of laparoscopic preparation in pelvitrainer.
5 Practicing of laparoscopic extracorporal knotting technique in pelvitrainer.
6 Practicing of laparoscopic extracorporal knotting technique in pelvitrainer.
7 Practicing of laparoscopic intracorporal knotting technique in pelvitrainer.
8 Practicing of laparoscopic intracorporal knotting technique in pelvitrainer.
9 Laparoscopic cholecystectomy on isolated organs in pelvitrainer.
10 Laparoscopic cholecystectomy on isolated organs in pelvitrainer.
11 Laparoscopic cholecystectomy on anesthetized animal.
12 Laparoscopic cholecystectomy on anesthetized animal.
13 Video assisted thoracic surgery: instruments and technique on anesthetized animal.
14 Video assisted thoracic surgery: instruments and technique on anesthetized animal.

Seminars

Exam topics/questions
http://soki.aok.pte.hu/

Participants
Dr. Balatonyi Borbála (BABHAAO.PTE), Dr. Borsiczky Balázs (BOBQAAO.PTE), Dr. Ferenc Andrea (FEAMAAO.PTE), Dr. Ferencz Sándor (FESDAA.T.JPTE), Dr. Jávor Szaniszló (JASHAAO.PTE), Dr. Lantos János (LAJM AAO.PTE), Dr. Wéber György (WEGMAAO.PTE)
OAFSUB  RADIATION BIOLOGY

Course director: DR. GÉZA SÁFRÁNY, clinical director and head of department
Department of Laboratory Medicine

2 credit  •  midsemester grade  •  Optional module  •  spring semester  •  recommended semester: 8

Number of hours/semester: 14 lectures + 0 practices + 14 seminars = total of 28 hours

Headcount limitations (min-max.): min. 2 – max. 150

Prerequisites: -

Topic

The course will focus on the better understanding of radiation effects on the whole organisms, tissues and cells, as well as on the cellular causes leading to the death of normal and malignant cells. This helps to understand why a given dose of radiation induces tumors in one case while destroys tumor cells in another case. On the basis of radiobiological knowledge one can develop new therapeutic modalities to improve the survival of cancer patients. Radiation biology helps us to understand how and why ionizing radiation can be used to examine healthy and pathological cell structures and to diagnose and treat various diseases.

The aim of radiation therapy is to kill tumor cells without seriously damaging normal tissues. The death of normal cells leading to the development of early and late normal tissue sequel strongly influences the amount of total and fraction doses deliverable to the malignant tissues and by this way the success of radiation therapy. We will describe factors and protocols affecting and suitable to predict radiation-induced reactions in healthy and malignant cells. The effect of dose rate, total- and fraction dose, as well as treatment time on the radiation response of normal and tumor cells will be discussed, too. We will describe in details those new radiotherapy approaches (accelerated-, hyper-fractionated, etc. radiotherapy) which were developed on radiobiological backgrounds. We will discuss those new therapeutic modalities such as gene therapy which can be efficiently combined with radiation therapy. Using up to date methodologies the radiation sensitivity of normal and malignant tissues might be predicted before the onset of radiation therapy and radiation regimens can be adjusted to individual needs. This can improve the survival chances of tumor patients.

Finally, we will discuss the radiation protection measures necessary to minimize the damaging effect of ionizing radiation.

Conditions for acceptance of the semester

In the case of maximum 2 unexcused absences the student is allowed to take the exam.

Making up for missed classes

Joining later seminars, individual consultations.

