University of Pécs
Medical School

GENERAL MEDICINE
Major

STUDY PROGRAM
2019/2020

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### OAE-BFA-T  PHYSICAL BASIS OF BIOPHYSICS

**Course director:** DR. EMŐKE BÓDIS, assistant professor
Department of Biophysics  •  emoke.bodis@aok.pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 1

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

**Course headcount limitations (min.-max.):** 5 – 150  
**Prerequisites:** none

---

### Topic

The course addresses the chapters of physics which are necessary for a proper understanding of Biophysics (lecture and practicals). Beyond theoretical discussions, example problems are solved.

### Conditions for acceptance of the semester

Maximum 3 absence is allowed.

### Mid-term exams

Making up for missed classes

There is no option.

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
  - Course related information can be found on the website of the Department of Biophysics ([http://biofizika.aok.pte.hu](http://biofizika.aok.pte.hu)).
- **Recommended literature**
  - As a base, any secondary school physics book is useful.

### Lectures

### Practices

### Seminars

1. Mathematical basics. Scalars and vectors
2. Physical quantities and units
3. Newton’s laws
5. Motion on a straight line. Kinetics
6. Motion on a straight line. Dynamics
7. Circular motion, rotation
8. Oscillations
9. Work and energy. Friction
10. The work-energy theorem. Conservation of mechanical energy
11. Hydrostatics
12. Hydrodynamics
13. First and second law of thermodynamics
14. Thermodynamic potentials
15. Electrostatics
16. Ohm’s law, Kirchhoff’s laws
17. Magnetostatics
18. Magnetic induction
19. Waves
20. Wave- and geometrical optics
21. Atom- and nuclear physics
22. Electromagnetic waves
23. Test writing
24. Test writing
Exam topics/questions

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

The seminar strengthens physics theoretical background and provide further understanding through evaluation of exercises (calculations) hence the written test at the end of the semester includes theoretical questions and exercises.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Szabó-Meleg Edina (I0NKTU), Dr. Talián Csaba Gábor (RP9GGL), Leipoldne Víg Andrea Teréz (OL4J1R), Szatmári Dávid (AIX2L6), Takács-Kollár Veronika Tünde (L5EB78), Tóth Mónika Ágnes (GC6VTC)
OAE-B01-T  Biophysics Seminars 1

Course director: Dr. ZOLTÁN UJFALUSI, assistant professor
Department of Biophysics • zoltan.ujfalusi@aok.pte.hu

1 credit • midterm grade • Elective subject • autumn semester • recommended semester: 1

Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 40  Prerequisites: OAA-BI1-T 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.

Mid-term exams
There will be no midterm test.

Making up for missed classes
None. Based on previous agreement with the lecturer the student can attend the seminar with another group another day on the same week.

Reading material
- Obligatory literature
- Literature developed by the Department
  http://biofizika.aok.pte.hu
- Notes
  Damjanovich et al (ed.): Medical Biophysics
- Recommended literature

Lectures
Practices
Seminars
1  Bevezetés
2  Elektromágneses hullámok
3  Kvantumfizika alapok
4  Röntgensugárzás, röntgendiffrakció, lézerek működése
5  Sugárzások biológiai hatása
6  Termodinamika
7  Diffúzió, ozmózis
8  Folyadékáramlás, szív munkája
9  Membránszerkezet, nyugalmi potenciál, akciós potenciál
10  Látás, hallás
11  Citoszkeletális rendszer. Motorfehérjék. Izomműködés
12  Számonkérés

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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Kengyel András Miklós (ENQAMZ), Dr. Lukács András Szilárd (LZ2I4Q), Dr. Szabó-Meleg Edina (I0NKTU), Dr. Ujfalusi Zoltán (AZSO9Z), Szatmári Dávid (AIX2L6), Takács-Kollár Veronika Tünde (L5EB78), Telek Elek (B1IZ13)
OAE-H1A-T  MEDICAL HUNGARIAN 1A - COMMUNICATION SKILLS

Course director: DR. VLIMOS WARTA, associate professor
Department of Languages for Specific Purposes • vilmos.warta@aok.pte.hu

2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 1

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: OAE-H1B-T parallel

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

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Written midterm and end of the term tests are compulsory. Other short written tests to be discussed with the course tutor in each individual case. Several oral tests are taken, dates are to be discussed with the course tutor. Make up tests possible only during the semester classes.

Making up for missed classes
Participation in class work is obligatory. In case absences exceed 25% 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

Reading material
- Obligatory literature
  Anamnézis magyarul (Magyar orvosi szaknyelv kezdőknek) by Renáta Halász, 2015. Pécs
- Literature developed by the Department
  In-house course book: at the homepage of the institute:
- Notes
  In-house course book: at the homepage of the institute:
- Recommended literature

Lectures
Practices
Seminars
1 Greeting people, formality and informality
2 Greeting people, formality and informality
3 Addressing people, men and women
4 Addressing people, men and women
5 Starting conversation, the elderly and children
6 Starting conversation, the elderly and children
7 Introducing, equal and unequal relations
8 Introducing, equal and unequal relations
9 Nutritional History Taking
10 Nutrients
11 Nutrients
12 Test 1
13 Health Preservation, Sports, Addictions
14 Writing CV, occupation, work
15 Medical Specialties, Consulting Room and Ward
16 Telling CV, family relations
17 Introducing family
18 Introducing family
19 Describing people - Internal and external features
20 Describing people - Internal and external features
21 Health care institutions, consolidation
Exam topics/questions

Two written test papers and oral presentation topics to be discussed with the course tutor in each individual case.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SIYRAV), Eklicsné Dr. Lepenyé Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
# OAE-H1B-T  Medical Hungarian 1B - Language Points

<table>
<thead>
<tr>
<th>Course director:</th>
<th>Department of Languages for Specific Purposes • <a href="mailto:vilmos.warta@aok.pte.hu">vilmos.warta@aok.pte.hu</a></th>
</tr>
</thead>
</table>

| 2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 1 |
| Number of hours/semester: | 0 lectures + 0 practices + 24 seminars = total of 24 hours |
| Course headcount limitations (min.-max.): | 3 – 25 |
| Prerequisites: | OAE-H1A-T parallel |

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

## Conditions for acceptance of the semester
Maximum of 25 % absence allowed

## Mid-term exams
Written midterm and end of the term tests are compulsory. Other short written tests to be discussed with the course tutor in each individual case. Several oral tests are taken, dates are to be discussed with the course tutor. Make up tests possible only during the semester classes.

## Making up for missed classes
Participation in class work is obligatory. In case absences exceed 25% 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.

## Reading material
- **Obligatory literature**
  Anamnézis magyarul (Magyar orvosi szaknyelv kezdőknek) by Renáta Halász, 2015. Pécs

- **Literature developed by the Department**

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

- **Recommended literature**

## Lectures

## Practices

## Seminars
1. Basics of Hungarian Phonetics and Morphology
2. Basics of Hungarian Phonetics and Morphology
3. Personal Pronouns - formal and informal style
4. Personal Pronouns - formal and informal style
5. Constructing Questions - Question Words
6. Constructing Questions - Question Words
7. Numerals - Cardinal, Ordinal, Labels
8. Numerals - Cardinal, Ordinal, Labels
9. Verbs - Definite and Indefinite Conjugation
10. Verbs - Definite and Indefinite Conjugation
11. Expressing Frequency
12. Expressing Frequency
13. Test 1
14. Articles
15. Modality - necessity
16. Modality - necessity
17. Objective Case
18. Verbal prefixes
19. Expressing Time
20. Expressing Time
21. Expressing Location - Trinity of Directions

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Dative Case

Test 2

Course Evaluation

Exam topics/questions


Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébékgábor (DGOZG1), Dr. Warta Vilmos (SIYRAV), Eklicsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
OAE-MS1-T  **EXPERIMENTS IN MOLECULAR CELL BIOLOGY 1**

**Course director:**

Department of Medical Biology and Central Electron Microscope Laboratory  •  jozsef.szeberenyi@aok.pte.hu

| 2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 1 |
| 12 lectures + 0 practices + 12 seminars = total of 24 hours |
| Course headcount limitations (min.-max.): 5 – 48 |
| Prerequisites: none |

**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.

**Mid-term exams**

None.

**Making up for missed classes**

None.

**Reading material**

- **Obligatory literature**
  
  None.

- **Literature developed by the Department**

  Educational materials on the homepage of the Department of Medical Biology:
  
  Problem-solving tests in molecular cell biology
  
  Figure analysis in molecular cell biology

- **Notes**

  None.

- **Recommended literature**

  Cooper-Hausman: The Cell. A Molecular Approach
  
  Szeberényi J.: Experiments in Molecular Cell Biology

**Lectures**

1. Educational objectives  
   Dr. Szeberényi József
2. Labeling macromolecules  
   Dr. Szeberényi József
3. Methods of study protein structure  
   Dr. Szeberényi József
4. Methods of study gene structure  
   Dr. Szeberényi József
5. Methods of study gene function  
   Dr. Szeberényi József
6. Methods of study the cell nucleus  
   Dr. Szeberényi József
7. Test  
   Dr. Szeberényi József
8. Methods of study the cell cycle  
   Dr. Szeberényi József
9. Methods of study DNA replication  
   Dr. Szeberényi József
10. Methods of study transcription and translation
Methods of study gene regulation

Methods of study the cell nucleus

Test

Methods of study the cell cycle

Methods of study DNA replication

Methods of study transcription and translation

Methods of study gene regulation

Final test

Dr. Szeberényi József

Dr. Bátor Judit (MPZG9D), Dr. Pap Marianna (A9VB0A), Dr. Szeberényi József (DU7Y7C), Feketéné Dr. Kiss Katalin (RB5I50), Schipp Renáta (GPDYI3)
### OAE-N06-T  MEDICAL TERMINOLOGY

**Course director:** GABRIELLA HÁBEL, language teacher

<table>
<thead>
<tr>
<th>Number of hours/semester:</th>
<th>12 lectures + 0 practices + 12 seminars = total of 24 hours</th>
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</thead>
<tbody>
<tr>
<td>Course headcount limitations (min.-max.):</td>
<td>3 – 275</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>none</td>
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</tbody>
</table>

**Topic**

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

**Conditions for acceptance of the semester**

Maximum of 15% absence allowed

**Mid-term exams**

A midterm test during week 11.

Retake test for those who failed the midterm during week 12.

**Making up for missed classes**

To be discussed with the instructor.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  - University Script

**Lectures**

1. Introduction into Medical Terminology. The importance of Medical terminology in practice. Hábél Gabriella
2. Terminology of diseases and diagnosis. Hábél Gabriella
4. Anatomical terminology of he skeletal system and the skull. Hábél Gabriella
5. Terminology of continuous and discontinuous connections and the muscular system. Hábél Gabriella
6. Terminology of the cardiovascular system and the heart. Hábél Gabriella
7. Terminology of the respiratory system. Hábél Gabriella
8. Terminology of the digestive system. Hábél Gabriella
9. Terminology of the urinary system. Hábél Gabriella
10. Terminology of the male reproductive system. Hábél Gabriella
11. Terminology of the female reproductive system. Hábél Gabriella
12. Terminology of the sensory organs. Hábél Gabriella
### Practices

#### Seminars

2. Terminology of diseases.
3. Terminology of diagnosis.
5. Bones of the human body. Terminology of the skeletal system.
6. Terminology of the muscular system.
8. Terminology of the heart and cardiovascular system.
9. Terminology of the respiratory system.
10. Terminology of the digestive system.
11. Midterm test.
12. Retake test for those who failed the midterm.

#### Exam topics/questions

Anatomical and clinical terminology of the locomotor, cardiovascular, respiratory and digestive systems.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

#### Participants

Hábel Gabriella (CWD81H)
**OAE-N64-T  INTERCULTURAL COMPETENCE IN DOCTOR-PATIENT COMMUNICATION**

**Course director:**
DR. TIMEA NÉMETH, assistant professor
Department of Languages for Specific Purposes • timea.nemeth@aok.pte.hu

2 credit • midterm grade • Elective subject • both semesters • recommended semester: 1

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

**Course headcount limitations (min.-max.):** 3 – 15

**Prerequisites:** none

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**Topic**

This course aims at increasing medical students’ awareness of sociocultural influences on health beliefs, attitudes and behaviours as well as providing skills to understand and manage these factors during medical care with patients from diverse cultural backgrounds.

**Conditions for acceptance of the semester**

Maximum of 15% absence allowed

**Mid-term exams**

Oral presentation.

**Making up for missed classes**

As agreed with the teacher.

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
- Handouts
- Recommended literature

**Lectures**

**Practices**

**Seminars**

1. What is intercultural competence in medical care?
2. What is intercultural competence in medical care?
3. The impact of globalisation and migration on medical care
4. The impact of globalisation and migration on medical care
5. Stereotyping and prejudice; breaking down barriers
6. Stereotyping and prejudice; breaking down barriers
7. Gender issues and sexual identity
8. Gender issues and sexual identity
9. Interpreting body language in different cultural contexts
10. Interpreting body language in different cultural contexts
11. Culture specific health beliefs, religious views and behaviour
12. Culture specific health beliefs, religious views and behaviour
13. Medical communication in a cultural context 1-USA, UK
14. Medical communication in a cultural context 1-USA, UK
15. Medical communication in a cultural context 2-Spain, Mexico, Latin-America
16. Medical communication in a cultural context 2-Spain, Mexico, Latin-America
17. Medical communication in a cultural context 3-Germany, Austria
18. Medical communication in a cultural context 3-Germany, Austria
19. Medical communication in a cultural context 4-Asia, Africa
20. Medical communication in a cultural context 4-Asia, Africa
21. Medical communication in a cultural context 5-Eastern Europe
22. Medical communication in a cultural context 5-Eastern Europe
23. Student presentations
24. Student presentations

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Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

(), Dr. Németh Timea (X8VRGN)
### OAE-TCA-T  TECHNICAL SUBJECT - HOSPITAL CARE WORK

**Course director:**

Dr. István Wittmann, professor
Medical Faculty (Medical School) • istvan.wittmann@aok.pte.hu

<table>
<thead>
<tr>
<th>0 credit • signature • Elective subject • both semesters • recommended semester: 1</th>
</tr>
</thead>
</table>

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

**Course headcount limitations (min.-max.):**

- 

**Prerequisites:** none

---

**Topic**

**Conditions for acceptance of the semester**

**Mid-term exams**

**Making up for missed classes**

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
### OAE-TCD-T  TECHNICAL SUBJECT - DEMONSTRATOR ACTIVITY

| Course director: | DR. LÁSZLÓ JÓZSEF CZOPF, associate professor  
| Medical Faculty (Medical School) | laszlo.czopf@aok.pte.hu |

**0 credit • signature • Elective subject • both semesters • recommended semester: 1**

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

**Course headcount limitations (min.-max.):**

**Prerequisites:** none

---

**Topic**

**Conditions for acceptance of the semester**

**Mid-term exams**

**Making up for missed classes**

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**

- **Notes**

- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
### OAE-TCT-T Technical Subject - Student Research Society (TDK) Activity

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. TIBOR ERTL, professor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Faculty (Medical School) • <a href="mailto:tibor.ertl@aok.pte.hu">tibor.ertl@aok.pte.hu</a></td>
<td></td>
</tr>
</tbody>
</table>

| 0 credit • signature • Elective subject • both semesters • recommended semester: 1 |
|---|---|

**Number of hours/semester:**

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

**Course headcount limitations (min.-max.):**

- 

**Prerequisites:** none

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**Topic**

**Conditions for acceptance of the semester**

**Mid-term exams**

**Making up for missed classes**

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
OAF-ARE-T  CURRENT TOPICS AND PROBLEM AREAS IN REPRODUCTIVE ETHICS

Course director: Tibor Szolcsányi, assistant professor
Department of Behavioural Sciences • tibor.szolcsanyi@aok.pte.hu

1 credit • midterm grade • Optional subject • both semesters • recommended semester: 1

Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: none

Topic
The seminar provides an introduction into current topics and problem areas of reproductive ethics. In order to avoid the dead-end of the pro-life vs. pro-choice controversy, the course is designed to address ethical questions of reproductive ethics in a multidisciplinary manner with a special focus on parental responsibility. Students will be provided the chance to analyze challenges faced by parents, medical professionals and policy makers with regard to reproductive choices, note how medical developments and social changes interact. The issue-centered seminar should give students the chance to approach bioethical questions in a critical manner through an analysis of complex medical cases.

Conditions for acceptance of the semester
Maximum of 15% absence allowed

Mid-term exams
Students are expected to 1) participate in classes in an active and constructive manner; 2) complete a short research on a topic of interest; 3) present the findings of the research in class and 4) in written form. Students will be evaluated on the basis of the fulfillment of the mentioned requirements (40% participation; 30% presentation; 30% written research report).

Making up for missed classes
--

Reading material
- Obligatory literature
- Literature developed by the Department
--
- Notes
--
- Recommended literature
--

Lectures
Practices
Seminars
1 An anthropology of genealogy
2 The moral status of the embryo in religious, philosophical and legal traditions
3 Reproductive ethics in context: a short history of reproductive medicine
4 Reproductive ethics in context: social theories of parenthood
5 The existential context of prenatal diagnosis and screening
6 Ethical questions of assisted human reproduction
7 Social egg freezing
8 Anonymous gamete donation
9 Surrogacy
10 Global reproductive tourism
11 Human cloning
12 Genetic enhancements

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Kovács Gusztáv (UC7ISY), Dr. Szolcsányi Tibor (HNQ526)
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

OAF-AVV-T  URBAN HEALTH

Course director: Dr. JÁNOS GIRÁN, assistant professor
Department of Public Health Medicine • janos.giran@gmail.com

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 1

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 20  Prerequisites: none

Topic
Today urban health issues have engendered urgent challenges, since the number of the city dwellers is increasing continuously. In the last decade, for the first time in human history, the ratio of the global population living in urban areas has outstripped its rural counterpart. Urbanization as a process is closely connected with several other essential social, economic and environmental changes, which have resulted in both positive and negative impacts on the health status of city dwellers. The aim of the course is to provide students with a general overview of these positive and negative health impacts of a city.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Making up for missed classes
No make-up classes

Reading material
- Obligatory literature
- Literature developed by the Department
  Neptun
- Notes
- Recommended literature

Lectures
1  The rise of cities and process of urbanisation
   Dr. Girán János
2  Urban growth and the problems of town life
   Dr. Girán János
3  Positive health impacts of modern cities
   Dr. Girán János
4  Negative health impacts of modern cities
   Dr. Girán János
5  Urban versus rural health
   Dr. Girán János
6  The WHO Healthy City movement
   Dr. Girán János
7  Healthy public policy
   Dr. Girán János
8  Applying setting approach to city health development initiatives
   Dr. Girán János
9  Shaping cities for health I.: methods of city health profile and health impact assessment
   Dr. Girán János
10 Shaping cities for health II.: methods of city health development planning and Urban Health Index
   Dr. Girán János
11 Best practices in urban health
   Dr. Girán János
12 Summary
   Dr. Girán János

Practices
Seminars
Exam topics/questions
Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
INTRODUCTION TO BIOMETRICS

Course director: LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis • laszlo.poto@aok.pte.hu

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

Number of hours/semester: 0 lectures + 12 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 20
Prerequisites: none

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
Maximum one missed class.
Mid-term exams
Active participation at the classes.
Making up for missed classes
One extra class

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
  László Pótó: Biometrics, workbook, Pécs, 2018
- Recommended literature

Lectures
Practices
1 Probability examples 1
   Dr. Pótó László
2 Probability examples 1
   Dr. Pótó László
3 Probability examples 2 - discrete distributions
   Dr. Pótó László
4 Probability examples 2 - discrete distributions
   Dr. Pótó László
5 Exploring data by graphs
   Dr. Pótó László
6 Exploring data by graphs
   Dr. Pótó László
7 Exploring data by numbers - sample measures
   Dr. Pótó László
8 Exploring data by numbers - sample measures
   Dr. Pótó László
9 The normal distribution
   Dr. Pótó László
10 The normal distribution
   Dr. Pótó László
11 Distribution of the mean; Stat estimation: the CI for the expected value
   Dr. Pótó László

12 Distribution of the mean; Stat estimation: the CI for the expected value
   Dr. Pótó László

Seminars

Exam topics/questions

No exam - but active participation on the classes is a must.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pótó László (FIO4UU)
**OAF-BFM-T  PROBLEM SOLVING IN BIOMETRICS**

**Course director:**

**DR. LÁSZLÓ PÓTÓ, associate professor**

Institute of Bioanalysis • laszlo.poto@aok.pte.hu

### Course described:

- 1 credit
- Midsemester grade
- Optional subject
- Both semesters
- Recommended semester: 1

### Course Details:

**Number of hours/semester:**
0 lectures + 12 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**
1 – 20

**Prerequisites:**
None

The subject can only be registered in case of a PASSED and valid health aptitude test!

### 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

Maximum one missed class

**Mid-term exams**

Active participation on the classes.

**Making up for missed classes**

One extra class

### Reading material

- **Obligatory literature**

- Literature developed by the Department

- Notes


- **Recommended literature**


### Lectures

#### Practices

1. The one sample (and the paired samples) t test
   Dr. Pótó László

2. The one sample (and the paired samples) t test
   Dr. Pótó László

3. The CI and the hypothesis testing - the type one and type two errors.
   Dr. Pótó László

4. The CI and the hypothesis testing - the type one and type two errors. MDM basics 1.
   Dr. Pótó László

5. The independent samples t test
   Dr. Pótó László

6. The independent samples t test
   Dr. Pótó László

7. The linear regression
   Dr. Pótó László

8. The linear regression
   Dr. Pótó László

9. The contingency tables - the chi squares test
Dr. Pótó László

10 The contingency tables - the chi squares test. MDM-1/2  
    Dr. Pótó László

11 The nonparametric tests  
    Dr. Pótó László

12 The nonparametric tests. MDM basics 2.  
    Dr. Pótó László

Seminars

Exam topics/questions

No exam but active participation on the classes is a must.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pótó László (FIO4UU)
**OAF-BMU-T**  
**BE PROACTIVE! DISEASE PREVENTION RELOADED**

**Course director:**  
DR. KATALIN SZENDI, assistant professor  
Department of Public Health Medicine • szkata82@yahoo.co.uk

| 2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 1 |
|---|---|---|---|
| **Number of hours/semester:** | **24 lectures + 0 practices + 0 seminars = total of 24 hours** |
| **Course headcount limitations (min.-max.):** | **1 – 30** |
| **Prerequisites:** | **none** |

**Topic**

Lectures are based on interactivity instead of usual frontal presentations. With active participation and personal involvement the audience can learn how to utilize the major aspects of disease prevention during their subsequent medical work. Lectures aim to build on the needs of students via problem-based training and the intention of synergy taking advantages of teamwork and modern information technology. Our objective is definitely not to repeat the knowledge of obligatory subjects, but to make their practical importance an experience through unique education methods and the paradigm shift of the future physicians.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

Mid-term exam

**Making up for missed classes**

Oral report from the missed issue

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

**Lectures**

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<th>Topic</th>
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<td>Preventive vs. curative medicine - in the maze of history. Prevention - but who, where and to whom?</td>
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<td>Primordial prevention - from the North Karelian Project to The Kindergarten Initiative</td>
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<td>I’m a doctor and I want to heal patients. Or rather prevent the diseases? Let’s study the population!</td>
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<td>Dr. Berényi Károly</td>
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<td>Spirits’ wish -- Punishment of the Gods -- Doctors heal me -- I am responsible for my health</td>
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<td>Are you infectious or not? - Role of infections in non-infectious diseases</td>
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<td>A live dog is better than a dead lion - about screening</td>
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<td>&quot;I am on a seafood diet. I see food and I eat it.” I am starving! Or not? - macro and micronutrients</td>
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<td>Idiocratic implementations in nutrition. To eat, or not to eat - that is the question</td>
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<td>Dr. Berényi Károly</td>
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</table>
To drink, or not to drink - that is the question
Dr. Berényi Károly

Morning wellness: coffee-cognac-cig
Dr. Berényi Károly

Life before and after Facebook
Dr. Berényi Károly

Urbanisation - risk or protective factor?
Dr. Berényi Károly

Work ennobles. Or does it make me sick?
Dr. Berényi Károly

Health policy - but I just wanted to cure
Dr. Berényi Károly

Do not give him a fish, teach him to fish!
Dr. Berényi Károly

Relax! Take it easy. Hakuna matata
Dr. Berényi Károly

How can we turn disease prevention into "habit"?
Dr. Berényi Károly

Verbal and nonverbal communication - key to the highly effective disease prevention
Dr. Berényi Károly

Practices

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-BTP-T  Molecular Biology and Bioinformatic Techniques from a Practical Approach

Course director: Dr. István Miklós Ábrahám, professor
Institute of Physiology • istvan.abraham@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 25 Prerequisites: none

Topic
The aim of the course is to discuss the common DNA and genome editing techniques focusing on fluorescent protein tagging and bioinformatic tools used in genome and image analysis.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Az utolsó előadás alkalmával szóbeli elbeszéléget, mely elmulasztása esetén az adott héten pótolható.

Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
  Az előadások anyaga kiadásra kerül
- Notes
- Recommended literature

Lectures
1 Detection of specific nucleotide sequences
   Kovács Tamás
2 Gene activity measurement (qPCR)
   Kovács Tamás
3 Online nucleotide databases
   Dr. Ernő Dávid
4 Primer design and qPCR analysis
   Dr. Ernő Dávid
5 Molecular cloning
   Kovács Tamás
6 Viral transduction and transfection techniques
   Kovács Tamás
7 Plasmid restriction mapping
   Dr. Ernő Dávid
8 In silico analysis
   Dr. Ernő Dávid
9 Genome editing techniques
   Kovács Tamás
10 CRISPR Cas9
   Kovács Tamás
11 Basics of data analysis
   Dr. Ernő Dávid
12 Basics of image analysis
   Dr. Ernő Dávid
Practices
Seminars
Exam topics/questions
Szóbeli kérdések az előadás anyagából.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Cancer is Preventable!

Course director: Dr. István Zoltán Kiss, professor
Department of Public Health Medicine • istvan.kiss@aok.pte.hu

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

Number of hours/semester: 22 lectures + 2 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 30
Prerequisites: none

Topic

One of the major challenges for the health care system of the 21st century is the high number of cancer caused deaths. Over the past decades, despite a significant development on the field of medicine, the prognosis of this disease is still not satisfactory. Thus prevention has a key role in the fight against cancer. The course gives a description on the different types of cancer their major risk factors for a more detailed understanding. Methods of cancer prevention will be described and emphasized - including theoretical knowledge and a practical guide as well. During the course the results of most recent human epidemiological studies on cancer will also be described.

Conditions for acceptance of the semester

Participation in lectures and practicals is obligatory which is registered. Absences should not exceed 4x45 min. Otherwise signature of grade book is denied.

Mid-term exams

Making up for missed classes

There are no make-up classes.

Reading material

- Literature developed by the Department
Educational material uploaded on Neptun.
- Notes
- Recommended literature

Lectures

1 Cancer in the 21st century
   Dr. Kiss István Zoltán
2 Cancer in developing and developed countries
   Dr. Kiss István Zoltán
3 The process of carcinogenesis I.
   Dr. Kiss István Zoltán
4 The process of carcinogenesis II.
   Dr. Kiss István Zoltán
5 Characteristics of cancer cells
   Dr. Kiss István Zoltán
6 Molecular epidemiology of cancer
   Dr. Kiss István Zoltán
7 The most important cancer risk factors in general I.
   Dr. Kiss István Zoltán
8 The most important cancer risk factors in general II.
   Dr. Kiss István Zoltán
9 Lung cancer
   Dr. Kiss István Zoltán
10 Colorectal tumors I.
    Dr. Kiss István Zoltán
11 Colorectal tumors II.
    Dr. Kiss István Zoltán
12 Breast cancer
   Dr. Kiss István Zoltán
13 Prostate cancer
Dr. Kiss István Zoltán
14 Head and neck cancer
Dr. Kiss István Zoltán
15 Pancreatic cancer
Dr. Kiss István Zoltán
16 Gastric cancer
Dr. Kiss István Zoltán
17 Liver cancer
Dr. Kiss István Zoltán
18 Cervical cancer
Dr. Kiss István Zoltán
19 Ovarian cancer
Dr. Kiss István Zoltán
20 Skin cancer
Dr. Kiss István Zoltán
21 Leukemia
Dr. Kiss István Zoltán
22 Less frequent tumors
Dr. Kiss István Zoltán

Practices
1 Genetics, genomics and epigenetics in cancer prevention
2 Cancer prevention - Recommendations

Seminars
Exam topics/questions
Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Kiss István Zoltán (EFZCGE)
OAF-ENL-T

OPPORTUNITIES AND METHODS FOR HEALTH EDUCATION FOR MEDICAL AND DENTAL PROFESSIONALS

Course director: DR. ERIKA MÁRIA MAREK, assistant professor
Department of Operational Medicine • erika.marek@aok.pte.hu

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 1 – 20
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

It is commonly noted that primer prevention, especially health promotion - and including health education - has a significant role in preventing diseases. During their everyday work medical professionals (either doctors, dentists and pharmacists) may face situations when - in addition to providing treatment - they have to perform health educational tasks. For example, giving a presentation for school-aged children, or writing an informative article for the lay population, etc. The aim of this course is to draw the attention of the future health professionals to their responsibility and opportunities in the field of health education, to motivate them and providing them a rich methodological toolkit. This course is practice-oriented, participating students have to prepare and present an individual health educational program by the end of the course.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Midsemester grade: students shall complete their individual project (an essay or presentation) for the successful completion of the course.

Making up for missed classes

To be discussed with the course tutor in each individual case.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Recommended Readings

http://applications.emro.who.int/dsaf/EMRPUB_2012_EN_1362.pdf
http://apps.who.int/iris/handle/10665/77769#sthash.DUAy1Sn.dpuf
http://www.cartercenter.org/resources/pdfs/health/ephti/library/lecture_notes/health_extension_trainees/Intro_HomeEducation.pdf
Introduction to Health Education, health Promotion, and Theory
http://samples.jpub.com/9780763796112/96112_CH01_FINAL.pdf
Health Education for Adults
http://www.unesco.org/education/uie/confintea/pdf/

Lectures

1. Introduction 1. Overview of the course. Historical background, theories and fundamentals of health education. National and international health educational guidelines, programs, governmental and civil initiatives.
   Dr. Marek Erika Mária

2. Introduction 1. Aims of health education and its role in increasing health awareness and literacy and in improving attitudes and health behaviour.
   Dr. Marek Erika Mária

3. Methods of health education 1.: designing, preparing and organising programs, methods used considering target group and site for health education. Basic pedagogical, didactical principles.
   Dr. Marek Erika Mária
Methods of health education 1. The structure of a health educational presentation: from literature review to holding a presentation. Conventional classroom methods: the frontal educational presentation. The importance of motivation, demonstration and interactivity and the role of feedback. Characteristics of a good presentation and the good presenter.
Dr. Marek Erika Mária

Dr. Marek Erika Mária

Methods of health education 2. Distribution of individual project topics (for the final assessment), discussion.
Dr. Marek Erika Mária

Dr. Berényi Károly

Dr. Berényi Károly

Levels and scenes of health education. The first and the most important stage. Health education in the family. Health education during prenatal care. The role and opportunities of pediatrician and family visitor nurse in figuring the health culture of the family.
Dr. Marek Erika Mária

Levels and scenes of health education. Health education in nursery schools and kindergartens: the tasks and opportunities of physicians, topics, methods, tools and model programs.
Dr. Marek Erika Mária

School health education: tasks and opportunities of school doctors and other invited doctors; model programs, health programs at schools, sexual education of adolescents: issues to cover, methods and tools.
Dr. Marek Erika Mária

School health education: tasks and opportunities of school doctors and other invited doctors; model programs, health programs at schools, sexual education of adolescents: issues to cover, methods and tools.
Dr. Marek Erika Mária

The present: opportunities for medical students, the importance of peer-education in health education (HUMSIRC). Anti-alcohol and anti-tobacco and anti-drug programs and cessation promoting programs: best practices and difficulties.
Dr. Marek Erika Mária

Health education for adults and the elderly: specific sites, methods, tools and aspects. Focussing on PREVENTION: model programs.
Dr. Marek Erika Mária

Health promotion, as the new initiative of WHO; the Ottawa and Bangkok Charter. Theoretical background and the most important programs of this new community level health initiative, like the North Karelia project, The Healthy Cities-, Health promotive Schools- and Health Promotive Hospitals network.
Dr. Szilárd István

Health promotion, as the new initiative of WHO; the Ottawa and Bangkok Charter. Theoretical background and the most important programs of this new community level health initiative, like the North Karelia project, The Healthy Cities-, Health promotive Schools- and Health Promotive Hospitals network.
Dr. Szilárd István

Health education for vulnerable populations: asylum-seekers, roma communities, homeless people. Model programs, special aspects to consider (culture, religion, etc.), difficulties and recommendations.
Dr. Marek Erika Mária

Health education for vulnerable populations: asylum-seekers, roma communities, homeless people. Model programs, special aspects to consider (culture, religion, etc.), difficulties and recommendations.
Dr. Marek Erika Mária

Patient education: opportunities for health education during primary (GP visits) and secondary care and during clinical practice.
Dr. Marek Erika Mária

Patient education: opportunities for health education during primary (GP visits) and secondary care and during clinical practice.
Dr. Marek Erika Mária

Dental health education: the role and opportunities of dentists in health education. Dental prevention programs (model programs, kindergarten, school initiatives, programs for the elderly and health education during provoding dental care).
Dr. Marek Erika Mária

Dental health education: the role and opportunities of dentists in health education. Dental prevention programs (model programs, kindergarten, school initiatives, programs for the elderly and health education during provoding dental care).
Dr. Marek Erika Mária

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23 Presentation and discussion of students’ health educational programs. Assessment.
   Dr. Marek Erika Mária
24 Presentation and discussion of students’ health educational programs. Assessment.
   Dr. Marek Erika Mária

Practices
Seminars
Exam topics/questions
To be discussed with the course tutor during the course (6th lecture).

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
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, health and environment. The topic provokes social debate, in which, in lack of information, delusions also appear. The technology is also used in industry, science and human therapy. During the education, students receive a knowledge of molecular background of production GMOs, their possible health risks, their occurrence in foodstuffs, medical applications, detection, regulations, authorization, economical and social impacts.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams
Providing a new date after individual consultation.

Making up for missed classes
none

Reading material
- Obligatory literature
- Literature developed by the Department
  Slides on the Neptun
- Notes
- Recommended literature

Lectures
1 Definition of GMO
   Dr. Gyöngyi Zoltán
2 Needs of GMOs in different disciplines
   Dr. Gyöngyi Zoltán
3 The development of agriculture to GMOs
   Dr. Gyöngyi Zoltán
4 The role of GMOs in crop production
   Dr. Gyöngyi Zoltán
5 The role of GMOs in animal breeding
   Dr. Gyöngyi Zoltán
6 Impact of GM crops on natural habitats and organic farming
   Dr. Gyöngyi Zoltán
7 GMO production. History of science
   Dr. Gyöngyi Zoltán
8 GMO production. Description of biotechnology methods
   Dr. Gyöngyi Zoltán
9 GMO detection methods
   Dr. Gyöngyi Zoltán
10 Occurrence of GM organisms in food, their detectability
    Dr. Gyöngyi Zoltán
11 GMO in industry
   Dr. Gyöngyi Zoltán
12 GMO in the pharmaceutical industry
   Dr. Gyöngyi Zoltán
13 GMO in science
   Dr. Gyöngyi Zoltán
14 GMO and disease prevention  
Dr. Gyöngyi Zoltán
15 GMO and therapy  
Dr. Gyöngyi Zoltán
16 The past, present and future of gene therapy  
Dr. Gyöngyi Zoltán
17 Genetic modification of humans  
Dr. Gyöngyi Zoltán
18 Potential health effects of GMOs  
Dr. Gyöngyi Zoltán
19 Background of deaths caused by GMOs  
Dr. Gyöngyi Zoltán
20 Preventing the harmful effects of GMOs  
Dr. Gyöngyi Zoltán
21 Authorization procedures of GMOs  
Dr. Gyöngyi Zoltán
22 GMO production for commercial use  
Dr. Gyöngyi Zoltán
23 The economic impact of GMOs  
Dr. Gyöngyi Zoltán
24 Social debates, publicity  
Dr. Gyöngyi Zoltán

Practices

Seminars

Exam topics/questions

A GMO fogalma  
A GMO megjelenésének igénye különböző tudományterületeken  
A mezőgazdaság fejlődése a GMO megjelenéséig  
A GM szervezetek szerepe a növénytermesztésben  
A GM szervezetek szerepe az állattenyésztésben  
A GM növények hatása természetes élőhelyekre és a biogazdálkodásra  
GMO előállítás. Tudománytörténeti áttekintés  
GMO előállítás. Biotechnológiai módszerek ismertetése  
GMO kimutatási módszerek  
A GM szervezetek élelmiszerekben való előfordulása, kimutathatóságuk  
GMO az iparban  
GMO a gyógyszeriparban  
GMO a tudományban  
GMO és a betegségmegelőzés  
GMO és a gyógyítás  
A géneráció múltja, jelené és jövője  
Az ember genetikai módosítása  
A GM szervezetek lehetséges egészségkárosító hatásai  
GM szervezetek okozta halálesetek hátttere  
A GM szervezetek egészségkárosító hatásának kivédése  
A GM szervezetek engedélyezésének feltételei  
Kereskedelmi GMO előállítás  
A GM szervezetek gazdasági hatása  
Társadalmi viták, tájékoztatás

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**GLOBAL WARMING - THE HEALTH AND DISEASE IMPACTS**

**Course director:** Dr. Gellért Gerencsér, assistant professor  
Department of Public Health Medicine • gellert.gerencser@gmail.com

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

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

**Course headcount limitations (min.-max.):** 1 – 30  
**Prerequisites:** none

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**Topic**

Recent observations and forecasts have highlighted that global warming basically changes our environment and society. Furthermore, it has abruptly come forward to a significant factor influencing the human health with its direct and indirect effects. The course tries to familiarize students with the possible cause effect relations, the impacts on human health and answering the question whether the public health systems are capable to cope with the changed climate. The course also tries to give a viewpoint for the students to evaluate the etiological factors of the respective disease in the context of climate change.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

A simple choice test has to be done on the last lecture.

**Making up for missed classes**

Absence of 2x2 hours is acceptable, if it is exceeded the semester cannot be accepted.