Reading material


Lectures

1. The importance of radiobiology in clinical diagnostics and therapy. Types of ionizing radiation, natural and artificial sources of radiation.
   Dr. Sáfrány Géza
2. Cellular radiation damages, linear energy transfer and the relative biological effect.
   Dr. Sáfrány Géza
3. Repair of cellular damages at the cellular level, the effect of dose rate on DNA repair.
   Dr. Sáfrány Géza
4. The effect of oxygen on the survival of cells, radio-sensitizing agents, bioreductive drugs.
   Dr. Sáfrány Géza
5. Acute radiobiological injuries in humans and in experimental animal models.
   Dr. Sáfrány Géza
6. Epidemiology and molecular background of radiation-induced tumors.
   Dr. Sáfrány Géza
   Dr. Sáfrány Géza
8. The radiobiological background of fractionated radiotherapy, the importance and application of the linear-quadratic approach in tumor treatment.
   Dr. Sáfrány Géza
9. The role of treatment duration, total and fraction dose in radiotherapy.
   Dr. Sáfrány Géza
10. Radiobiological principles of low and high-dose rate brachytherapy.
    Dr. Sáfrány Géza
    Dr. Sáfrány Géza
12 Gene therapy of malignant tumors: combined modality treatments with radio-chemo- and gene therapy.
   Dr. Sáfrány Géza
13 Risks of occupational exposure to radiation: dose limit in radiation protection.
   Dr. Sáfrány Géza
14 Doses and risks in nuclear medicine: diagnostic applications
   Dr. Zámbó Katalin

Practices

Seminars
1 Basics of radio-physics and radiochemistry: dosimetry, radiolysis, formation of free radicals, direct and indirect effects of radiation.
2 Cell death due to ionizing radiation, survival curves.
3 Radio-protective agents.
4 Genetic and fetal effects of ionizing radiation.
5 Molecular biological principles of tumor development.
6 The Chernobil nuclear accident and its consequences.
7 Proliferation of tumor cells, factors influencing tumor development.
8 Early and late side-effects of radiotherapy.
9 Alternative radiotherapeutic applications: accelerated-, hyper- and hypo-fractionated radiotherapy, particle radiations.
10 The risk of repeated radiotherapy.
11 Scientific protocols applied in radiobiology.
12 Targeted and individual tumor therapy, estimating radiosensitivity, predictive assays.
13 Doses and risks in radiology and imaging diagnostics.
14 Doses and risks in nuclear medicine: therapeutic approaches.

Exam topics/questions
Multiple choice test for checking the acquisition of course material is given at the end of semester. Questions include material discussed in lectures and seminars. It is important to know that part of the material cannot be found in textbooks.

Participants
Dr. Sáfrány Géza (SAGRAAO.PTE), Dr. Zámbó Katalin (BOZMAAO.PTE)
Topic
The aim this course is to teach the students the different anatomical and pathological aspects of the ear diseases and surgical techniques. During the course theoretical and practical presentations and demonstrations will be conducted and the students will have the possibility to perform hands-on cadaver dissection on real temporal bones.

Conditions for acceptance of the semester
Missing of one lectures accepted
Making up for missed classes
No possibility

Reading material
Diseases of the ear (sixth edition, edited by: Harold Ludman and Tony Wright)
Head and Neck Surgery (volume2, edited by: R.A. Jahrsdoerfer, J. Helms)

Lectures
1 Anatomical and functional aspects of the external, middle and inner ear
   Dr. Lujber László
2 Diseases and treatment of the external ear
   Dr. Lujber László
3 Middle ear diseases I.
   Dr. Lujber László
4 Middle ear diseases II.
   Dr. Lujber László
5 Treatment of the middle ear diseases
   Dr. Lujber László
6 Myringoplasty
   Dr. Lujber László
7 Tympanoplasty
   Dr. Lujber László
8 Reconstruction of the ossicular chain.
   Dr. Lujber László

Practices
1 Temporal bone dissection I.
2 Temporal bone dissection II.
3 Temporal bone dissection III.
4 Temporal bone dissection IV.

Seminars
1 Inner ear pathologies and their treatment.
2 Cochlear implantation.