**Reading material**

- **Obligatory literature**
  - Literature developed by the Department
    ppt-presentations of the lectures will be uploaded on the Neptun
  - Notes
  - **Recommended literature**
    Gender, Climate Change and Health; WHO  

**Lectures**

1. The etiological factors of the global warming.  
   Bérczi Bálint Dániel
2. The untouched and disturbed ecosystem.  
   Bérczi Bálint Dániel
3. Physical, ecological and social responses of the disturbed ecosystem.  
   Bérczi Bálint Dániel
4. The Direct, Indirect health-related and the Socioeconomic effects of global warming.  
   Bérczi Bálint Dániel
5. The direct health effects I  
   Bérczi Bálint Dániel
6. Increasing heat wave frequency. Major events (2003, France) and the related cardiovascular diseases, future scenarios.  
   Bérczi Bálint Dániel
7. The direct health effects II  
   Bérczi Bálint Dániel
8. Expanding aridity, drought and desertification. Expanding famine and malnutrition.  
   Bérczi Bálint Dániel
9. The direct health effects III  
   Bérczi Bálint Dániel
    Bérczi Bálint Dániel
11. The indirect health effects I  
    Bérczi Bálint Dániel
12. The changed dynamics of vector-borne diseases.  
    Bérczi Bálint Dániel
The changed dynamics of zoonotic diseases.
Bérczi Bálint Dániel

Future predictions for vector-borne and zoonotic diseases, up to 2100.
Bérczi Bálint Dániel

The indirect health effects II - The changed pattern of waterborne diseases.
Bérczi Bálint Dániel

What impact will climate change have on water?
Bérczi Bálint Dániel

The indirect health effects III
Bérczi Bálint Dániel

Consequences of diminished air quality on the respiratory diseases. Aeroallergens in a changing environment.
Bérczi Bálint Dániel

The indirect health effects IV
Bérczi Bálint Dániel

Coping with melting ice, rising sea and flood related mortality.
Bérczi Bálint Dániel

Socioeconomic effects - The future situation of food and water: Access and Safety
Bérczi Bálint Dániel

Changing climate, changing biodiversity. Latest reports (IPCC, IUCN) concerning the biodiversity.
Bérczi Bálint Dániel

Climate refugees and the upcoming environmental migration.
Bérczi Bálint Dániel

Actions that may reduce global warming. Future climate researches and engineering.
Bérczi Bálint Dániel

Practices

Seminars

Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Bérczi Bálint Dániel (J925B5)
OAF-GKF-T  **GENERAL ENT PRACTICAL COURSE**  
Course director: **DR. LÁSZLÓ LÚJBER**, associate professor  
Department of Oto-rhino-laryngology  
lujber.laszlo@pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1

**Number of hours/semester:**  
0 lectures + 12 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 1 – 2  
Prerequisites: none

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**Topic**

The aim of the course is to provide a possibility for the students to actively participate in ENT surgeries and to get involved in outpatient ENT care. This would mean that the student will be able to learn the basic ENT outpatient procedures and would be able to assist in the surgical procedures. Meanwhile the indication, the treatment options and the likely outcome of various otolaryngological interventions will be covered.

**Conditions for acceptance of the semester**

Absence from the seminar should be made up

**Mid-term exams**

Not possibility

Making up for missed classes

It is possible at a prediscussed time with the teacher.

**Reading material**

- **Obligatory literature**

- Literature developed by the Department

- Notes

- **Recommended literature**

  Cummings: Otolaryngology Head and Neck Surgery, text book

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

N/A

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Lujber László (B3A2X7)
OAF-GNK-T  CHEMISTRY OF HERBS

Course director:  DR. ÁGNES BÓNA, assistant professor
Department of Biochemistry and Medical Chemistry • agnes.bona@aok.pte.hu

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

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 2 – 10  Prerequisites: none

Topic

Since time immemorial, people have tried to find medications to alleviate pain and cure different illnesses. The continuous and perpetual interest in medicinal plants has brought about modern and sophisticated fashion of their processing and usage. Herbs contain several different phytochemicals. Some of these are pharmacologically active and are used in foods, cosmetics and medicaments. With the increase in the popularity of alternative medicine, many herbal products have become available. The aim of the course is to find the relationship between the chemical structure and physiological effect of different biologically active compounds found in medicinal herbs.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

Written exam on the 11th week, the make up of the exam is not possible.

Making up for missed classes

The make up of the course is not possible.

Reading material

- Obligatory literature
- Literature developed by the Department
  Lectures will be available on Neptun.
- Notes
- Recommended literature

Lectures

1  Introduction  Dr. Bóna Ágnes
2  Introduction  Dr. Bóna Ágnes
3  Foundations of phytochemistry  Dr. Bóna Ágnes
4  Foundations of phytochemistry  Dr. Bóna Ágnes
5  Phenols and tannins  Dr. Bóna Ágnes
6  Phenols and tannins  Dr. Bóna Ágnes
7  Glycosides  Dr. Bóna Ágnes
8  Glycosides  Dr. Bóna Ágnes
9  Polysaccharides  Dr. Bóna Ágnes
10 Polysaccharides  Dr. Bóna Ágnes
11 Terpenoids and saponins  Dr. Bóna Ágnes
12 Terpenoids and saponins  Dr. Bóna Ágnes
13 Oils and resins  Dr. Bóna Ágnes
14 Oils and resins
<table>
<thead>
<tr>
<th></th>
<th>Course Description</th>
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<tbody>
<tr>
<td>15</td>
<td>Alkaloids in medicinal plants</td>
<td>Dr. Bóna Ágnes</td>
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<tr>
<td>16</td>
<td>Alkaloids in medicinal plants</td>
<td>Dr. Bóna Ágnes</td>
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<td>17</td>
<td>High pressure liquid chromatography (HPLC) separation of herbal constituents</td>
<td>Dr. Bóna Ágnes</td>
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<tr>
<td>18</td>
<td>High pressure liquid chromatography (HPLC) separation of herbal constituents</td>
<td>Dr. Bóna Ágnes</td>
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<tr>
<td>19</td>
<td>Mass spectrometric (MS) analysis of herbal constituents</td>
<td>Dr. Bóna Ágnes</td>
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<tr>
<td>20</td>
<td>Mass spectrometric (MS) analysis of herbal constituents</td>
<td>Dr. Bóna Ágnes</td>
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<tr>
<td>21</td>
<td>Written exam</td>
<td>Dr. Bóna Ágnes</td>
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<tr>
<td>22</td>
<td>Written exam</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>23</td>
<td>Consultation</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>24</td>
<td>Consultation</td>
<td>Dr. Bóna Ágnes</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
# OAF-GOM-T  Poisonous Mushrooms

**Course director:** DR. LORÁND BARTHÓ, professor  
Department of Pharmacology and Pharmacotherapy  
lorand.bartho@aok.pte.hu

<table>
<thead>
<tr>
<th>2 credit</th>
<th>midterm grade</th>
<th>Optional subject</th>
<th>autumn semester</th>
<th>recommended semester: 1</th>
</tr>
</thead>
</table>

**Number of hours/semester:** 24 lectures + 0 practices + 0 seminars = total of 24 hours  
**Course headcount limitations (min.-max.):** 5 – 40  
**Prerequisites:** none

### Topic

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.

### Conditions for acceptance of the semester

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

**Mid-term exams**

Exam on week 12

**Making up for missed classes**

Individual

### Reading material

- **Obligatory literature**

- **Literature developed by the Department**
  
CD prepared by Prof. Barthó  
Most terms will be explained in the lectures.

- **Notes**

- **Recommended literature**

**Lectures**

1. Introduction  
   Dr. Barthó Loránd  
2. Amanitas, Lepiotas (parasols) and their poisonings  
   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. Other mushrooms with white spores and their poisonings  
   Dr. Barthó Loránd  
7. Other mushrooms with white spores and their poisonings  
   Dr. Barthó Loránd  
8. Mushrooms with pink, brown or black spores  
   Dr. Barthó Loránd  
9. Mushrooms with pink, brown or black spores  
   Dr. Barthó Loránd  
10. Mushrooms with pink, brown or black spores  
    Dr. Barthó Loránd
11 Mushrooms with tubes, pores, wrinkles or spines  
   Dr. Barthó Loránd
12 Mushrooms with tubes, pores, wrinkles or spines  
   Dr. Barthó Loránd
13 Molecular mechanisms encountered with the effects of cytotoxic MPs  
   Dr. Szeberényi József
14 Molecular mechanisms encountered with the effects of cytotoxic MPs  
   Dr. Szeberényi József
15 Morels, false morels, puff-balls, corals, etc. Pre-exam  
   Dr. Barthó Loránd
16 Morels, false morels, puff-balls, corals, etc. Pre-exam  
   Dr. Barthó Loránd
17 Some forensic aspects of MPs  
   Dr. Barthó Loránd
18 Muscarine, muscimol, ibotenic acid  
   Dr. Barthó Loránd
19 Coprin, orellanin, aflatoxin  
   Dr. Barthó Loránd
20 Reprise of poisonous mushrooms  
   Dr. Barthó Loránd
21 Toxins of moulds  
   Dr. Barthó Loránd
22 Tasks of GP sin case of MP  
   Dr. Barthó Loránd
23 Reprise of types of poisoning: Exam  
   Dr. Barthó Loránd
24 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
Gastrointestinal MP
Muscarine-type of MP
Psychotropic MP
Other types of MP
Tasks of the general practitioner in case of MP

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-HF1-T  HUNGARIAN FOR FOREIGNERS 1

Course director: DR. KATALIN PELCZ, language teacher
International Studies Center • pelcz.kata@pte.hu

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

Number of hours/semester: 0 lectures + 0 practices + 48 seminars = total of 48 hours
Course headcount limitations (min.-max.): 4 – 200
Prerequisites: none

Topic
The course is offered for all the interested participants who would like to learn Hungarian as a foreign language.

The Hungarian for Foreigners 1. 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
Maximum of 15 % absence allowed

Mid-term exams
The course ends with an oral and written exam. You can take part in the exam, with a min. 85% attendance rate.

Making up for missed classes
Medical certificate is accepted.

Reading material
- Obligatory literature
  Szita Szilvia - Pelcz Katalin: MagyarOK 1.
  www.magyar-ok.hu
- Literature developed by the Department
  Szita Szilvia - Pelcz Katalin: MagyarOK 1.
  www.magyar-ok.hu
- Notes
- Recommended literature

Lectures
Practices
Seminars
1  ABC Nemzetközi szavak Köszönések
2  ABC Nemzetközi szavak Köszönések
3  Bemutatkozás
4  Bemutatkozás
5  Országok és városok
6  Országok és városok
7  Nemzetiségek és nyelvek, Számok
8  Nemzetiségek és nyelvek, Számok
9  Mennyi az idő?
10  Mennyi az idő?
11  Foglalkozások
12  Foglalkozások
13  Én és a családom
14  Én és a családom
15  Hogy vagy? Hogy van?
16  Hogy vagy? Hogy van?
17  Használati tárgyak
18  Használati tárgyak
19  Tárgyleírás
20  Tárgyleírás
21  Technikai problémák
22  Technikai problémák
Exam topics/questions

Successful oral and written exam at the end of the course.

MagyarOK A1+ 1-5. fejezet:

http://magyar-ok.hu/docs/mok1_tk-tartalom.pdf

Topics:
Köszönések
Bemutatkozás
Országok és városok
Nemzetiségek és nyelvek Számok
Mennyi az idő?
Foglalkozások
Én és a családom
Hogy vagy? Hogy van?
Használati tárgyak
Tárgyleírás
Technikai problémák
Emberi tulajdonságok
Hány óra van? Milyen nap van ma?
Helyek a városban
Közlekedési eszközök
Útbaigazítás
Város és falu
Élelmiszerek és mennyiségek
A piacon
Mit eszünk? Mit iszunk?
Az étteremben
Ruhavásárlás
Színek
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pelcz Katalin (HBH9IN)
Health Promotion

Course director:

Dr. István Zoltán Kiss, professor
Department of Public Health Medicine • istvan.kiss@aok.pte.hu

2 credit • midterm grade • Optional subject • autumn semester • recommended semester: 1

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

Course headcount limitations (min.-max.): 5 – 20

Prerequisites: none

Topic

Health promotion is intimately related not only to preventive medicine, but to the everyday practice of physicians as well. A considerable part of noninfectious diseases is preventable, morbidity and mortality of these illnesses are decreasable by the implementation of effective intervention.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Neptun Meet Street

Making up for missed classes

There are no make-up classes

Reading material

- Obligatory literature
- Literature developed by the Department
  Education material on Neptun
- Notes
- Recommended literature

Lectures

   Dr. Horváth-Sarródi Andrea
2 Theoretical background of health promotion. Salutogenesis and pathogenesis.
   Dr. Horváth-Sarródi Andrea
3 Health promotion and health education.
   Dr. Horváth-Sarródi Andrea
4 Basic documents of health promotion.
   Dr. Horváth-Sarródi Andrea
5 Methods of health promotion.
   Dr. Horváth-Sarródi Andrea
6 Measuring of results in health promotion activities. Evidence based health promotion.
   Dr. Horváth-Sarródi Andrea
7 Health promotion and health policy.
   Dr. Horváth-Sarródi Andrea
8 Lalonde model. Health in all policies (HiAP).
   Dr. Horváth-Sarródi Andrea
9 Multisectorality. Stakeholders.
   Dr. Horváth-Sarródi Andrea
10 Health Impact Assessment (HIA).
    Dr. Horváth-Sarródi Andrea
11 Health promotion in communities.
   Dr. Horváth-Sarródi Andrea
12 Health planning.
   Dr. Horváth-Sarródi Andrea
13 SWOT-analysis.
   Dr. Horváth-Sarródi Andrea
14 Personal health planning.
   Dr. Horváth-Sarródi Andrea
15 Effective health promotion in settings (schools)
Dr. Horváth-Sarródi Andrea

16 Effective health promotion in settings (work places)
Dr. Horváth-Sarródi Andrea

17 Health Promoting Universities.
Dr. Horváth-Sarródi Andrea

18 Actuality and possibilities of the concept of Health Promoting Universities.
Dr. Horváth-Sarródi Andrea

19 Methods of mental health promotion.
Dr. Horváth-Sarródi Andrea

20 Promotion of positive mental health and possibilities of prevention of mental disorders.
Dr. Horváth-Sarródi Andrea

21 Mental health policy.
Dr. Horváth-Sarródi Andrea

22 Role of physicians in the primary, secondary and tertiary levels of prevention.
Dr. Horváth-Sarródi Andrea

23 Complex health promotion programs.
Dr. Horváth-Sarródi Andrea

24 Examples for effective health promotion activities.
Dr. Horváth-Sarródi Andrea

Practices
Seminars
Exam topics/questions
Neptun Meet Street

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
HEALTH AND SOCIETY

Course director:

Dr. János Girán, assistant professor
Department of Public Health Medicine
janos.giran@gmail.com

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1

Number of hours/semester:
12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 25
Prerequisites: none

Topic

The majority of common life phenomena and processes closely connected to health. The core objective of our course is to offer students a special overview of health in a selected variety of social contexts and perspectives. We will examine how social, cultural, religious, economic and other forces, impacts and requirements influence health. Our course readings and discussions will help us reveal some hidden aspects of health-related actions or highlight some health aspects of everyday life. This course is built around lectures, including guest lecture, class discussion, and debates.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Students are required to write one of three essay assignments offered during the term. The paper should be approximately 5 pages in length (Arial; 12 pt; 1.5 spaced). Submit papers in hard copy as well as electronically, via email.

Making up for missed classes

No make up classes

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature


Lectures

1 Health norms and social norms (from tribal health concepts to contemporary health ideas)
   Dr. Girán János
2 Religion prescriptions and regulations and Health
   Dr. Girán János
3 Political ideologies and Health
   Dr. Girán János
4 Health-related actions of different political regimes
   Dr. Girán János
5 Economy and Health
   Dr. Girán János
6 Life expectancy and economic growth
   Dr. Girán János
7 Conflict and violence and Health
   Dr. Girán János
8 Consumer society and Health
   Dr. Girán János
9 Costs of being unhealthy
   Dr. Girán János
10 Urban environment and Health  
   Dr. Girán János
11 Potential health impacts of accelerated urbanisation  
   Dr. Girán János
12 Summary  
   Dr. Girán János

Practices
Seminars
Exam topics/questions
Written test

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-IET-T  INNOVATIONS IN HEALTHCARE TECHNOLOGY**

**Course director:**
Dr. MIKLÓS NYITRAI, professor
Department of Biophysics  •  miklos.nyitrai@aok.pte.hu

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

**Number of hours/semester:**
13 lectures + 11 practices + 0 seminars = total of 24 hours

**Course headcount limitations (min.-max.):**
5 – 200

**Prerequisites:**
none

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**Topic**

Giving an interdisciplinary learning approach is essential for the future of health care professionals. In the recent decades, information technology has become an everyday tool for the medical practice, and many new, innovative technology started to form and revolutionize the patient care. The course is designed to provide students with insight into the world of shaping our future doctors and technical developments, and familiarize themselves with the procedures and means by which they will encounter later in their work.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

Written exam (simple-choice test)

Making up for missed classes

None

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
- Notes
- **Recommended literature**

  Dr. Meskó Bertalan: The Guide to the Future of the Medicine, Technology and the Human Touch
  Joseph Dyro, Ernesto Ladanza: Clinical Engineering Handbook
  Dr. Meskó Betalan: Social Media in Clinical Practice
  Dr. Meskó Bertalan: My Health: Upgraded: Revolutionary Technologies to Bring a Healthier Future
  Alec Ross: Industries of the Future
  Own lecture notes

**Lectures**

1. Introduction, famous innovators, leading medical technologies
   Dr. Nyitrai Miklós

2. Medical simulation education
   Dr. Maróti Péter Dezső

3. 3D printing in medicine (polymers, metals)
   Dr. Maróti Péter Dezső

4. Robotics in healthcare - robotic surgery, myoelectric prosthesis, assistive devices
   Dr. Maróti Péter Dezső

5. Human-machine interface (HMI): human exoskeletons
   Dr. Maróti Péter Dezső

6. Medical 3D visualization and image processing
   Dr. Nyitrai Miklós

7. Innovative materials in healthcare (“smart materials” biocompatible materials)
   Dr. Maróti Péter Dezső

8. Electronic and mobile healthcare solutions (e-health / m-health)
   Dr. Maróti Péter Dezső

9. Innovative patient-care, patient management and infrastructure
   Dr. Maróti Péter Dezső

10. 3D Bioprinting: tissue printing
    Dr. Nyitrai Miklós

11. Innovation management in healthcare
    Dr. Maróti Péter Dezső
Innovation management in healthcare
Dr. Maróti Péter Dezső

Test
Dr. Maróti Péter Dezső

Practices

2  Introduction, famous innovators, leading medical technologies
   Dr. Nyitrai Miklós

4  Medical simulation education
   Dr. Maróti Péter Dezső

6  3D printing in medicine (polymers, metals)
   Dr. Maróti Péter Dezső

8  Robotics in healthcare - robotic surgery, myoelectric prosthesis, assistive devices
   Dr. Maróti Péter Dezső

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    Dr. Maróti Péter Dezső

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    Dr. Nyitrai Miklós

14 Innovative materials in healthcare ("smart materials" biocompatible materials)
    Dr. Maróti Péter Dezső

16 Electronic and mobile healthcare solutions (e-health / m-health)
    Dr. Maróti Péter Dezső

18 Innovative patient-care, patient management and infrastructure
    Dr. Maróti Péter Dezső

20 3D Bioprinting: tissue printing
    Dr. Nyitrai Miklós

24 Test
    Dr. Maróti Péter Dezső

Seminars

Exam topics/questions

Based on lectures

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Maróti Péter Dezső (X7MO4Y), Dr. Nyitrai Miklós (RY5UDR)
The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Epidemics of infectious diseases have always played a role in human history. The morbidity and mortality of infectious diseases greatly shaped the demography, politics, and culture.

The causative agents of diseases had long been a mystery for which numerous theories were proposed. Discovery of pathogens meant the beginning of a new era of epidemiology and the possibility of the effective fight against infectious diseases.

Although the significance of communicable diseases in developed countries is less and less important today, the history of the epidemiological discoveries is still an interesting field of medical science. This special field of medicine play also today a very important role in preventive medicine.

The students can get an inside view of cardinal discoveries and the history of great epidemics.

**Conditions for acceptance of the semester**

Participation in lectures is obligatory which is registered.

Absences should not exceed 15% (2x45 min). Otherwise signature of grade book is denied.

**Mid-term exams**

**Making up for missed classes**

There are no make-up classes.

**Reading material**

- **Obligatory literature**
  - **Literature developed by the Department**
    
    Educational material uploaded on Neptun.

- **Notes**

- **Recommended literature**

**Lectures**

1. Basics of epidemiology of infectious diseases  
   Dr. Németh Katalin
2. Early theories of infectious diseases  
   Dr. Németh Katalin
   Dr. Németh Katalin
4. Plague 2.  
   Dr. Németh Katalin
5. Smallpox  
   Dr. Németh Katalin
6. Leprosy  
   Dr. Németh Katalin
7. Tuberculosis  
   Dr. Németh Katalin
8. Syphilis  
   Dr. Németh Katalin
9. Childhood diseases 1. (Poliomyelitis)  
   Dr. Németh Katalin
10. Childhood diseases 2. (Diphtheria, Measels)  
    Dr. Németh Katalin
    Dr. Németh Katalin
    Dr. Németh Katalin
Practices

Seminars

Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Németh Katalin (R7XSZN)
Evidence-based Chemical and Physical Carcinogenesis

Course director: Dr. Timea Varjas, assistant professor
Department of Public Health Medicine • vtini_68@yahoo.com

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 1 – 20

Prerequisites: none

Topic
The course is focusing on chemical and physical carcinogens and specific exposures.
Since the beginning of the publication of the IARC monographs, more than 900 agents have been evaluated. We highlight some important chemicals, or physical exposures that are frequent in our everyday life also try to focus on the prevention of the corresponding diseases.

Conditions for acceptance of the semester
Absences should not exceed 25% of lectures (4x45 min). Otherwise signature is denied.

Mid-term exams
Written test after the last lecture. All slides and recommended articles are uploaded to Neptun.

Making up for missed classes
based on individual consideration

Reading material
- Obligatory literature
- Literature developed by the Department
  All slides and recommended articles are uploaded to Neptun.
- Notes
- Recommended literature

Lectures

1. The role of IARC
   Dr. Szabó István
2. The Preamble of monographs
   Dr. Szabó István
3. The Preamble of monographs
   Dr. Szabó István
4. Chemical agents (air pollution, industrial)
   Dr. Szabó István
5. Chemical agents (pesticides, metals)
   Dr. Szabó István
6. Chemical agents (occupational hazards)
   Dr. Szabó István
7. Chemical agents (smoking, smokeless tobacco)
   Dr. Szabó István
8. Chemical agents (Betel nut chewing, drinking water, consumer products, food)
   Dr. Szabó István
9. Chemical agents (pharmaceutical drugs, nanoparticles)
   Dr. Szabó István
10. Chemical agents (plastic industry, hormones)
    Dr. Szabó István
11. Physical risk factors (hot drinks, radiation)
    Dr. Szabó István
12. Biological agents (HPV, Hepatitis, HIV)
    Dr. Szabó István
Practices
Seminars
Exam topics/questions

All slides and recommended articles are uploaded to Neptun.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
OAF-KEF-T  PHYSICAL BASIS AND APPLICATION OF MEDICAL IMAGING TECHNIQUES

Course director:  DR. DENES LŐRINCZY, professor emeritus
Department of Biophysics  •  denes.lorinczy@aok.pte.hu

2 credit  •  midterm grade  •  Optional subject  •  autumn semester  •  recommended semester: 1

Number of hours/semester:  24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.):  1 – 5  Prerequisites:  none

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. Ultra sound 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.

Mid-term exams

Up to the end of semester an oral exam in case of missed test.

Making up for missed classes

A short written presentation from the missed topics.

Reading material

-  Obligatory literature
-  Literature developed by the Department
  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.
-  Notes
-  Recommended literature

Lectures

1  The light. Fermat principle.
   Dr. Lőrinczy Dénes
2  Basic optics, interference, diffraction.
   Dr. Lőrinczy Dénes
3  Camera, optics of eye, aberration of image formation.
   Dr. Lőrinczy Dénes
4  Light microscope, resolution (Abbe).
   Dr. Lőrinczy Dénes
5  Phasecontrast and polarised microscope.
   Dr. Lőrinczy Dénes
6  Stereomicroscope.
   Dr. Lőrinczy Dénes
7  The structure of electronmicroscope, its types, their working principle
   Dr. Lőrinczy Dénes
8  Laser tweezers.
   Dr. Lőrinczy Dénes
9  Atomic force microscope (AFM).
   Dr. Lőrinczy Dénes
10 Fluorescence microscope.
    Dr. Lőrinczy Dénes
11 Ultramicroscope.
    Dr. Lőrinczy Dénes
12 Construction of an X-ray equipment, characteristic of X-ray.
    Dr. Lőrinczy Dénes
13 Spectrum of X-ray, its interaction with matter.
    Dr. Lőrinczy Dénes

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<table>
<thead>
<tr>
<th>Course Description</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 X-ray image formation, summation effect, contrast, image amplification.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>15 CT, two and three dimensional image formation, resolution.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>16 PET, gamma camera.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>17 Scintigraphy.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>18 Principle of magnetic resonance, the NMR.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>19 Principle of magnetic resonance imaging (MRI), limits of application.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>20 Interpretation of TR, TE, T1 and T2, as well as their interrelationship.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>21 Ultrasound, its medical and biological effects.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>22 Ultrasound imaging.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>23 Written test.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
<tr>
<td>24 Written test.</td>
<td>Dr. Lőrinczy Dénes</td>
</tr>
</tbody>
</table>

Practices

Seminars

Exam topics/questions

Written test

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-KFO-T  CAPILLARY ELECTROPHORESIS IN LABORATORY DIAGNOSTICS**

**Course director:** Dr. CSILLA FENYVESI-PÁGER, assistant professor  
Institute of Bioanalysis • csilla.pager@aok.pte.hu

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 1

**Number of hours/semester:** 12 lectures + 0 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 5 – 50  
**Prerequisites:** none

### Topic

Capillary electrophoresis in laboratory diagnostic processes are considered to be the most modern separation techniques. Its application in health sciences is obvious. The course deals with the theoretical background and application of the microfluidic methods. Design of capillary electrophoretic experiments. Proteins and small molecules. Electrophoresis of cells. Special applications, chiral separations, microbiological applications.

### Conditions for acceptance of the semester

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

### Mid-term exams

Written examination within the last lecture.

### Making up for missed classes

According to the faculty rules.

### Reading material

- **Obligatory literature**
  - Literature developed by the Department  
    [http://aok.pte.hu/bioanalitika/Oktatas/Oktatas.html](http://aok.pte.hu/bioanalitika/Oktatas/Oktatas.html)
- **Notes**
- **Recommended literature**
  - James Landers (ed.): Handbook of Capillary Electrophoresis, CRC Press, 1994

### Lectures

1. Evolution of separation methods  
   Fenyesine Dr. Páger Csilla
2. Development of new electrophoretic methods  
   Fenyesine Dr. Páger Csilla
3. Theory of electrophoresis  
   Fenyesine Dr. Páger Csilla
4. Separation modes in electrophoresis, Zone electrophoresis  
   Fenyesine Dr. Páger Csilla
5. Isoelectric focusing theory, IEF methodology, sandwich injection  
   Fenyesine Dr. Páger Csilla
6. Isotachophoresis  
   Fenyesine Dr. Páger Csilla
7. Gel electrophoresis  
   Fenyesine Dr. Páger Csilla
8. High resolution analysis of macromolecules  
   Fenyesine Dr. Páger Csilla
9. Chiral analysis of drugs  
   Fenyesine Dr. Páger Csilla
10. Lab-on-a-chip methodology  
    Fenyesine Dr. Páger Csilla
11. Application in laboratory diagnostics  
    Fenyesine Dr. Páger Csilla
12. Coupling with mass spectrometry  
    Fenyesine Dr. Páger Csilla

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Practices

Seminars

Exam topics/questions

Discussion of practical questions after home work.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
### Course director:

**DR. CSABA VARGA**, professor  
Department of Public Health Medicine • chemsafety@freemail.hu

<table>
<thead>
<tr>
<th>OAF-KKN-T</th>
<th>THE ENVIRONMENT AND THE ENVIRONMENTAL MONITORING PUBLIC HEALTH RELEVANCE</th>
</tr>
</thead>
</table>
| **Course director:** | **DR. CSABA VARGA**, professor  
Department of Public Health Medicine • chemsafety@freemail.hu |

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

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

**Course headcount limitations (min.-max.):** 1 – 30  
**Prerequisites:** none

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**Topic**

The main goal of this course is to familiarize the students with the environmental protection as an increasingly important science. The course intends to introducing the structure, composition of the most important environmental elements (water, soil, air..), and its threatening characteristics, furthermore introducing the global nature protection including its institutional background. The students will be familiarized with the environmental protection, and the role of environmental monitoring in public health.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

The conditions for accepting the semester is a personal ten minute-presentation or only writing a simple choice test on the last lecture (it depends on the students choice).

Absence of 2x2 hours is acceptable. Otherwise the semester cannot be accepted.

**Making up for missed classes**

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - Neptune
- **Notes**
- **Recommended literature**

**Lectures**

   Dr. Varga Csaba
2. Conservation medicine.    
   Dr. Varga Csaba
3. Ecology I.     
   Dr. Varga Csaba
4. Ecology II.     
   Dr. Varga Csaba
5. Background, missions and goals of IUCN.     
   Bérczi Bálint Dániel
   Bérczi Bálint Dániel
7. The structure of atmosphere. Physical and chemical compounds.     
   Bérczi Bálint Dániel
8. Natural atmospheric processes, which play an important role in the development of air pollution.     
   Bérczi Bálint Dániel
9. The key concepts of air pollution.     
   Bérczi Bálint Dániel
   Bérczi Bálint Dániel
11. Soil structure, soil types.     
   Bérczi Bálint Dániel
12. The forms of soil pollution and their troubleshooting possibilities. Soil protection.     
   Bérczi Bálint Dániel
13. Waterchemistry I.     
   Dr. Varga Csaba

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14 Waterchemistry II.  
   Dr. Varga Csaba
15 The qualitative and quantitative composition of subsurface waters.  
   Dr. Varga Csaba
16 Monitoring systems of subsurface waters.  
   Dr. Varga Csaba
17 The qualitative and quantitative composition of surface waters.  
   Dr. Varga Csaba
18 Monitoring systems of surface waters. The EU water frame directive.  
   Dr. Varga Csaba
19 The connection between enviromental pollution and climate change I.  
   Bérczi Bálint Dániel
20 The connection between enviromental pollution and climate change II.  
   Bérczi Bálint Dániel
21 Global warming effects on biodiversity I.  
   Bérczi Bálint Dániel
22 Global warming effects on biodiversity II.  
   Bérczi Bálint Dániel
23 The usage possibilities of alternative energy resources (solar energy, biogas, wind energy...).  
   Bérczi Bálint Dániel
24 The risk of alternative energy applications.  
   Bérczi Bálint Dániel

Practices
Seminars
Exam topics/questions
Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
### Controversial Effects of Media on Epidemiology of Communicable and Non-Communicable Diseases

**Course director:** DR. KATALIN SZENDI, assistant professor  
Department of Public Health Medicine • szkata82@yahoo.co.uk

| Credit | Midsemester grade | Optional subject | Both semesters | Recommended semester: 1
---|---|---|---|---
2 |  |  |  | 

**Number of hours/semester:** 24 lectures + 0 practices + 0 seminars = total of 24 hours  
**Course headcount limitations (min.-max.):** 1 – 30  
**Prerequisites:** none

### Topic

The main objective of this course is to explore and show the effect of different kinds of media on the most important and most frequent diseases and causes of death.

Health behaviour of the population is one of the major health determinants. Understanding its influencing effects and learning ways of application can help medical and dentistry students in patient care in the future. Media has a major role in particular of primary and secondary prevention. In addition to traditional media social media becomes more pronounced which may turn into a very effective way of prevention possessing the adequate knowledge.

### Conditions for acceptance of the semester

Maximum of 15 % absence allowed

### Mid-term exams

At the end of the semester online test on Neptun.

### Making up for missed classes

Oral report from the missed issue.

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**  
  Educational material uploaded on Neptun.
- **Notes**
- **Recommended literature**

### Lectures

1. History of media, types of media  
   Dr. Berényi Károly
2. Health behaviour and its most important influencing factors  
   Dr. Berényi Károly
3. Health behaviour in primary, secondary and tertiary prevention  
   Dr. Berényi Károly
4. Short and long term effects of health education and health promotion on health behaviour  
   Dr. Berényi Károly
5. Mass communication in the ancient world and in the middle ages  
   Dr. Berényi Károly
6. Role of the church and religions in idea of health  
   Dr. Berényi Károly
7. Role of media in social integration  
   Dr. Berényi Károly
8. Media and causes of violent death  
   Dr. Berényi Károly
9. Hygiene in media  
   Dr. Berényi Károly
10. Role of media in the spread and prevention of infectious diseases  
    Dr. Berényi Károly
11. Change of body image and ideal body shape from historical era to nowadays  
    Dr. Berényi Károly
12. Role of media in sexual behaviour  
    Dr. Berényi Károly
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<th>Course</th>
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<tr>
<td>13</td>
<td>Effects of media on ideal family models</td>
<td>Dr. Berényi Károly</td>
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<td>14</td>
<td>Physical activity and media</td>
<td>Dr. Berényi Károly</td>
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<td>15</td>
<td>Effects of media on diet quality</td>
<td>Dr. Berényi Károly</td>
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<td>16</td>
<td>Age-specific projections of idea of health by mass communication</td>
<td>Dr. Berényi Károly</td>
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<td>17</td>
<td>Communication of environmental hazards</td>
<td>Dr. Berényi Károly</td>
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<td>18</td>
<td>Mental health in mass communication</td>
<td>Dr. Berényi Károly</td>
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<td>19</td>
<td>Addictions in media</td>
<td>Dr. Berényi Károly</td>
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<td>20</td>
<td>Subliminal messages</td>
<td>Dr. Berényi Károly</td>
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<td>21</td>
<td>Media as an addiction</td>
<td>Dr. Berényi Károly</td>
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<tr>
<td>22</td>
<td>Health messages in social media</td>
<td>Dr. Berényi Károly</td>
</tr>
<tr>
<td>23</td>
<td>Medical doctors in media</td>
<td>Dr. Berényi Károly</td>
</tr>
<tr>
<td>24</td>
<td>Role of media in medical doctors’ judgement</td>
<td>Dr. Berényi Károly</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

**Neptun**

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
**OAF-MPR-T  MARKETING IN DIFFERENT LEVELS OF PREVENTION**

**Course director:**

DR. TIMEA VARJAS, assistant professor

Department of Public Health Medicine • vtini_68@yahoo.com

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

**Number of hours/semester:**

12 lectures + 0 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 4 – 30

**Prerequisites:** none

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**Topic**

What can influence the public attitude to health? How can laymen get information about health and diseases? What are the advantages and disadvantages of media in these topics? How can we use marketing models in disease prevention? These and other important issues can be answered on this course. However the effectiveness of the primary prevention is the highest the most of the resources are assigned to tertiary prevention.

The marketing approach is particularly important to medical practitioners, as they are involved in the health sector as an economic system. Students can learn some special marketing method which can help to prevent their patients’ diseases.

**Conditions for acceptance of the semester**

Absences should not exceed 15% of lectures and practicals (2x45 min). Otherwise signature of grade book is denied.

Examination: written test

Mid-term exams

Examination: written test

Making up for missed classes

based on individual consideration

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Philip Kotler: Marketing Management

**Lectures**

1. History of marketing - Development of marketing
   Dr. Berényi Károly

2. Subliminal message
   Dr. Berényi Károly

3. Promotion - opinion-forming effect of media
   Dr. Berényi Károly

4. „Marketing mix”, „4P” - „7P”
   Dr. Berényi Károly

5. Health as a service
   Dr. Berényi Károly

6. Primary, secondary and tertiary prevention in media
   Dr. Berényi Károly

7. Preventive tasks in marketing for communicable and non-communicable diseases.
   Dr. Berényi Károly

8. Lifestyle-marketing
   Dr. Berényi Károly

9. Nutrition-marketin
   Dr. Berényi Károly

10. Drug-marketing - Dietary supplement-marketing
    Dr. Berényi Károly

11. How to use marketing for individual medical work?
    Dr. Berényi Károly

12. How to use the marketing in health promotion. Primary prevention - pros and cons - Health promotion approach to marketing opportunities
    Dr. Berényi Károly
Practices
Seminars
Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-MUV-T  Psychiatry and Art

Course director: DR. TAMÁS TÉNYI, professor
Department of Psychiatry and Psychotherapy • tenyi.tamas@pte.hu

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

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 3 – 20  Prerequisites: none

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

Mid-term exams
TVSZ szerint

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

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
1  Psychopathology of art I  Dr. Tényi Tamás
2  Psychopathology of art II  Dr. Tényi Tamás
3  Psychopathology of art III  Dr. Tényi Tamás
4  Psychology of creativity I  Dr. Tényi Tamás
5  Psychology of creativity II  Dr. Tényi Tamás
6  Poetry of psychotics  Dr. Tényi Tamás
7  Van Gogh  Dr. Tényi Tamás
8  Art therapy I  Dr. Tényi Tamás
9  Art therapy II  Dr. Tényi Tamás
10  Music therapy I  Dr. Tényi Tamás
11  Music therapy II  Dr. Tényi Tamás
12  Summary  Dr. Tényi Tamás

Practices
Seminars
Exam topics/questions
None
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-NET-T  INTERNET (COMPUTER APPLICATIONS 2)
Course director: DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis • laszlo.poto@aok.pte.hu

1 credit • midterm grade • Optional subject • both semesters • recommended semester: 1

Number of hours/semester: 0 lectures + 12 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 20  
Prerequisites: none

Topic
Internet, FTP, E-mail, WWW, chat, VoIP, ... and Facebook, Twitter, Web2... 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

Mid-term exams
Complete and submit the tasks weekly.

Making up for missed classes
One extra class

Reading material
- Obligatory literature
- Literature developed by the Department
  Hand-outs, task lists and tests
- Notes
- Recommended literature

Lectures
Practices
1  Internet history. Internet access options.  
   Dr. Pótó László
2  Connections 1 (email)  
   Dr. Pótó László
3  Connections 2 (news-groups, forums, chat, phone, ...)  
   Dr. Pótó László
4  Connections 2 (news-groups, forums, chat, phone, ...)  
   Dr. Pótó László
5  Graphische Darstellung- 1  
   Dr. Pótó László
6  Graphische Darstellung- 1  
   Dr. Pótó László
7  Up- and downloading files  
   Dr. Pótó László
8  Up- and downloading files  
   Dr. Pótó László
9  Find and look for information: the web 1  
   Dr. Pótó László
10  Find and look for information: the web 2  
    Dr. Pótó László
11  Searching information - the web 2. Other Internet services: e-government, e-business, e-learning, etc.  
    Dr. Pótó László
12  web2 ... communities, web-based services  
    Dr. Pótó László
Seminars

Exam topics/questions

Tasks to submit, tests to complete

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pótó László (FIO4UU)
OAF-NS1-T  **NOBEL PRIZE AWARDED CELL BIOLOGY I**

**Course director:**
Dr. Marianna Pap, associate professor
Department of Medical Biology and Central Electron Microscope Laboratory • marianna.pap@aok.pte.hu

| 2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1 |

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

**Course headcount limitations (min.-max.):**
1 – 200

**Prerequisites:** none

**Topic**

The aim of the course is to present the most important and most exciting Nobel Prize-winning molecular cell biology discoveries based on Nobel lectures given by the winners. The background story of the awards reveals many years of research work, good ideas, good fortune mixed with family and other personal memories. There is no single recipe for success, the road is always a bit different, and perhaps the only common feature is the teamwork. From the presentations one might get insight of the winners’ personality as well. An important aspect was in the selection of the topics to emphasize their significance (DNA-, RNA-structure and their synthesis, ribosome function), their impact on current medical way of thinking (e.g. Prions) and diagnostic methods (e.g. recombinant DNA technology, DNA sequencing), the description of their present and future medical applicability (e.g. in vitro fertilization), as well as to highlight their potential relations to different diseases (e.g. cell cycle regulation, reprogram of differentiated cells, RNA interference, papillomaviruses, HIV). Lectures are organized based on the topics related to the weekly schedule of the molecular cell biology course, not in chronological order. Most of the presented discoveries and experiments are involved in the molecular cell biology course material, so hopefully their discussion helps in the better understanding of those topics and lead to a more effective and shorter exam preparation.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

2 written tests: on week 7 and on week 14.