Exam topics/questions
www.ent.pote.hu

Participants
Dr. Lujber László (LULPAAP.PTE)
OAFKLE  CLINICAL ELECTROPHYSIOLOGY

Course director: DR. SIMOR TAMÁS, egyetemi tanár
Heart Institute

1 credit • midsemester grade • Optional module • autumn semester • recommended semester: 9

Number of hours/semester: 4 lectures + 6 practices + 2 seminars = total of 12 hours

Headcount limitations (min-max.): min. 5 – max. 40

Prerequisites: OAPKO1 completed + OAPKO2 completed

Topic
Syllabus:
- The diagnostics and therapy of arrhythmias
- Electrophysiological testing, definitions
- Electrophysiological attributes of supraventricular arrhythmias
- Catheter ablation therapy of atrial flutter, atrial fibrillation, AVNRT and WPW syndrome
- The electrophysiology of ventricular arrhythmias, ICD therapy
- Imaging in electrophysiology
- 3D electroanatomical mapping in atrial fibrillation

Conditions for acceptance of the semester
written exam

Making up for missed classes
once before ending the semester

Reading material
Content of lectures, seminars and practices, Braunwald: Heart Disease

Lectures
1 Clinical electrophysiology 1
   Dr. Simor Tamás
2 Clinical electrophysiology 2
   Dr. Simor Tamás
3 Clinical electrophysiology 3
   Dr. Simor Tamás
4 Clinical electrophysiology 4
   Dr. Simor Tamás

Practices
1 Electrophysiological testing, definitions
2 Electrophysiological attributes of supraventricular arrhythmias
3 Catheter ablation therapy of atrial flutter, atrial fibrillation, AVNRT and WPW syndrome
4 The electrophysiology of ventricular arrhythmias, ICD therapy
5 Imaging in electrophysiology
6 3D electroanatomical mapping in atrial fibrillation

Seminars
1 Imaging in electrophysiology
2 Catheter ablation therapy of atrial flutter, atrial fibrillation, AVNRT and WPW syndrome

Exam topics/questions
Topics regarding the curriculum of the course

Participants
Dr. Simor Tamás (SITMAAO.PTE), Rausch Péter Dr.
Topic
Migration is a rapidly growing global phenomenon. The number of foreign born people within the EU 25 is estimated as high as 50 million. Addressing migrant health goes beyond issues of differing morbidity profiles and vaccination status linked to country of origin or potential for spreading diseases, such as SARS, MDR TB, or tropical diseases. Health and social assistance tailored to migrants needs is also essential, serving their smooth and successful integration with clear social and economic benefit. Public health safety, human rights and health impact of transcultural aspects should be equally addressed. EU external Schengen borders are increasingly exposed to irregular migration. The number of victims of trafficking (the new white slavery) is estimated to hundreds of thousands yearly in the EU. They are seriously abused physically, sexually and psychologically. Their proper care and treatment needs specially prepared staff. The health-related issues of an increasing number of tourists traveling the world for business and leisure further require attention to questions of protection and avoidance of health hazards. Doctors must develop appropriate knowledge of the clinical signs and symptoms of the most common infections in the topics, like malaria, dengue fever, etc. Lack of knowledge in this regard may risk the life of the patients.

The curriculum is turning the attention to and provides the basic knowledge and skills for answering the need generated by the rapidly growing number of migrants and tourists who may appear and ask for assistance at any level of the health care system Europe wide. Recognizing rare diseases, providing proper medical assistance for travelers and migrants is a priority aim of this curriculum while it helps also in coping successfully with intercultural, inter-religious problems and their health impact and understanding well the human rights angle of the successful integration of migrants.

Conditions for acceptance of the semester
Participation in 80% of the lessons
Making up for missed classes
Individual consultation with the lecturers

Reading material
Manson: Tropical Diseases
The Mental Health Aspects of Trafficking in Human Beings, Training manual, IOM Budapest
The IOM Handbook on Direct Assistance for Victims of trafficking, IOM Geneva

Lectures
1 Mass migration. Factors inducing/generating mass migration. Temporary placement of refugees and securing their health care. How can the proper health assistance facilitating the successful integration of regular and labour migrants: tasks and programs. Development and implementation of ‘migrant friendly’ health services. (Prof. Tit. Istvan Szilard MD, PhD)

2 Specific health hazards of different geographic regions. Asia, Africa, South- and Central America, Oceania, Australia, Polar regions
Dr. Ternák Gábor

3 Human rights and forensic medical aspects of migration and travel.
Dr. Huszár András

4 Irregular migration and its main characteristics. Trafficking and smuggling in human beings, refugees. Health impact of the implementation of the ‘Schengen’ border management procedure. (Prof. Tit. Istvan Szilard MD, PhD)
Dr. Ternák Gábor

5 Travellers with special health conditions. Pregnant women, children, persons with known chronic diseases etc.
Dr. Ternák Gábor

6 Environmental factors. Extreme warm and cold climatic effects, health problems caused by altitude (mountaineering) and high pressure (diving), caisson disease. Health insurance of tourists; ensuring return of tourists with health problems.
Dr. Felkai Péter PhD

7 General overview. Current migration and travel trends world wide. Historical overview. Push and pull factors influencing migration trends. Large populations on move; conditions and consequences.
Prof. Tit. István Szilard MD, PhD

8 Health protection and disease prevention of travellers/tourists. Clothing, behaviour, general and specific prevention (vaccination, medicines etc.)
Dr. Ternák Gábor
   Dr. Ternák Gábor
10. Rare infectious diseases. Tropical parasites, Schistosomiasis, Trypanosomiasis, Leprosy, Plague, Rabies, tropical
    insects’-, animals’ bite.
   Dr. Ternák Gábor
11. Irregular migration and related health and public health tasks. Health screenings, most frequent somatic and mental
    health disorders; ensuring proper placement of irregular migrants; health impact of and coping with cultural differences.
    Victims of trafficking and their special health care need.
   Prof. Tit. István Szilard MD, PhD
12. Leading symptoms of diseases acquired during travel/ tourism. Fever, diarrhoea, jaundice/ icterus, rash etc.
   Dr. Ternák Gábor
13. Vector born diseases. Malaria, Yellow fever, Dengue fever, other haemorrhagic fevers, principle symptoms,
    possibilities for prevention
   Dr. Ternák Gábor
14. Health problems related to travel/ tourism. The health-related issues of an increasing number of tourists travelling the
    world for business and leisure require attention to questions of prevention and protection, avoidance of health hazards,
    as well as measures to follow in case of illness. Jet leg.
   Dr. Felkai Péter PhD

Practices

Seminars

Exam topics/questions

1/ Current migration trends and their public health impact in Europe
2/ Travel and tourism related environmental factors
3/ Health hazards related with travel and tourism. Special health insurance conditions
4/ Special health conditions and their excess health hazards during travels
5/ Special health hazards of different geographic regions
6/ Preparations for travel related health hazards and possibilities in risk reduction
7/ Food and water born infections
8/ Vector born diseases
9/ Rare diseases travellers/ tourist may be infected with
10/ Alarming symptoms of rare diseases returnees may contact the health service
11/ Trends and composition of irregular migration directed towards the European Union
12/ Health and public health impact of irregular migration
13/ Migrant friendly health services; their aim and characteristics
14/ Human rights aspects of health care provision for migrants

Participants
OAFUGS UROGENITAL SPECIALITIES

Course director: DR. LASZLÓ FARKAS, professor
Department of Urology

2 credit • midsemester grade • Optional module • autumn semester • recommended semester: 9

Number of hours/semester: 0 lectures + 0 practices + 28 seminars = total of 28 hours
Headcount limitations (min-max.): min. 5 – max. 10
Prerequisites: OAKROL completed

Topic
Specific urogenital subjects are considered those topics which are not mandatory for a medical student. However, they can be discussed according to the applicants’ interest. The topics can be variable, mainly, minimal invasive procedures in urology, urodynamics, uro-oncology, endourology, etc.

Conditions for acceptance of the semester
Presence in at least 80% of the practices is mandatory.
Passing the final oral exam held at the end of the semester is necessary. In the exam, any topic discussed in lectures and/or the practices may be required.

Making up for missed classes
In case of an excused absence, the tutor can decide on the method of compensation.