**Making up for missed classes**

Participation on Hungarian or German lectures is the only possibility to make-up missed lectures.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  www.nobelprize.org

**Lectures**

1  Life of Alfred Nobel  
   Dr. Pap Marianna
2  History of Nobel prize, interesting facts  
   Dr. Pap Marianna
3  Structure of proteins  
   Dr. Pap Marianna
4  Prions  
   Dr. Pap Marianna
5  Structure of nucleic acids, catalytic RNA molecules  
   Dr. Pap Marianna
6  Recombinant DNA technology  
   Dr. Pap Marianna
7  PCR  
   Dr. Pap Marianna
8  DNA sequencing  
   Dr. Pap Marianna
9  Inhibition of gene expression (KO mutation)  
   Dr. Pap Marianna
10 Inhibition of gene expression (RNA interference)  
    Dr. Pap Marianna
11 Regulation of cell cycle  
   Dr. Pap Marianna
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<td>12</td>
<td>Regulation of cell cycle</td>
<td>Dr. Pap Marianna</td>
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<td>13</td>
<td>DNA replication</td>
<td>Dr. Pap Marianna</td>
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<td>14</td>
<td>DNA repair</td>
<td>Dr. Pap Marianna</td>
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<td>15</td>
<td>Eukaryotic RNA synthesis</td>
<td>Dr. Pap Marianna</td>
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<td>16</td>
<td>Splicing</td>
<td>Dr. Pap Marianna</td>
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<td>17</td>
<td>Structure and function of ribosomes</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>18</td>
<td>Role of RNA molecules in translation, Genetic code</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>19</td>
<td>Gene regulation in prokaryotic cells</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>20</td>
<td>Gene regulation in eukaryotic cells</td>
<td>Dr. Pap Marianna</td>
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<td>21</td>
<td>Rough endoplasmic reticulum, vesicular transport</td>
<td>Dr. Pap Marianna</td>
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<td>22</td>
<td>Receptor-mediated endocytosis</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>23</td>
<td>Exam</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>24</td>
<td>Exam</td>
<td>Dr. Pap Marianna</td>
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** Practices

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
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 ancient Greek and Persian and Islamic 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, the most outstanding physicians and clinical schools, playing a prominent role in the European progress will be reviewed.

Our aim is to demonstrate that each culture represents a value which contributes to the common treasure of humanity.

### Conditions for acceptance of the semester

Survey of the theoretical basis of medical practice in a historical period.

### Mid-term exams

Making up for missed classes

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
  - Summary of the content of each lecture (detailed description of authors and the main outlines of their activity promoting the medicine)
- **Notes**
- **Recommended literature**
  - Delano: The Story of Medicine, London

### Lectures

1. Archaic medicine  
   Dr. Rúzsás Csilla
2. Ancient Egypt, Mesopotamia, India, traditional Chinese medicine  
   Dr. Rúzsás Csilla
3. Medicine in Greece in the Antiquity  
   Dr. Rúzsás Csilla
4. The most outstanding medical schools; Hippocratic medicine  
   Dr. Rúzsás Csilla
   Dr. Rúzsás Csilla
6. Byzantine leading doctors  
   Dr. Rúzsás Csilla
7. Early medieval medicine in Europe  
   Dr. Rúzsás Csilla
8. Monasteric medicine in medieval Europe  
   Dr. Rúzsás Csilla
9. The medicine under Islam  
   Dr. Rúzsás Csilla
10. The most outstanding physicians of Arabic-Islamic medicine  
    Dr. Rúzsás Csilla
11. Foundation of the universities in the Middle-Age  
    Dr. Rúzsás Csilla
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<tr>
<th>No.</th>
<th>Course Title</th>
<th>Instructor</th>
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<tr>
<td>12</td>
<td>Scholastic medicine</td>
<td>Dr. Rúzsás Csilla</td>
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<tr>
<td>13</td>
<td>Medicine in the Renaissance</td>
<td>Dr. Rúzsás Csilla</td>
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<tr>
<td>14</td>
<td>Vesal. Paracelsus.</td>
<td>Dr. Rúzsás Csilla</td>
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<tr>
<td>15</td>
<td>Medicine of the 17th century: the golden age of sciences</td>
<td>Dr. Rúzsás Csilla</td>
</tr>
<tr>
<td>16</td>
<td>Raise of natural sciences. Iatrophysics and iatrochemistry</td>
<td>Dr. Rúzsás Csilla</td>
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<td>17</td>
<td>The age of the 18th century</td>
<td>Dr. Rúzsás Csilla</td>
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<td>18</td>
<td>The age of enlightenment. Progress in pathology.</td>
<td>Dr. Rúzsás Csilla</td>
</tr>
<tr>
<td>19</td>
<td>Beginnings of modern medicine in the 19th century</td>
<td>Dr. Rúzsás Csilla</td>
</tr>
<tr>
<td>20</td>
<td>Medical schools in Europe</td>
<td>Dr. Rúzsás Csilla</td>
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<tr>
<td>21</td>
<td>Specialisation in medicine in the 19th century</td>
<td>Dr. Rúzsás Csilla</td>
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<tr>
<td>22</td>
<td>New approaches and equipment in medicine of the 19th century</td>
<td>Dr. Rúzsás Csilla</td>
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<tr>
<td>23</td>
<td>Medicine in the first half of the 20th century</td>
<td>Dr. Rúzsás Csilla</td>
</tr>
<tr>
<td>24</td>
<td>Main trends in medicine in the second half of the 20th century</td>
<td>Dr. Rúzsás Csilla</td>
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**Practices**

**Seminars**

**Exam topics/questions**

Possible themes for the essays:
- Characteristics of the ancient Egyptian and Mesopotamian culture.
- Medicine of ancestral Chinese civilization.
- Medicine of Greece in the Antiquity.
- Hippocratic medicine and the Hippocratic Collection.
- Post-hippocratic medicine: The school of Athens and Alexandria.
- Outstanding physicians of Persian and Arabic-Islamic medicine.
- Medical education in the Middle-Ages.
- The main epidemics in Europe.
- The most prominent physicians in the Renaissance.
- Main trends in medicine of the 19th century.
- Ignatz Semmelweis, the saver of the mothers.
- Most important discoveries in medicine in the 20th century.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
# OAF-PEG-T: The Medical Aspects of Human Population Genetics

**Course director:**

DR. TIMEA VARJAS, assistant professor  
Department of Public Health Medicine • vtini_68@yahoo.com

<table>
<thead>
<tr>
<th>Credits</th>
<th>Midsemester grade</th>
<th>Optional subject</th>
<th>Both semesters</th>
<th>Recommended semester:</th>
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<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

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

**Course headcount limitations (min.-max.):** 3 – 35  
**Prerequisites:** none

## Topic

Throughout the course, we intend to give enlightenment regarding the practical side of detecting genetic differences between human populations therefore students may familiarize themselves with the conceptual background and medical aspects of the population genetics. The course also intends to show the relation between different disease spectrums and populations by international studies focusing on the detection of rare diseases, origin related researches, migration patterns and forensic medicine.

## Conditions for acceptance of the semester

Maximum of 15% absence allowed

## Mid-term exams

A simple choice test has to be done on the last lecture.

## Making up for missed classes

There are no make-up classes.

## Reading material

- **Obligatory literature**
- **Literature developed by the Department**  
  Educational material will be uploaded on Neptun.
- **Notes**
- **Recommended literature**

## Lectures

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Title</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction of population genetics.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>2</td>
<td>Historical background, basic principles (darwinism and lamarckism, role of migration)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>3</td>
<td>Factors determining phenotype.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>4</td>
<td>Genotype, inherited epigenetic factors, non-inherited environmental factors. The industrial melanism.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>5</td>
<td>Genotype and allele frequencies.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>6</td>
<td>The Hardy-Weinberg principle and medical examples.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>7</td>
<td>The Four evolutionary forces.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>8</td>
<td>Mutation and polymorphism - the author of variation.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>9</td>
<td>Single nucleotide polymorphisms (SNPs) and diseases. What is the link between?</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>10</td>
<td>Allelic, dominant, recessive and codominant genetic models to associate SNPs with risk.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>11</td>
<td>Human Genome Project, The International HapMap Project, The 1000Genomes Project.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>12</td>
<td>Ethical issues of genotyping.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>13</td>
<td>Natural selection - the editor</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>14</td>
<td>Genetic drift - the randomizer</td>
<td>Bérczi Bálint Dániel</td>
</tr>
</tbody>
</table>
15 Gene flow - the homogenizer  
Bérczi Bálint Dániel

16 The genetic distance between ethnic groups. The mitochondrial Eve  
Bérczi Bálint Dániel

17 Human origin related researches - The application of chromosome Y.  
Bérczi Bálint Dániel

18 Archeogenetics, microorganism related investigations in fossil bones and mummies.  
Bérczi Bálint Dániel

19 Application of population genetics in Forensic Medicine.  
Bérczi Bálint Dániel

20 Next generation sequencing technologies in Forensic Medicine.  
Bérczi Bálint Dániel

21 Various disease spectrums in various ethnic groups.  
Bérczi Bálint Dániel

22 The example of ethnic specific pattern of genetic variants in ESR1 and the risk of breast cancer.  
Bérczi Bálint Dániel

23 Composition of population genetics researches.  
Bérczi Bálint Dániel

24 Methodology and possible workflows from planning to bioinformatics.  
Bérczi Bálint Dániel

**Practices**

**Seminars**

**Exam topics/questions**

**Neptun**

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
OAF-PPH-T  CHEMISTRY OF POLYPHENOLS

Course director: DR. ÁGNES BÓNA, assistant professor
Department of Biochemistry and Medical Chemistry  agnes.bona@aok.pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 1
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 2 – 10 Prerequisites: none

Topic
Oxygen centered free radicals and reactive oxygen species (ROS) are highly toxic resulting in cell death and tissue damage leading to chronic diseases such as atherosclerosis, diabetes, cancer, cirrhosis and neurodegenerative disorders. Antioxidants are compounds which can inhibit or delay the oxidative damage preventing many diseases. Plant polyphenols are naturally occurring secondary plant metabolites, synthesized in response to environmental stress factors. As being antioxidants and free-radical scavengers they serve as essential components of the human diet. The aim of the course is to summarise the most recent researches in the topic according to the prestigious scientific journals available in English language.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Written exam on the 13th week, the make up of the exam is not possible.

Making up for missed classes
The make up of the course is not possible.

Reading material
- Obligatory literature
- Literature developed by the Department
  Neptun
- Notes
- Recommended literature

Lectures
1  Introduction
   Dr. Bóna Ágnes
2  Introduction
   Dr. Bóna Ágnes
3  Definition, chemical structure and classification of polyphenols
   Dr. Bóna Ágnes
4  Definition, chemical structure and classification of polyphenols
   Dr. Bóna Ágnes
5  Natural occurrence and biological role of polyphenols
   Dr. Bóna Ágnes
6  Natural occurrence and biological role of polyphenols
   Dr. Bóna Ágnes
7  Antioxidant activity of polyphenols
   Dr. Bóna Ágnes
8  Antioxidant activity of polyphenols
   Dr. Bóna Ágnes
9  Separation, identification and analysis of polyphenols
   Dr. Bóna Ágnes
10 Separation, identification and analysis of polyphenols
    Dr. Bóna Ágnes
11 Polyphenols in food industry
    Dr. Bóna Ágnes
12 Polyphenols in food industry
    Dr. Bóna Ágnes
13 Polyphenols and human diseases I.
    Dr. Bóna Ágnes
<table>
<thead>
<tr>
<th>No.</th>
<th>Course Description</th>
<th>Instructor</th>
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</thead>
<tbody>
<tr>
<td>14</td>
<td>Polyphenols and human diseases I.</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>15</td>
<td>Polyphenols and human diseases II.</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>16</td>
<td>Polyphenols and human diseases II.</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>17</td>
<td>HPLC separation of polyphenols</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>18</td>
<td>HPLC separation of polyphenols</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>19</td>
<td>Mass spectrometric (MS) analysis of polyphenols</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>20</td>
<td>Mass spectrometric (MS) analysis of polyphenols</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>21</td>
<td>Written exam</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>22</td>
<td>Written exam</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>23</td>
<td>Consultation</td>
<td>Dr. Bóna Ágnes</td>
</tr>
<tr>
<td>24</td>
<td>Consultation</td>
<td>Dr. Bóna Ágnes</td>
</tr>
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</table>

### Practices

### Seminars

### Exam topics/questions

### Neptun

*Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject*

### Participants
OAF-SB1-T  Stanford Lectures I: Behavioural Genetics

Course director: Dr. Róbert Mátics, associate professor
Department of Behavioural Sciences • bobmatix@gmail.com

2 credit • midterm grade • Optional subject • both semesters • recommended semester: 1

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

Course headcount limitations (min.-max.): 1 – 15

Prerequisites: none

Topic

Prof Robert Sapolsky at Stanford University uploaded a free course on biology of the human behaviour, which has many aspects connected to molecular genetics and behavioral genetics - new fields of research affecting our understanding of sex, aggression, language, diseases like schizophrenia and so on. In this course we will hear and see each one of his 2010 lectures in ca. 45-60 min. pieces and discuss the information delivered. The lectures can be stopped at any point so that emerging questions are negotiated in detail.

Curriculum:

1. General introduction, Behavioral evolution I. Key facts
2. Behavioral evolution II. Game theory
3. Behavioral evolution III. Misconceptions
4. Behavioral evolution IV. Intersexual conflicts and diseases
5. Molecular genetics I. Chimps to humans 97%, sibling to sibling 50%?
6. Molecular genetics II. Morphology vs function
7. Molecular genetics III. Diseases
8. Molecular genetics IV. Beyond disease
9. Behavioral genetics I. I’ve found the gene for that!
10. Behavioral genetics II. Prenatal effects
11. Behavioral genetics III. Metro dogs
12. Behavioral genetics IV. Gene-environment interactions; summary, questions, feedback

Conditions for acceptance of the semester

Maximum of 25% absence allowed

Mid-term exams

Make up by appointment

Making up for missed classes

Make-up classes possible, we’ll have to make appointments.

Reading material

- Obligatory literature
  none

- Literature developed by the Department
  Hand-outs

- Notes
  Extended notes by Prof Sapolsky, if you need them
  The lectures can be found at: http://www.youtube.com/watch?v=NNnIGh9g6fA&list=PL848F2368C90DDC3D

- Recommended literature
  Cornwallis C et al.: Promiscuity and the Evolutionary Transition to Complex Societies, Nature 466, 969. 2010 Hard, give intro to how to read.

Lectures

1. General introduction
   Dr. Mátics Róbert
2. Behavioral evolution I. Key facts
   Dr. Mátics Róbert
3. Behavioral evolution II. Game theory
   Dr. Mátics Róbert
4. Behavioral evolution II. Game theory
   Dr. Mátics Róbert
<table>
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<tr>
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<tbody>
<tr>
<td>5</td>
<td>Behavioral evolution III. Misconceptions</td>
<td>Dr. Mátics Róbert</td>
</tr>
<tr>
<td>6</td>
<td>Behavioral evolution III. Misconceptions</td>
<td>Dr. Mátics Róbert</td>
</tr>
<tr>
<td>7</td>
<td>Behavioral evolution IV. Intersexual conflicts and diseases</td>
<td>Dr. Mátics Róbert</td>
</tr>
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<td>Behavioral evolution IV. Intersexual conflicts and diseases</td>
<td>Dr. Mátics Róbert</td>
</tr>
<tr>
<td>9</td>
<td>Molecular genetics I. Chimps to humans 97%, sibling to sibling 50%?</td>
<td>Dr. Mátics Róbert</td>
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<td>10</td>
<td>Molecular genetics I. Chimps to humans 97%, sibling to sibling 50%?</td>
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<td>13</td>
<td>Molecular genetics III. Diseases</td>
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<td>17</td>
<td>Behavioral genetics I. I’ve found the gene for that!</td>
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<td>Behavioral genetics II. Prenatal effects</td>
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<td>Behavioral genetics II. Prenatal effects</td>
<td>Dr. Mátics Róbert</td>
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<tr>
<td>21</td>
<td>Behavioral genetics III. Metro dogs</td>
<td>Dr. Mátics Róbert</td>
</tr>
<tr>
<td>22</td>
<td>Behavioral genetics III. Metro dogs</td>
<td>Dr. Mátics Róbert</td>
</tr>
<tr>
<td>23</td>
<td>Behavioral genetics IV. Gene-environment interactions</td>
<td>Dr. Mátics Róbert</td>
</tr>
<tr>
<td>24</td>
<td>Summary, questions, feedback</td>
<td>Dr. Mátics Róbert</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

No detailed questions are asked about which gene does what, rather a synthesis and deep understanding of the connections between genetics, behaviour, disease etc. should be reached and given back.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
Stanford Lectures III: Chaos, Language, Depression

Course director: Dr. Róbert Mátics, associate professor
Department of Behavioural Sciences • bobmatix@gmail.com

2 credits • midsemester grade • Optional subject • both semesters • recommended semester: 1

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 1 – 15 Prerequisites: none

Topic

Prof Robert Sapolsky at Stanford University has a free course on human behavioural biology on YouTube. It covers topics from molecular and behavioral genetics through sex, aggression, language to diseases like schizophrenia, Huntington’s, Tourette’s etc. In this course we will hear and see altogether 8 of his 2010 lectures (each ca. 45-50 mins) and discuss the information delivered. The lectures can be stopped at any point so that emerging questions are negotiated in detail. Some examples:
- How to solve the problem that there are not enough genes to code for every bifurcation in the lungs or blood vessels?
- How to press an infinitely long tube into a limited space?
- What does a fractal have to do with human body development or the wiring of the cortex?
- How do languages arise out of nothing?
- What’s the definition of healthy? Somebody, who has the same diseases that everybody else does?

Conditions for acceptance of the semester

Maximum of 25% absence allowed

Mid-term exams

Make up possible by appointment

Making up for missed classes

Make up possible by appointment

Reading material

- Obligatory literature
  no compulsory books
- Literature developed by the Department
  Handouts will be given
- Notes
  Extended notes available
- Recommended literature

Lectures

1 Organisational topics, short introduction  
  Dr. Mátics Róbert
2 Reductionism  
  Dr. Mátics Róbert
3 from grandmother-neurons to Jennifer Aniston-neurons  
  Dr. Mátics Róbert
4 How to run out of genes and neurons?  
  Dr. Mátics Róbert
5 Non-linear and non-additive systems. Chaotic systems.  
  Dr. Mátics Róbert
6 Lorenz-attractor, strange attractors, the butterfly effect  
  Dr. Mátics Róbert
7 Fractals, Menger-sponge, Cantor-cube, Sierpinski carpet  
  Dr. Mátics Róbert
8 Cellular automaton, Conways game of life  
  Dr. Mátics Róbert
9 Neural networks, engrams, fractals to solve the packing problem  
  Dr. Mátics Róbert
10 Six degrees of separation, wiring of the cortex, bottom-up quality control  
   Dr. Mátics Róbert

11 Common features of human languages  
   Dr. Mátics Róbert

12 Modularity, lateralization, aphasias, alexia, dyslexia  
   Dr. Mátics Róbert

13 Chomsky vs Skinner  
   Dr. Mátics Róbert

14 Nicaraguan sign language, language acquisition  
   Dr. Mátics Róbert

15 Animal languages  
   Dr. Mátics Róbert

16 Genetics of language use: FOXP2, HARE5  
   Dr. Mátics Róbert

17 Pidgins to creoles, Disappearing languages  
   Dr. Mátics Róbert

18 Huntingtons, Tourettes, PANDAS, OCD, Jerusalem-syndrome, Stendhal-syndrome, Rapunzel-syndrome, Apotemnophilia etc  
   Dr. Mátics Róbert

19 Depression: biology and psychology, Reactive and Major depression  
   Dr. Mátics Róbert

20 Symptoms: anhedonia, grief, guilt, psychomotor retardation, self-injury, suicide, vegetative symptoms  
   Dr. Mátics Róbert

21 SAD, norepinephrine, MAO inhibitors, tricyclic antidepressants, reserpine, dopamine, Prozac, serotonin and SSRIs, substance P  
   Dr. Mátics Róbert

22 Psychosurgery, cingulotomy, hypothyroidism, hormonal effects  
   Dr. Mátics Róbert

23 mourning vs melancholia, learned helplessness, genetic components  
   Dr. Mátics Róbert

24 Summary, questions, discussion, feedback  
   Dr. Mátics Róbert

Practices
Seminars
Exam topics/questions  
No detailed questions are asked, rather a synthesis and deep understanding of the connections should be reached and given back.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants

Course director: Dr. Erika Mária Marek, assistant professor
Department of Operational Medicine • erika.marek@aok.pte.hu

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 1</th>
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<tr>
<td>Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours</td>
</tr>
<tr>
<td>Course headcount limitations (min.-max.): 1 – 20</td>
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<tr>
<td>Prerequisites: none</td>
</tr>
</tbody>
</table>

Topic

The homeless, the gypsy, the refugee and the sex-worker are knocking on heaven’s door...All middle-aged...Sounds like the beginning of a joke, but unfortunately this is NOT a joke! These vulnerable populations experience the lowest life expectancy at birth and the worst health status during their lifespan in comparison to majority populations. This course deals with the specific health concerns and needs of these four segregated populations, and discusses some „good practices” and initiatives aiming to improve their health and access to healthcare.

The courses will be held in blocks (including 4 Friday afternoons between appr. 12.00-18.00), and as each occasion will cover different vulnerable populations, please, make sure your availability for each dates before you apply!

All open-minded, socially sensitive and tolerant students are welcomed to this course and everybody who is interested in reducing inequalities in health and healthcare.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Written test based on the recommended literature and lectures at the last class.

Making up for missed classes

Upon agreement with the course director.

Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**


Lectures

1. Homelessness in the EU: causes of homelessness, typology, trends and data
   Dr. Rákosy Zsuzsa
2. Homelessness in the EU: causes of homelessness, typology, trends and data
   Dr. Rákosy Zsuzsa
3. Health of the homeless people: special health problems and their causes, relevance from the public health point of view
   Dr. Rákosy Zsuzsa
4. Health of the homeless people: special health problems and their causes, relevance from the public health point of view
   Dr. Rákosy Zsuzsa
5. Challenges of the homeless health care, special health services
   Dr. Rákosy Zsuzsa
6. Challenges of the homeless health care, special health services
   Dr. Rákosy Zsuzsa
7. How to bring about cross sectoral partnership in practice for Improvements of the homeless health: EU policies, initiatives and practices. Housing first model.
   Dr. Rákosy Zsuzsa
Roma in Hungary and worldwide: demography, mortality data, trends and subgroups  
Dr. Kiss Zsuzsanna

Health related knowledge and attitudes - where do they come from and how do they influence health  
Dr. Kiss Zsuzsanna

Health related knowledge and attitudes - where do they come from and how do they influence health  
Dr. Kiss Zsuzsanna

What factors are behind our decisions? Effects of tradition, belief, media  
Dr. Kiss Zsuzsanna

What factors are behind our decisions? Effects of tradition, belief, media  
Dr. Kiss Zsuzsanna

Role reversal - would you agree? Barriers, difficulties, positive or negative discrimination  
Dr. Kiss Zsuzsanna

Principals of migration-health, current trends of legal and irregular migration in Europe  
Dr. Szilárd István

Principals of migration-health, current trends of legal and irregular migration in Europe  
Dr. Szilárd István

Legal regulation and institutional background of health care for migrants and barriers of their access to health care provisions in EU health systems  
Dr. Marek Erika Mária

Legal regulation and institutional background of health care for migrants and barriers of their access to health care provisions in EU health systems  
Dr. Marek Erika Mária

Specific health concerns of legal and irregular migrants, with emphasis on refugees. The healthy migrant effect phenomenon.  
Dr. Marek Erika Mária

Specific health concerns of legal and irregular migrants, with emphasis on refugees. The healthy migrant effect phenomenon.  
Dr. Marek Erika Mária

International best practices and recommendations concerning medical screening, immunization, health care and health promotion for migrants  
Dr. Marek Erika Mária

Health needs and specific aspects of health care for female sex worker (FSW) populations  
Dr. Marek Erika Mária

Health needs and specific aspects of health care for female sex worker (FSW) populations  
Dr. Marek Erika Mária

Assessment, final test, consolidation  
Dr. Marek Erika Mária

Practices

Seminars

Exam topics/questions

Written test based on the recommended literature and lectures at the last class. - lecture materials will be available on the department website and in Neptun.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-THM-T  THERMOMANIA: THE MEDICINE OF THERMOREGULATION

Course director: Dr. ANDRÁS GARAMI, associate professor
Institute for Translational Medicine • andras.garami@aok.pte.hu

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

| Number of hours/semester: | 20 lectures + 0 practices + 0 seminars = total of 20 hours |
| Course headcount limitations (min.-max.): | 2 – 20 |
| Prerequisites: | none |

**Topic**

Maintenance of normal body temperature means life. Students applying for the course can learn the importance of temperature from the caveman till present days, they will get an insight into the mechanisms maintaining body temperature and into revolutionary theories of thermoregulation. They will hear how certain food ingredients (e.g., chili, menthol, etc.) influence body temperature, how thermoregulation differs between dinosaurs and humans and what are the subcellular heater units of our body. Based on the earned theoretical knowledge, students will then learn about extreme thermoregulatory disorders (e.g., hypothermia in high mountains, hibernation, etc.), furthermore, about the characteristics and peculiarities of the clinical appearance, diagnosis and therapy of thermoregulatory disorders in adult and childhood, in the form of clinical and pathophysiological case studies.

**Conditions for acceptance of the semester**

The absence rate is required to be kept under less than 25% of all lectures. At the end of the class students need to pass a multiple choice written test-exam.

**Mid-term exams**

Written exam

**Making up for missed classes**

Based upon individual agreements.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  
  
  A. Gomtsyan, C.R. Faltynek: Vanilloid Receptor TRPV1 in Drug Discovery, Wiley & Sons, 2010
  
  www.FeverLab.net
- **Notes**
- **Recommended literature**

**Lectures**

1. The importance of temperature from the caveman till present and beyond.
   Dr. Garami András
2. Proper techniques of temperature measurements: what should we pay attention to?
   Dr. Garami András
3. 37 degrees Celsius: mechanisms of body temperature maintenance.
   Dr. Garami András
4. Revolution in the field of thermoregulation.
   Dr. Garami András
5. The role of chili, menthol, wasabi, cinnamon and their receptors in temperature regulation.
   Dr. Garami András
   Dr. Garami András
7. Temperature maintenance from dinosaurs to humans: the evolution of thermoregulation.
   Dr. Hoffmann Gyula
8. Microscopic heating units of the body: heat production in the mitochondria.
   Dr. Hoffmann Gyula
9. Representative clinical cases of thermoregulatory disorders in adults I
   Dr. Ruzsics István
10. Representative clinical cases of thermoregulatory disorders in adults II
    Dr. Ruzsics István
11. Common clinical cases of fever in childhood I
    Dr. Józsa Gergő
12 Common clinical cases of fever in childhood II  
Dr. Józsa Gergő  

13 Peculiar clinical cases of temperature regulation disorders I  
Dr. Fehér Zsolt  

14 Peculiar clinical cases of temperature regulation disorders II  
Dr. Toldi János  

15 Clinical cases of fever in urology I  
Dr. Kenyeres Balázs  

16 Clinical cases of fever in urology II  
Dr. Kenyeres Balázs  

17 Hotheaded, coldblooded: brain-teasing pathophysiological case studies I  
Dr. Rumbus Zoltán  

18 Hotheaded, coldblooded: brain-teasing pathophysiological case studies II  
Dr. Rumbus Zoltán  

19 Hibernation, hypothermia.  
Dr. Garami András  

20 Written exam  
Dr. Garami András  

Practices  
Seminars  
Exam topics/questions  
Exam topics are the same as the topics of the lectures:  
1. The importance of temperature from the caveman till present and beyond.  
2. Proper techniques of temperature measurements: what should we pay attention to?  
3. 37 degrees Celsius: mechanisms of body temperature maintenance.  
4. Revolution in the field of thermoregulation.  
5. The role of chili, menthol, wasabi, cinnamon and their receptors in temperature regulation.  
7. Temperature maintenance from dinosaurs to humans: the evolution of thermoregulation.  
8. Microscopic heating units of the body: heat production in the mitochondria.  
9. Feeding, as a heat generator.  
10. Hypothermia in high mountains.  
11. Representative clinical cases of thermoregulatory disorders in adults I.  
12. Representative clinical cases of thermoregulatory disorders in adults II.  
13. Common clinical cases of fever in childhood I.  
14. Common clinical cases of fever in childhood II.  
15. Peculiar clinical cases of temperature regulation disorders I.  
16. Peculiar clinical cases of temperature regulation disorders II.  
17. Clinical cases of fever in urology I.  
18. Clinical cases of fever in urology II.  
20. Hotheaded, coldblooded: brain-teasing pathophysiological case studies II.  
23. Multiple choice test-exam.  
24. Multiple choice test-exam.  

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  
Participants
Some students are successful at the university. Some are not, however they were also successful at their earlier schools. What makes this difference? There can be many such reasons. One of the most important is for sure that most students are continuing their earlier learning practice; however the learning circumstances and the requirements were changed a lot. This leads to failure that causes increasing stress. This leads to more failure. The key point is to break this circle: Change your learning habit, develop your learning skills specific to university learning. The aim of this course is to help students in that in order to maximally benefit from their university experience. The result of this course will improve your performance in all other subjects at the university. The new skills and habits will benefit in your private life as well and support your career lifelong.

**Conditions for acceptance of the semester**

- Maximum 1 absence.
- **Mid-term exams**
  - All weekly home-works completed.
- **Making up for missed classes**
  - No extra class is available.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - Supporting materials supplied by the tutor of the classes.
- **Notes**
- **Recommended literature**

**Lectures**

1 Introduction. Changes in learning conditions and requirements. Personality differences.
   Dr. Pótó László
2 Lectures and practices. Taking notes - 1.
   Dr. Pótó László
3 Further note-taking methods.
   Dr. Pótó László
4 Reprocessing and using your notes.
   Dr. Pótó László
5 Reading techniques. Learning from textbooks.
   Dr. Pótó László
6 Reading techniques. Learning from textbooks.
   Dr. Pótó László
7 Time management basics for students.
   Dr. Pótó László
8 Time management basics for students.
   Dr. Pótó László
9 Time management -2.
   Dr. Pótó László
10 Personal and group techniques for studying.
   Dr. Pótó László
11 Tests and exams.
   Dr. Pótó László
12 Tests and exams.
   Dr. Pótó László
Practices
Seminars
Exam topics/questions
Submit all homework (weekly).

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
**Course director:** Dr. Ádám Feldmann, assistant professor  
Department of Behavioural Sciences • adam.feldmann@aok.pte.hu

<table>
<thead>
<tr>
<th>OAF-TRP-T</th>
<th>USE OF TRADITIONAL PSYCHOACTIVE SUBSTANCES: AN OVERVIEW FROM ANCIENT TO MODERN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DR. ÁDÁM FELDMANN, assistant professor</td>
</tr>
<tr>
<td></td>
<td>Department of Behavioural Sciences • <a href="mailto:adam.feldmann@aok.pte.hu">adam.feldmann@aok.pte.hu</a></td>
</tr>
</tbody>
</table>

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

**Number of hours/semester:** 0 lectures + 0 practices + 12 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 3 – 20  
**Prerequisites:** none

### Topic

The main objectives of this course is an introduction to traditional and modern drug-related behavior from cultural aspects. Many psychoactive herbs are available on the Internet with no cultural tradition in western civilization. Indeed, active ingredients are often unknown. Here, we attempt to summarize the potential health and psychological risks factors and potential therapeutic effects.

### Conditions for acceptance of the semester

Maximum of 25% absence allowed

### Mid-term exams

Exam: a short (2-3 pages) essay about a selected psychoactive plant/theme and related traditional and modern usage.

### Making up for missed classes

---

### Reading material

- **Obligatory literature**
  
  --

- **Literature developed by the Department**
  
  --

- **Notes**
  
  --

- **Recommended literature**
  
  --

### Lectures

### Practices

### Seminars

1. North America (Ephedra Sininca (Mormon tea), Pedicularis (Indian Warrior), Mexican Poppy, Peyote)
2. Central and South America (Calea Zacatechichi (Mexican dream herb), Heimia Salicifolia (Sinicuichi), Ayahuasca, Guarana, Mulungu, Peruvian Torch cactus, Salvia divinorum)
3. Africa (Scelletium Tortuosum (kanna), Silene Capensis (xhosa dream root), Leonotis Leonurus (wild dagga), Alepidea Amathimbica (imphemo), ubulawu (african ayahuasca tea)
4. Eurázia (Lactuca virosa (wild lettuce), Nymphaea Caerulea (Blue Lilly), Amanita Muscaria (fly agaric), Psilocibe species, Lagochilus Inebrians, (Turkestan Mint)
5. Australia and Oceania (Kava-kava root, Argyreia Nervosa seeds, kratom tree)
6. Aspects of traditional usage
7. Aspects of modern usage
8. Risk assessments
9. Rite or abuse?
10. Evolutional point of view
11. Internet world trends
12. Therapeutic aspects

### Exam topics/questions

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**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

### Participants

Dr. Feldmann Ádám (GLNQKN)
THE ROAD TO MOLECULAR MEDICINE

Course director: DR. JÓZSEF SZEBERÉNYI, professor
Department of Medical Biology and Central Electron Microscope Laboratory • jozsef.szeberenyi@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1

Number of hours/semester: 11 lectures + 0 practices + 0 seminars = total of 11 hours
Course headcount limitations (min.-max.): 5 – 100
Prerequisites: none

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1

Number of hours/semester: 11 lectures + 0 practices + 0 seminars = total of 11 hours
Course headcount limitations (min.-max.): 5 – 100
Prerequisites: none

Topic

Molecular Medicine is a field of science that studies the mechanisms of pathogenesis and new possibilities for the diagnosis and therapy of human diseases at the level of molecules (nucleic acids and proteins). This course is designed to discuss the discoveries in molecular cell biology most important for clinical medicine: it will present their scientific background, their impact on medicine, the new perspectives opened by them. The course is closely connected to the compulsory subject Molecular Cell Biology and to the elective course Molecular Medicine.

Conditions for acceptance of the semester

Maximum of 25% absence allowed

Mid-term exams

Final multiple-choice question-based exam, oral improvement retake.

Making up for missed classes

No possibilities.

Reading material

- Obligatory literature
  None.

- Literature developed by the Department
  The course consists of lectures of the board-and-chalk style. Taking notes is recommended.

- Notes
  None.

- Recommended literature
  Cooper: The Cell. A Molecular Approach

Lectures

1. Introduction: Cellular pathology and molecular medicine
   Dr. Szeberényi József

2. The story of DNA
   Dr. Szeberényi József

3. The story of recombinant DNA technology: Restriction endonucleases
   Dr. Szeberényi József

4. The story of recombinant DNA technology: Cloning of DNA fragments
   Dr. Szeberényi József

5. Gene targeting by homologous recombination
   Dr. Szeberényi József

6. Gene targeting by site-specific endonucleases
   Dr. Szeberényi József

7. Gene drive
   Dr. Szeberényi József

8. Genetically modified organisms
   Dr. Szeberényi József

9. GMO-food: the controversy
   Dr. Szeberényi József

10. Oligonucleotide therapy
    Dr. Szeberényi József

11. Test exam
    Dr. Szeberényi József
Practices
Seminars
Exam topics/questions
None

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject Participants
OAF-VB1-T  HOW TO TAKE THE EXAM IN MOLECULAR CELL BIOLOGY? 1
Course director:  DR. GERGELY BERTA, assistant professor
Department of Medical Biology and Central Electron Microscope Laboratory • gergely.bertha@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 1
Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 100
Prerequisites: OAA-MB1-T parallel

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: 3.

Mid-term exams
Trial exams on every class, minimally 2 times for each student in the whole semester.

Making up for missed classes
No possibility to make up for missed classes.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
  M. Pap (editor): Molecular Cell Biology Laboratory Manual
- Recommended literature

Lectures
Practices
Seminars
1 Trial exams
2 Trial exams
3 Trial exams
4 Trial exams
5 Trial exams
6 Trial exams
7 Trial exams
8 Trial exams
9 Trial exams
10 Trial exams
11 Trial exams
12 Trial exams

Exam topics/questions
See at: Molecular Cell Biology 1.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Balassa Timea (SWM7LV), Balogh Bálint (WDZ6OM), Bogdán Ágnes (NHORSU), Brandt Barbara (IQ1RP0), Csabai Timea Judith (F90OQR), Dr. Ábrahám Hajnalka Gabriella (WJUTX7), Dr. Bátor Judit (MPZG9D), Dr. Berta Gergely (Q6VP3K), Dr. Kemény Ágnes (WJHNZP), Dr. Pap Marianna (A9VB0A), Dr. Sétáló György (SXBEK5), Dr. Szeberényi József (DU7Y7C), Dr. Tarjányi Oktávia
(PA4PXG), Feketéné Dr. Kiss Katalin (RB5I50), Németh Mária (PGBGW5), Schipp Renáta (GPDYI3), Stayer-Harci Alexandra (ALWLKJ), Varga Judit (NZCIT4)
OAE-ABI-T  APPLIED BIOMETRICS

Course director: DR. KORNÉLIA FARKAS-BORBÁS, assistant professor
Institute of Bioanalysis  nell.farkas@aok.pte.hu

1 credit • midsemester grade • Elective subject • spring semester • recommended semester: 2

Number of hours/semester: 6 lectures + 6 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 1 – 12

Prerequisites: OAA-MET-T completed

Topic
Basics of biometrical methods are indispensable to understand the scientific results, to plan own research, and to evaluate data. The main goal of the course is to expand and deepened the basic knowledge of biometrics via solving practical problems.
Object of the course is to demonstrate different type of research with most frequently applied biometrical methods, though representative examples or with using of the data of the participants.