Reading material
Smith’s General Urology
By: Emil A. Tanagho, Jack W. McAninch
Language: English
ISBN: 978-0-07-145737-8

Lectures
Practices
Seminars
1  Basic neuro-urology
2  Uro-dynamic studies
3  Technical aspects of ESWL
4  Technical aspects of ESWL
5  Andrology
6  Male sexual dysfunctions
7  Alternative, minimal invasive treatment options of BPH
8  Alternative, minimal invasive treatment options of BPH
9  Pediatric urology
10 ESWL in children
11 Laparoscopy in urology
12 Laparoscopy in urology
13 Molecular genetics in uro-oncology
14 Molecular genetics in uro-oncology
15 Anesthesiology in urological operations
16 Urosepsis
17 Photodynamic diagnostic in urology
18 Photodynamic therapy in urology
19 Prosthetics in urology
20 Prosthetics in urology
21 Urinary deviation with minimal invasive tools
22 Urinary deviation with minimal invasive tools
23 Uro-radiology
24 Interventional radiological procedures in urology
25 Endoscopy in urology
26 Endoscopy in urology
27 Radical operations in urology
28 Radical operations in urology
Exam topics/questions
The questions are variable according to the selected topic.

Participants
Dr. Damáslí Miklós (DAMFAAO,PTE), Dr. Pusztai Csaba (PUCMAAO,PTE), Dr. Pytel Ákos (PYAPAAP,PTE), Dr. Szántó Árpád (SZAMABO,PTE), Dr. Székely József (SZJMAAO,PTE), Dr. Szénás-Máthé Jenő (SZJMABO,PTE), Dr. Villányi Kinga (VIKMAAO,PTE)
OAFESN  ENDOVASCULAR SURGICAL NEURORADIOLOGY

Course director: DR. TAMÁS DÓCZI, professor
Department of Neurosurgery

1 credit • midsemester grade • Optional module • spring semester • recommended semester: 10

Number of hours/semester: 0 lectures + 14 practices + 0 seminars = total of 14 hours

Headcount limitations (min-max.): min. 5 – max. 35

Prerequisites: OAAAA2 completed + OAKNE1 completed + OAEIDS parallel

Topic
Neurosurgery is the medical specialty concerned with the prevention, diagnosis, treatment and rehabilitation of disorders that affect the entire nervous system including the spinal column, spinal cord, brain and peripheral nerves.

Endovascular neurosurgery, also known as interventional neuroradiology, utilizes a thin catheter to perform diagnostic and surgical procedures within blood vessels and spinal vertebrae, while using x-ray guidance.

Endovascular surgery is used to treat a variety of cerebrovascular diseases (disorders of the blood vessels of the head and neck) including stroke, aneurysms, tumors, arteriovenous malformations and dural arteriovenous fistulas. Often when these diseases are untreatable through conventional microsurgery, they can be treated through endovascular neurosurgery techniques.

Endovascular procedures are performed in the DSA angiographic suite rather than the microsurgical operating room. A team approach involving neurosurgery, neuroradiology, and neurology combined with the use of the highest quality angiographic equipment is essential for optimal results. Endovascular procedures are often used to visualize blood vessels through cerebral angiography, to open clogged or narrowed arteries, to stabilize weak and bulging vessels or to seal specific blood vessels before surgery to minimize bleeding during the operation.

Patients with a life-threatening condition known as a cerebral aneurysm (a weakness and ballooning of a blood vessel within the head) may benefit from endovascular treatment. This treatment uses detachable coils to stabilize the aneurysm. It may be used as an alternative to surgery in which a clip is placed on the aneurysm.

An arteriovenous malformation (AVM) is a complex mass of abnormal arteries and veins located in the brain or spinal cord. A dural arteriovenous (AV) fistula is a complex mass of abnormal blood vessels creating an interruption and opening of the dura (the leathery covering over the brain).

Conditions for acceptance of the semester
The students are expected to learn all of the topics.