Conditions for acceptance of the semester
Problem solving, oral report

Mid-term exams
Short presentation(s) on the classes by the students

Making up for missed classes
Consultation

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Andrew F. Siegel: Statistics and Data Analysis. An introduction, John Wiley & Sons, 1988
Douglas G. Altman: Practical Statistics for Medical Research, Chapman & Hall, 1994
P. Armitage and G. Berry: Statistical Methods in Medical Research, Blackwell Science, 1994

Lectures
1  Introduction to research methodology, refresh the bio-statistical knowledge
   Dr. Pótó László
2  Variance analysis
   Borbásné Dr. Farkas Kornélia
3  Regression analysis
   Dr. Pótó László
4  Correlation analysis
   Borbásné Dr. Farkas Kornélia
5  Survival analysis
   Borbásné Dr. Farkas Kornélia
6  Factor analysis
   Borbásné Dr. Farkas Kornélia

Practices
1  Refresh the bio-statistical knowledge using the SPSS, exercises
2  Variance analysis, post-hoc tests
3  Linear and non-linear regression analysis
4  Parametric and non-parametric(rank-) correlation analysis
5  Survival analysis, Cox-regression analysis...
6  Factor analysis

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Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Borbásné Dr. Farkas Kornélia (IRWZKJ), Dr. Pótó László (FIO4UU)
OAE-ANA-T  MEDICAL ENGLISH 2/a - PRESENTATION TECHNIQUES

Course director: DR. GÁBOR RÉBÉK-NAGY, associate professor
Department of Languages for Specific Purposes • gabor.n.rebek@aok.pte.hu

2 credit • midterm grade • Elective subject • both semesters • recommended semester: 2
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 20
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 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.

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

Reading material
- Obligatory literature
  - Mark Powel: Presenting in English (How to Give Successful Presentations), 1996
  - Joan MacLean: Presenting at Medical Meetings, in-house hand-out
- Literature developed by the Department
  - In-house materials
- Notes
- Recommended literature

Lectures
1. The genre of biomedical conference presentation
   Dr. Rébék-Nagy Gábor
2. The discourse community of biomedical conference presentations
   Dr. Rébék-Nagy Gábor
3. The anatomy of biomedical conference presentations
   Dr. Rébék-Nagy Gábor
4. The macro and micro structure of biomedical conference presentations
   Dr. Rébék-Nagy Gábor
5. The three planes of communication in biomedical conference presentations
   Dr. Rébék-Nagy Gábor
6. The factual plane in biomedical conference presentations
   Dr. Rébék-Nagy Gábor
7. The textual plane of biomedical conference presentations
   Dr. Rébék-Nagy Gábor
8. The interpersonal plane in biomedical conference presentations
   Dr. Rébék-Nagy Gábor
9. Language tools in the factual plane of biomedical conference presentations
   Dr. Rébék-Nagy Gábor
10. Language tools in the textual plane of biomedical conference presentations
    Dr. Rébék-Nagy Gábor
11. Hedging in biomedical conference presentations 1.
    Dr. Rébék-Nagy Gábor
    Dr. Rébék-Nagy Gábor
13. Politeness in biomedical conference presentations 1.
    Dr. Rébék-Nagy Gábor
14 Politeness in biomedical conference presentations 2.
   Dr. Rébék-Nagy Gábor
15 Criteria for assessing biomedical conference presentations
   Dr. Rébék-Nagy Gábor
16 Criteria for assessing biomedical conference presentations in use
   Dr. Rébék-Nagy Gábor
17 Sample biomedical conference presentation 1
   Dr. Rébék-Nagy Gábor
18 Sample biomedical conference presentation 2.
   Dr. Rébék-Nagy Gábor
19 Sample biomedical conference presentation 3
   Dr. Rébék-Nagy Gábor
20 Sample biomedical conference presentation 4
   Dr. Rébék-Nagy Gábor
21 Sample biomedical conference presentation 5
   Dr. Rébék-Nagy Gábor
22 Sample biomedical conference presentation 6
   Dr. Rébék-Nagy Gábor
23 Course summary, evaluation of students’ essays
   Dr. Rébék-Nagy Gábor
24 Course summary, grades
   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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Rébék-Nagy Gábor (DGOZG1)
OAE-ANB-T  MEDICAL ENGLISH 2/B - TAKING MEDICAL CASE HISTORIES IN ENGLISH

Course director: Dr. Vilmos WARTA, associate professor
Department of Languages for Specific Purposes • vilmos.warta@aok.pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 2

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The course intends to prepare the participants for effective communication with English-speaking patients.

Conditions for acceptance of the semester

Participation in lectures 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.

Mid-term exams

1) one written test
2) one essay

Making up for missed classes

To be discussed with the course tutor in each individual case.

Reading material

- Obligatory literature
- Literature developed by the Department
  Lecture slides
- Notes
  M. Györffy: English for Doctors (Authentic Consulting Room Activities for Doctors, Dentists, Students and Nurses), Idióma Bt., Pécs, 2001
- Recommended literature

Lectures

1  Introduction into Medical History Taking
   Dr. Warta Vilmos
2  Introduction into Medical History Taking
   Dr. Warta Vilmos
3  Internal Medicine 1
   Dr. Warta Vilmos
4  Internal Medicine 1
   Dr. Warta Vilmos
5  Internal Medicine 2
   Dr. Warta Vilmos
6  Internal Medicine 2
   Dr. Warta Vilmos
7  Written Test
   Dr. Warta Vilmos
8  Written Test
   Dr. Warta Vilmos
9  Obstetrics and Gynaecology
   Dr. Warta Vilmos
10 Obstetrics and Gynaecology
    Dr. Warta Vilmos
11 Urology
   Dr. Warta Vilmos
12 Urology
   Dr. Warta Vilmos
| 13 | ENT   | Dr. Warta Vilmos |
| 14 | ENT   | Dr. Warta Vilmos |
| 15 | Dermatology | Dr. Warta Vilmos |
| 16 | Dermatology | Dr. Warta Vilmos |
| 17 | Symptoms-Examinations-Diagnosis-Treatment 1 | Dr. Warta Vilmos |
| 18 | Symptoms-Examinations-Diagnosis-Treatment 1 | Dr. Warta Vilmos |
| 19 | Symptoms-Examinations-Diagnosis-Treatment 2 | Dr. Warta Vilmos |
| 20 | Symptoms-Examinations-Diagnosis-Treatment 2 | Dr. Warta Vilmos |
| 21 | Symptoms-Examinations-Diagnosis-Treatment 3 | Dr. Warta Vilmos |
| 22 | Symptoms-Examinations-Diagnosis-Treatment 3 | Dr. Warta Vilmos |
| 23 | Evaluation | Dr. Warta Vilmos |
| 24 | Evaluation | Dr. Warta Vilmos |

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
OAE-BDR-T  Dissection Practices of Dorsal Regions

**Course director:**

DR. TIBOR HOLLÓSY, assistant professor
Department of Anatomy • tibor.hollosy@aok.pte.hu

1 credit • midterm grade • Elective subject • spring semester • recommended semester: 2

**Number of hours/semester:**

0 lectures + 12 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**

5 – 110

**Prerequisites:**

OAA-MB1-T completed + OAA-AA1-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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**

One dorsal region 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 80% of the practices.

**Mid-term exams**

The student have to talk to teacher.

**Making up for missed classes**

Individual study on the consecutive practices of the group.

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
  
  [http://an-server.pote.hu](http://an-server.pote.hu)

- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

1. Identification of borders of the region, cut the skin and removing of the fat.
2. Identifiction of borders of the region, cut the skin and removing of the fat.
3. Identifiction of borders of the region, cut the skin and removing of the fat.
4. Removing of the fascia and dissection of the superficial structures.
5. Removing of the fascia and dissection of the superficial structures.
6. Removing of the fascia and dissection of the superficial structures.
7. Dissection of the muscles, vessels and nerves under the fascia.
8. Dissection of the muscles, vessels and nerves under the fascia.
9. Dissection of the muscles, vessels and nerves under the fascia.
10. Dissection of the deep structures.
11. Dissection of the deep structures.
12. Dissection of the deep structures.

**Seminars**

**Exam topics/questions**

[http://an-server.pote.hu](http://an-server.pote.hu)

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Farkas József (TA5T02), Dr. Fülöp Balázs Dániel (HMEIOC), Dr. Hollósy Tibor (V4JMVX), Dr. Kovács László Ákos (HMPH37), Fábián Eszter (WLWIYB), Opper Balázs (Z84UV2)
# OAE-BO2-T Biophysics Seminars 2

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. ZOLTÁN UJFALUSI, assistant professor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Biophysics</td>
<td><a href="mailto:zoltan.ujfalusi@aok.pte.hu">zoltan.ujfalusi@aok.pte.hu</a></td>
</tr>
</tbody>
</table>

- **1 credit** • midsemester grade • Elective subject • spring semester • recommended semester: 2
- **Number of hours/semester:** 0 lectures + 0 practices + 12 seminars = total of 12 hours
- **Course headcount limitations (min.-max.):** 5 – 40
- **Prerequisites:** OAA-BI2-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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.

**Mid-term exams**

There will be no midterm exam.

**Making up for missed classes**

None. After previous agreement with the lecturer the student can attend the seminar with another group another day, the same week.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - Online materials on departmental website ([http://biofizika.aok.pte.hu](http://biofizika.aok.pte.hu))
- **Notes**
  - Damjanovich Sándor, Fidy Judit, Szöllősi János (eds.): Medical Biophysics, Medicina, Budapest, 2008
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

1. Diagnosztikai RTG, CT
2. A spektroszkópia alapjai (abszorpció)
3. Fluoreszcencia I-II
4. ESR, NMR, MRI
5. Infravörös és Raman spektroszkópia
6. Ultrahang
7. Gamma kamera, SPECT, PET
8. Fénymikroszkópia
9. Modern mikroszkópiai módszerek (TIRF, PALM-STORM, SIM stb.)
10. Áramlási citometria, szorter
11. Modern biofizikai módszerek
12. Számonkérés

**Exam topics/questions**

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

**Information** — The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Kengyel András Miklós (ENQAMZ), Dr. Lukács Andras Sziárd (LZ214Q), Dr. Szabó-Meleg Edina (10NKTU), Dr. Ujfalusi Zoltán (AZSO9Z), Szatmári Dávid (AIX2L6), Takács-Kollár Veronika Tünde (L5EB78), Telek Elek (B1YZ13)
OAE-BVK-T  CHEMISTRY OF BIOACTIVE ORGANIC COMPOUNDS

Course director: Dr. ATTILA AGÓCS, associate professor
Department of Biochemistry and Medical Chemistry • attila.agocs@aok.pte.hu

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

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 50
Prerequisites: OAA-ORK-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The course discusses the chemical and biological properties of the vitamins, oligo and polysaccharides and the most 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.

Mid-term exams

Making up for missed classes

None.

Reading material

- Obligatory literature
- Literature developed by the Department
  See the lectures of the course on this website
- Notes
- Recommended literature
  P. Gergely (ed.): Organic and Bioorganic Chemistry for Medical Students, Univ. Med. School of Debrecen, latest edition

Lectures

1  Antibiotics I.
   Dr. Agócs Attila
2  Antibiotics I.
   Dr. Agócs Attila
3  Antibiotics II.
   Dr. Agócs Attila
4  Antibiotics II.
   Dr. Agócs Attila
5  Antibiotics III.
   Dr. Agócs Attila
6  Antibiotics III.
   Dr. Agócs Attila
7  Antibiotics IV.
   Dr. Agócs Attila
8  Antibiotics IV.
   Dr. Agócs Attila
9  Antibiotics V.
   Dr. Agócs Attila
10 Antibiotics V.
    Dr. Agócs Attila
11 Fascinating molecules
   Dr. Nagy Veronika
Fascinating molecules
Dr. Nagy Veronika

Biologically important oligo- and polysaccharides I.
Dr. Nagy Veronika

Biologically important oligo- and polysaccharides II.
Dr. Nagy Veronika

Biologically important oligo- and polysaccharides II.
Dr. Nagy Veronika

Biologically important oligo- and polysaccharides II.
Dr. Nagy Veronika

Pigments- E numbers
Dr. Nagy Veronika

Pigments- E numbers
Dr. Nagy Veronika

Carotenoids
Dr. Nagy Veronika

Carotenoids
Dr. Nagy Veronika

Vitamins
Gulyás Gergely

Vitamins
Gulyás Gergely

Test paper
Dr. Agócs Attila

Test paper
Dr. Agócs Attila

Practices
Seminars
Exam topics/questions


Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-BVR-T  DISSECTION PRACTICES OF VENTRAL REGIONS**

**Course director:**

**Course description:**

- **1 credit** • **midsemester grade** • **Elective subject** • **spring semester** • **recommended semester:** 2

**Number of hours/semester:**

- 0 lectures + 12 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**

5 – 110

**Prerequisites:**

OAA-MB1-T completed + OAA-AA1-T parallel

**The subject can only be registered in case of a PASSED and valid health aptitude test!**

**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**

One venral region 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 80% of the practices.

**Mid-term exams**

The student have to talk to teacher.

**Making up for missed classes**

Individual study on the consecutive practices of the group.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - http://an-server.pote.hu
- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

1. Identification of borders of the region, cut the skin and removing of the fat.
2. Identification of borders of the region, cut the skin and removing of the fat.
3. Identification of borders of the region, cut the skin and removing of the fat.
4. Removing of the fascia and dissection of the superficial structures.
5. Removing of the fascia and dissection of the superficial structures.
6. Removing of the fascia and dissection of the superficial structures.
7. Dissection of the muscles, vessels and nerves under the fascia.
8. Dissection of the muscles, vessels and nerves under the fascia.
9. Dissection of the muscles, vessels and nerves under the fascia.
10. Dissection of the deep structures.
11. Dissection of the deep structures.
12. Dissection of the deep structures.

**Seminars**

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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Farkas József (TA5T02), Dr. Fülöp Balázs Dániel (HMEIOC), Dr. Hollósy Tibor (V4JMVX), Dr. Kovács László Ákos (HMPH37), Fábián Eszter (WLWIYB), Opper Balázs (Z84UV2)
**OAE-DRD-T  DRUG DESIGN**

**Course director:** Dr. Csaba Hetényi, associate professor  
Department of Pharmacology and Pharmacotherapy  
hetenyi.csaba@pte.hu

<table>
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<th>2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 2</th>
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<td><strong>Number of hours/semester:</strong> 24 lectures + 0 practices + 0 seminars = total of 24 hours</td>
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<tr>
<td><strong>Course headcount limitations (min.-max.):</strong> 1 – 300</td>
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<tr>
<td><strong>Prerequisites:</strong> none</td>
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</table>

**Topic**

The course offers an overview of the whole process of drug design between selection of the disease and marketing of the drug. The introductory lectures are followed by detailed reviews of certain phases of drug design including prediction of both drug action and pharmacokinetic properties. In this regard, theoretical and experimental methods of drug design will be also introduced. Case studies will demonstrate successful examples and also difficulties arising during the design process. Students with a researcher attitude are primary targets of this course. Besides them, the course provides useful knowledge for future medical doctors and pharmacists as it explains the complex process of drug discovery in a comprehensible way. This hopefully helps the students navigating in the jungle of laws of pharmacology also used in molecular design. Furthermore, the course deals with the problems of prediction of toxicity and side-effects, and discusses certain questions of production and legalization process of new drugs, as well. In Journal Club sessions, recent research articles will be featured with the students to deepen their knowledge in the areas discussed during the previous lectures. In this way, the students can discover further connections themselves and make sure of the usefulness of their newly obtained knowledge in drug design.

**Conditions for acceptance of the semester**

Jelenleg a választható és elektív kurzusok esetén a szabályzat nem tartalmaz részvételi követelményt. Amennyiben szükséges itt valamit megjelölnöm, akkor 25 %, de csak azért teszem, hogy kitölthető legyen az űrlap. Javasoltam a Tanulmányi Bizottság vezetőjénak a helyzet szabályzását és 50 % mértéket a hiányzásoknál.

**Mid-term exams**

There is a final test announced at the end of the semester. The test will include multiple choice questions and short essays. A mark is offered according to the results of the written test and optionally by evaluation of the student’s presentation prepared for the Journal Club. The student can improve the mark according to university regulations.

**Making up for missed classes**

Replacement is possible according to personal consultation.

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**

  The material of the course including pdfs of lectures and lists of questions will be made downloadable from the web site of the Department of Pharmacology and Pharmacotherapy or a link will be provided during the lectures / in an e-mail.

- **Notes**

- **Recommended literature**

  Patrick GL: An Introduction to Medicinal Chemistry, Oxford University Press

**Lectures**

   Dr. Hetényi Csaba
   Dr. Hetényi Csaba
3. Traditional design.  
   Dr. Hetényi Csaba
4. Target-based drug design.  
   Dr. Hetényi Csaba
5. Target selection and validation.  
   Dr. Hetényi Csaba
   Dr. Hetényi Csaba
7. Protein targets 2. Enzymes and receptors.  
   Dr. Hetényi Csaba
8. Experimental structure determination methods.  
   Dr. Hetényi Csaba
   Dr. Hetényi Csaba
Lipids and nucleic acids as targets.
Dr. Hetényi Csaba

Dr. Hetényi Csaba

Journal club 2. X-ray crystallography and NMR. Cryo-electronmicroscopy.
Dr. Hetényi Csaba

Experimental methods of lead selection and design.
Dr. Hetényi Csaba

Molecular complexes of leads. Thermodynamic and kinetic stability.
Dr. Hetényi Csaba

Theoretical methods of lead selection and design.
Dr. Hetényi Csaba

Lead optimizations, transformations.
Dr. Hetényi Csaba

ADMETox optimization 1. Goals, general description.
Dr. Hetényi Csaba

Dr. Hetényi Csaba

Termination of design. Production and development.
Dr. Hetényi Csaba

Side-effects and postmarketing surveillance.
Dr. Hetényi Csaba

Case study 1. The design of antiviral drugs.
Dr. Hetényi Csaba

Case study 2. The design of anti-cancer drugs.
Dr. Hetényi Csaba

Dr. Hetényi Csaba

Dr. Hetényi Csaba

Practices

Seminars

Exam topics/questions

Lists of questions will be provided at the end of each lecture specifying the required knowledge.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-ELH-T  Obesity - The "Epidemic" of the Modern Age**

Course director: DR. DÉNES MOLNÁR, professor
Department of Paediatrics • molnar.denes@pte.hu

1 credit • midsemester grade • Elective subject • spring semester • recommended semester: 2

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 5 – 30

Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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.