Making up for missed classes
Individual replacement is available

Reading material
http://www.cnsc.hu

Lectures
Practices
1. Vascular anatomy and pathology of the central nervous system
2. Physiology and pathophysiology of the central nervous system
3. Case presentation and analysis (Dr.Schwarz/Dr.Horváth)
4. Case presentation and analysis (Dr.Schwarz/Dr.Horváth)
5. Imaging technology in the neuro-endovascular operating suite (Dr. Kövér)
6. Destructive (obstructive) and reconstructive operating techniques in neuro-endovascular operating suite
7. Case presentation and analysis (Dr.Vető/Dr.Balás)
8. Case presentation and analysis (Dr.Vető/Dr.Balás)
9. Subarachnoid haemorrhage and cerebral aneurysms and arteriovenous malformations
10. Occlusive cerebrovascular diseases
11. Case presentation and analysis (Dr.Vető/Dr.Schwarz)
12. Case presentation and analysis (Dr.Vető/Dr.Schwarz)
13. R&D in in neuro-endovascular operating suite (Dr. Hudák/Prof. Dóczi/Prof. Botz)
14. Case presentation and analysis (Dr.Vető/Dr.Horváth)

Seminars
Exam topics/questions
1. Pathology of saccular aneurysms and arteriovenous malformations.
2. Clinical symptoms and signs of of saccular aneurysms and arteriovenous malformations.
3. Diagnostics of saccular aneurysms and arteriovenous malformations.
4. Treatment of saccular aneurysms and arteriovenous malformations.
5. What is vertebroplasty?
6. Pathophysiology of steal-phenomena and its role in clinical signs of saccular aneurysms and arteriovenous malformations.
Participants
Dr. Büki András (BUAMAO.PTE), Dr. Dóczi Tamás (DOTHAAO.PTE)
OAFSES  EMERGENCY CARE IN SPECIAL SITUATIONS

Course director: DR. TAMÁS MAJOR, clinical director and head of department
Department of Traumatology and Hand Surgery

1 credit • midsession grade • Optional module • both semesters semester • recommended semester: 10

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Headcount limitations (min-max.): min. 1 –
Prerequisites: OAPPA1 parallel

Topic

The course is designed to assist medical students to resolve emergency situations may occur in clinical medicine require interdisciplinary knowledge.

For a physician the biggest challenge is the professional treatment of unexpected emergency situations. In our constantly evolving world with expanding touristic possibilities (adventures to extreme places, expeditions, tropical travel, scuba diving, etc.), the clinician encounters unusual first aid situations that require specialized knowledge. The course is designed to provide future doctors the necessary skills to overcome unexpected emergency situations. The lectures presented by professionals of the specific areas.

Conditions for acceptance of the semester

Making up for missed classes
Consultation

Reading material
Critical Care Medicine

Lectures

1 Anaphylactic shock, allergic reactions diagnosis and treatment
   ifj. Dr. Major Tamás
2 Suffocation (difficult airways)
   Dr. Varga Csaba
3 Emergency situations in SCUBA diving
   ifj. Dr. Major Tamás
4 Drowning, near-drowning *immersion-submersion), sea sickness, nautical medicine - Major T.
   ifj. Dr. Major Tamás
5 Mountain sickness
   Dr. Komlóssy Zsolt
6 Heat shock, overheating, emergencies during sport activities
   Dr. Tarabó Zoltán
7 Toxicology I.: revulsive agents, dros, alcohol etc. Overdosing
   Dr. Varga Csaba
8 Toxicology II.: fungal poisoning
   Dr. Varga Csaba
9 Emergency situations of rare etiology (snakebites in Hungary and abroad)
   Dr. Ternák Gábor
10 Rare infections (tropical diseases)
   Dr. Ternák Gábor
11 Diagnosis and treatment of acut massive pulmonary embolism
   Dr. Sárosi István
12 Exsiccation, electrolit, acid-base balance, homeostasis
   Dr. Velkey György
13 HANO (Hereditaer Angioneurotic Edema) diagnosis and treatment
   Dr. Farkas Henriette
14 Emergency treatment of combustion
   Dr. Csontos Zsolt

Practices

Seminars

Exam topics/questions

Participants
ifj. Dr. Major Tamás (MATSAAO.PTE)