**Mid-term exams**

Making up for missed classes

Making up for missed classes according to personal discussion.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

http://ebook.ecog-obesity.eu

**Lectures**

1. Introduction, course outline, aims of the course. The significance of obesity. References to Public Health
   Dr. Molnár Dénes
2. Physiological and pathophysiological background: Factors influencing the regulation of body weight
   Dr. Balaskó Márta
3. Physiological and pathophysiological background: Factors influencing the regulation of body weight
   Dr. Balaskó Márta
4. Endocrine and genetic causes of obesity
   Dr. Erhardt Éva
5. Complications of obesity (cardiovascular complications, insulin resistance, non-alcoholic fatty liver disease)
   Dr. Erhardt Éva
6. The effects of globalisation on lifestyle and health. Health promotion
   Dr. Molnár Dénes
7. Types and the importance of prevention, methods of prevention
   Dr. Molnár Dénes
8. Sleep and obesity: links and relevance to clinical care
   Dr. Molnár Dénes
9. Treatment of obesity
   Dr. Erhardt Éva
10. Nutritional approaches to obesity
    Dr. Erhardt Éva
11. Role of physical activity, inactivity
    Dr. Molnár Dénes
12. Writing the test
    Dr. Molnár Dénes
Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Dr. Balaskó Márta (KVU1V2), Dr. Erhardt Éva (GRJ7QG), Dr. Molnár Dénes (NG8F2N)
OAE-EMA-T

**BASIC PRINCIPLES OF ELECTRON MICROSCOPY IN CLINICAL PRACTICE AND BIOLOGICAL RESEARCH**

**Course director:**

DR. HAJNALKA GABRIELLA ÁBRAHÁM, associate professor  
Department of Medical Biology and Central Electron Microscope Laboratory  
hajnalka.abraham@aok.pte.hu; hajnalka.abraham@yahoo.com

2 credit • midterm grade • Elective subject • spring semester • recommended semester: 2

**Number of hours/semester:** 24 lectures + 0 practices + 0 seminars = total of 24 hours  
**Course headcount limitations (min.-max.):** 5 – 25  
**Prerequisites:** OAA-MB1-T 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 classes. Oral examination with analysis of 3 electron microscopic photographs

**Mid-term exams**

No possibility

**Making up for missed classes**

No possibility

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  
  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.  
   Dr. Ábrahám Hajnalka Gabriella
2. Most frequent failures in the electronmicroscopic practice  
   Dr. Seress László Antal
3. Optimal fixation for electron microscopy. Composition of fixatives for different tissue samples.  
   Dr. Seress László Antal
   Dr. Seress László Antal
5. The ultrastructure of the cell I  
   Dr. Seress László Antal
6. The ultrastructure of the cell II  
   Dr. Seress László Antal
7. The ultrastructure of the cell III  
   Dr. Seress László Antal
8. The ultrastructure of the cell IV  
   Dr. Seress László Antal
9. The ultrastructure of the cell V  
   Dr. Ábrahám Hajnalka Gabriella
10. The ultrastructure of the cells VI. Test.  
    Dr. Ábrahám Hajnalka Gabriella
Ultrastructures of neurons (axon, dendrite, synapses)  
Dr. Seress László Antal

Ultrastructure of glial cells  
Dr. Seress László Antal

The ultrastructure of kidney  
Dr. Ábrahám Hajnalka Gabriella

The ultrastructure of the liver  
Dr. Ábrahám Hajnalka Gabriella

Ultrastructure of the muscle.  
Dr. Ábrahám Hajnalka Gabriella

Necrosis and apoptosis.  
Dr. Ábrahám Hajnalka Gabriella

Combined light and electron microscopic methods, such as Golgi/EM, Timm/EM, immunocytochemistry/EM.  
Dr. Seress László Antal

Combination of degeneration and axon transport methods with electron microscopy.  
Dr. Seress László Antal

Ultrastructure of bacteria and viruses.  
Dr. Ábrahám Hajnalka Gabriella

Cytoskeleton  
Dr. Seress László Antal

Intercellular connections  
Dr. Seress László Antal

The use of EM in biological research I  
Dr. Seress László Antal

The use of EM in biological research II  
Dr. Seress László Antal

Exam  
Dr. Seress László Antal

Practices

Seminars

Exam topics/questions

Exam topics are the same as lecture topics

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

**OAE-EUA-T**  **BASIC PRINCIPLES OF HEALTH CARE PROVISION IN THE EUROPEAN UNION**

**Course director:**  **DR. ISTVÁN SZILÁRD,** honorary professor

Department of Operational Medicine • istvan.szilard@aok.pte.hu

| 2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 2 |
| Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours |
| Course headcount limitations (min.-max.): 1 – 20 |
| Prerequisites: none |

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Hungary, as any other members of the Schengen treaty is challenged by new tasks, requiring harmonized measures and special actions on the field of human resource capacity building for the health care system. Regarding to this we are launching a new training program focusing on three main fields:

- Health care provision and management within the frame of the European Union;
- Needs for and conditions of trans-border healthcare in the EU;
- Health/ public health and mental health aspects of the assistance of most vulnerable groups like ethnic minorities and migrants.

With these objectives the course contributes to understand the main conditions and aspects of the health care provision within the EU, including such important issues as the cross-border health care and cross-border mobility of patients, and quality health assistance in a multiethnic, multicultural community.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

Making up for missed classes

Based on individual consultation with the lecturer.

**Reading material**

- **Obligatory literature**
  - Literature developed by the Department

- **Notes**

- **Recommended literature**

**Lectures**

1. Introduction to the European Union: structure of governing bodies; health and health care related policy, legislation. Introduction of DG SANCO and ECDC
   - Dr. Szilárd István

2. Introduction to the European Union: structure of governing bodies; health and health care related policy, legislation. Introduction of DG SANCO and ECDC
   - Dr. Szilárd István

3. Migrant- and ethnic minority-friendly health care system
   - Dr. Marek Erika Mária

4. Migrant- and ethnic minority-friendly health care system
   - Dr. Marek Erika Mária

5. Migration health related health challenges of the European Union, morbidity and mortality structure
   - Dr. Katz Zoltán

6. Migration health related health challenges of the European Union, morbidity and mortality structure
   - Dr. Katz Zoltán

7. Primary health care (PHC) in the European Union. Trends and epidemiology of chronic, non communicable diseases in the Member States of the European Union
   - Dr. Szilárd István
Primary health care (PHC) in the European Union. Trends and epidemiology of chronic, non communicable diseases in the Member States of the European Union
Dr. Szilárd István

Cross-border egészségügyi ellátás. Human rights aspects of providing healthcare
Dr. Marek Erika Mária

Cross-border egészségügyi ellátás. Human rights aspects of providing healthcare
Dr. Marek Erika Mária

Health care in multicultural environment
Dr. Baráth Árpád

Health care in multicultural environment
Dr. Baráth Árpád

Special and current challenges of health care and assistance related to ethnic minorities
Dr. Szilárd István

Special and current challenges of health care and assistance related to ethnic minorities
Dr. Szilárd István

Emerging and re-emerging infectious diseases; rare and tropical diseases in the European Union
Dr. Feiszt Zsófia

Emerging and re-emerging infectious diseases; rare and tropical diseases in the European Union
Dr. Feiszt Zsófia

European Union regulations related to drugs, medicines and vaccination
Dr. Katz Zoltán

European Union regulations related to drugs, medicines and vaccination
Dr. Katz Zoltán

The way and conditions of developing, organizing, operating and financing health care in the European Union
Dr. Goolesorkhi Kia

The way and conditions of developing, organizing, operating and financing health care in the European Union
Dr. Goolesorkhi Kia

The relation between health care and the economy: occupational health; mobility of workforce and health workforce
Dr. Berényi Károly

The relation between health care and the economy: occupational health; mobility of workforce and health workforce
Dr. Berényi Károly

Félévzárás, írásbeli vizsga
Dr. Marek Erika Mária

Félévzárás, írásbeli vizsga
Dr. Marek Erika Mária

Practices
Seminars
Exam topics/questions

The exam will be based on the lectures and the recommended readings.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-H2A-T  MEDICAL HUNGARIAN 2A - COMMUNICATION SKILLS**

**Course director:** DR. VILMOS WARTA, associate professor  
Department of Languages for Specific Purposes • vilmos.warta@aok.pte.hu

<table>
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<tr>
<th>Course details</th>
<th>2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 2</th>
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<tr>
<td>Number of hours/semester:</td>
<td>0 lectures + 0 practices + 24 seminars = total of 24 hours</td>
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<tr>
<td>Course headcount limitations (min.-max.):</td>
<td>2 – 25</td>
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<tr>
<td>Prerequisites:</td>
<td>OAE-H1A-T completed + OAE-H2B-T parallel</td>
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**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**

Maximum of 25% absence allowed

**Mid-term exams**

Making up for missed classes

In the case of absences up to 25% of total class time, oral examination will have to be taken.

**Reading material**

- **Obligatory literature**
  
  Anamnézis magyarul (Magyar orvosi szaknyelv kezdőknek) by Renáta Halász, 2015. Pécs

- **Literature developed by the Department**


- **Notes**


- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

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. Medication and effects
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. Test 2.
Exam topics/questions


Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SYYRAV), Eklicsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kürdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CIZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
OAE-H2B-T  MEDICAL HUNGARIAN 2B - LANGUAGE POINTS

Course director: DR. VILMOS WARTA, associate professor
Department of Languages for Specific Purposes • vilmos.warta@aok.pte.hu

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

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: OAE-H1B-T completed + OAE-H2A-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Making up for missed classes
To be discussed with the course tutor.

Reading material
- Obligatory literature
  Anamnézis magyarul (Magyar orvosi szaknyelv kezdőknek) by Renáta Halász, 2015. Pécs
- Literature developed by the Department
  http://aok.pte.hu/index.php?page=egyseg&egy_id=60&nyelv=eng&menu=okt_anyag
- Notes
- Recommended literature

Lectures

Practices

Seminars
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. Test 2.
Exam topics/questions


Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedüs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SJYRAV), Eklicsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CIZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
The course introduces the issues concerning humanitarian assistance and the inevitable social and health consequences of such intervention. It examines humanitarian assistance in the framework of international relations, discovers its health, public health, legal and economic aspects and investigates the wider context of international cooperation in development. The course offers an opportunity to understand the practical implementation of humanitarian assistance as well. The current trends and scenes of humanitarian assistance are illustrated by short case-studies in every particular topic.

1. Humanitarian Assistance and International Development Cooperation
2. The Basic Roles of Health Care and Humanitarian Assistance
3. Migration and Humanitarian Assistance
4. Health and Public Health Issues of Host Countries Involved in Mass Migration
5. Healthcare at the Hungarian Refugee Stations, Protected Quarters
6. The Nature of Health Care Concerning Migrants and Multicultural Environment
7. Health Aspects of Humanitarian Tasks Carried Out amongst Ethnic Minorities
8. Occupational Education, Monitoring, Training and if Necessary Rehabilitation of the Humanitarian Caregivers
10. The Participants of the Process of Humanitarian Assistance
11. Civil Society Organizations in Humanitarian Assistance
12. Health Care Challenges in Humanitarian Crises
13. Case Study: the Experience Gathered by HBAid in Humanitarian Crises
14. Social Assistance among Homeless People and Drug Addicts

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

irásbeli teszt

Making up for missed classes

Based on independent consultation.

Reading material

- **Obligatory literature**
- **Literature developed by the Department**
  - Cahill, Kevin M. (ed.): Human Security for All. A Tribute to Sergio Vieira de Mello, Fordham University Press and The Center for International Health and Cooperation, New York

- **Notes**
- **Recommended literature**

**Lectures**

1. The Basic Roles of Health Care in Humanitarian Assistance
   Dr. Szilárd István
2. The Basic Roles of Health Care in Humanitarian Assistance
   Dr. Szilárd István
3  Healthcare at the Migrants Reception and Detention Centres in Hungary. Occupational Health Education, Monitoring, Training of Caregivers  
   Dr. Marek Erika Mária

4  Healthcare at the Migrants Reception and Detention Centres in Hungary. Occupational Health Education, Monitoring, Training of Caregivers  
   Dr. Marek Erika Mária

5  Migration and Humanitarian Assistance. Humanitarian Assistance and International Cooperation  
   Dr. Szilárd István

6  Migration and Humanitarian Assistance. Humanitarian Assistance and International Cooperation  
   Dr. Szilárd István

7  Humanitarian and Human Rights Aspects of Trafficking in Human Beings.  
   Dr. Szilárd István

8  Humanitarian and Human Rights Aspects of Trafficking in Human Beings.  
   Dr. Szilárd István

9  Humanitarian Assistance in the Light of International Law, International Politics and International Political Economy  
   Dr. Szilárd István

10 Humanitarian Assistance in the Light of International Law, International Politics and International Political Economy  
   Dr. Szilárd István

11 Health and Public Health Issues of Host Countries Involved in Mass Migration  
   Dr. Katz Zoltán

12 Health and Public Health Issues of Host Countries Involved in Mass Migration  
   Dr. Katz Zoltán

13 The Nature of Health Care Provision among Migrants and in Multicultural Environment  
   Dr. Baráth Árpád

14 The Nature of Health Care Provision among Migrants and in Multicultural Environment  
   Dr. Baráth Árpád

15 Health Aspects of Humanitarian Tasks Carried Out amongst Ethnic Minorities  
   Dr. Szilárd István

16 Health Aspects of Humanitarian Tasks Carried Out amongst Ethnic Minorities  
   Dr. Szilárd István

17 The Participants of the Process of Humanitarian Assistance. Civil Organizations /NGOs in Humanitarian Assistance  
   Dr. Szilárd István

18 The Participants of the Process of Humanitarian Assistance. Civil Organizations /NGOs in Humanitarian Assistance  
   Dr. Szilárd István

19 Health Care Challenges in Humanitarian Crises  
   Dr. Szilárd István

20 Health Care Challenges in Humanitarian Crises  
   Dr. Szilárd István

21 Case Study: the Experience Gathered by HBAid in Humanitarian Crises  
   Dr. Szilárd István

22 Case Study: the Experience Gathered by HBAid in Humanitarian Crises  
   Dr. Szilárd István

23 Félevezárás, írásbeli vizsga  
   Dr. Marek Erika Mária

24 Félevezárás, írásbeli vizsga  
   Dr. Marek Erika Mária

**Practices**

**Seminars**

**Exam topics/questions**

The exam will be based on the recommended readings and the lectures.

**Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject**

**Participants**
OAE-MOM-T  MOLECULAR MEDICINE

Course director:  DR. JÓZSEF SZEBERÉNYI, professor
Department of Medical Biology and Central Electron Microscope Laboratory  • jozsef.szeberenyi@aok.pte.hu

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 2
Number of hours/semester:  24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.):  5 – 200  Prerequisites:  none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Mid-term exams
None.

Making up for missed classes
None.

Reading material
- Obligatory literature
  None.
- Literature developed by the Department
  None.
- Notes
  None.
- Recommended literature
  Gelehrter-Collins: Principles of Medical Genetics
  Cooper-Mausman: The Cell. A Molecular Approach

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  Human genome project
   Dr. Szeberényi József
6  Human genome project
   Dr. Szeberényi József
7  Mosaicism
   Dr. Kosztolányi György
8  Mosaicism
   Dr. Kosztolányi György
9  Diseases of protein folding
   Dr. Szeberényi József
10 Diseases of protein folding  
   Dr. Szeberényi József  
11 The RNA-world  
   Dr. Szeberényi József  
12 The RNA-world  
   Dr. Szeberényi József  
13 Non-Mendelian monogenic inheritance  
   Dr. Kosztolányi György  
14 Non-Mendelian monogenic inheritance  
   Dr. Kosztolányi György  
15 Intracellular antibodies  
   Dr. Szeberényi József  
16 Intracellular antibodies  
   Dr. Szeberényi József  
17 Cloning  
   Dr. Szeberényi József  
18 Cloning  
   Dr. Szeberényi József  
19 Molecular cytogenetics  
   Dr. Kosztolányi György  
20 Molecular cytogenetics  
   Dr. Kosztolányi György  
21 Genetics and environment; epigenetics  
   Dr. Kosztolányi György  
22 Genetics and environment; epigenetics  
   Dr. Kosztolányi György  
23 Final test  
   Dr. Szeberényi József  
24 Final test  
   Dr. Szeberényi József  

**Practices**

**Seminars**

1 DNA fingerprinting  
2 Gentotype-fenotype; fenotype-genotype  
3 Human genome project  
4 Mosaicism  
5 Diseases of protein folding  
6 The RNA-world  
7 Non-Mendelian monogenic inheritance  
8 Intracellular antibodies  
9 Cloning  
10 Molecular cytogenetics  
11 Genetics and environment; epigenetics  
12 Final test  

**Exam topics/questions**

None.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
OAE-MS2-T  EXPERIMENTS IN MOLECULAR CELL BIOLOGY 2

Course director: DR. JÓZSEF SZEBERÉNYI, professor
Department of Medical Biology and Central Electron Microscope Laboratory • jozsef.szeberenyi@aok.pte.hu

2 credit • midterm grade • Elective subject • spring semester • recommended semester: 2

Number of hours/semester: 12 lectures + 0 practices + 12 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 40
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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.

Mid-term exams
None.

Making up for missed classes
None.

Reading material
- Obligatory literature
  None.
- Literature developed by the Department
  Educational materials on the homepage of the Department of Medical Biology:
  Problem-solving tests in molecular cell biology
  Figure analysis in molecular cell biology
- Notes
  None.
- Recommended literature
  Cooper-Hausman: The Cell. A Molecular Approach
  Szeberényi J.: Experiments in Molecular Cell Biology

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

Practices

Seminars
1 Methods to study vesicular transport  
2 Methods to study the cytoskeleton  
3 Methods of study the cell membrane and the extracellular matrix  
4 Methods of study receptor proteins  
5 Methods of study G-protein-mediated signaling  
6 Methods of study growth factor and cytokine signaling  
7 Test  
8 Methods of study oncogenic viruses  
9 Methods of study cellular oncogenes  
10 Methods of study tumor suppressor genes  
11 Methods of molecular medicine  
12 Final test

Exam topics/questions

Multiple-choice test.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Bátor Judit (MPZG9D), Dr. Pap Marianna (A9VB0A), Dr. Szeberényi József (DU7Y7C), Feketéné Dr. Kiss Katalin (RB5I50), Schipp Renáta (GPDY13), Varga Judit (NZCIT4)
**OAE-ORE-T   MEDICAL REHABILITATION IN DAILY PRACTICE**

**Course director:**

Dr. Gézáné Sarlós (Dr. Cecilia Varjú), associate professor
Department of Rheumatology and Immunology • varju.cecilia@pte.hu

1 credit • midsemester grade • Elective subject • spring semester • recommended semester: 2

**Number of hours/semester:**

6 lectures + 6 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 5 – 70

**Prerequisites:** none

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Are you interested in what is happening with Michael Schumacher? How could be managed a child or an adult patient living in wheelchair or patient with visual impairment, or deaf? How could be their life better? This course focuses on practical knowledge in medical rehabilitation, the different problems and possibilities of patients with disabilities.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

20-question test on the last session of the course

**Making up for missed classes**

As agreed with the course director.

**Reading material**

- **Obligatory literature**
  

- Literature developed by the Department
  

- **Notes**

  Physical Medicine and Rehabilitation Secrets, Mosby Elservier, Philadelphia USA, 2012

- **Recommended literature**

  Physical Medicine and Rehabilitation Secrets, Mosby Elservier, Philadelphia USA, 2012

**Lectures**

1. Basic philosophy of rehabilitation (definition, legal background, the ICF-concept of disability, epidemiology of disability).
   Special features of medical rehabilitation (multi-disciplinarity, functional approach. Dr. Varjú Cecilia
   Dr. Sarlós Gézáné (Dr. Varjú Cecilia)

2. Rehabilitation goals, preparing plans (evaluation of physical loadability, importance of the constructed and the societal environment. Living with a wheel-chair). Demonstration: rehabilitation post severe spinal cord injury. Dr. Cserháti Péter
   Dr. Cserháti Péter

   Dr. Kovács Noémi
   Dr. Kovács Noémi

4. Rehabilitation of patients with post cerebral injury
   Visit to the Department of Neurorehabilitation Dr. Péley Iván
   Dr. Vajdáné Dr. Tasnádi Emese

   Dr. Aszmann Mária

   Csizmadiané Dr. Nusser Nóra

**Practices**

1. Interventions in rehabilitation I. (physico-physiotherapy, sport therapy, hydrotherapy, occupational therapy, accessible environment, prevention of immobilization).
   Dr. Varjú Cecilia
2 Demonstration: rehabilitation of patients with dysmyelia and post amputation.
  Dr. Varjú Cecília
3 Societal approach and acceptance of disability. Basic conception of social, educational and vocational rehabilitation. Post-stroke rehabilitation in daily practice. Physical, cognitive and other therapies used in stroke rehabilitation
  Dr. Tasnádi Emese, Dr. Kovács Noémi
4 3. Demonstration: rehabilitation of patients with addiction.
  Kárpáti Tamás
5 Physiology of early rehabilitation of patients with acute cardiologic diseases, in peri-operative conditions. Demonstration: rehabilitation of patients with cardiologic diseases.
  Dr. Nyárfás Géza
6 Special points in rehabilitation for elderly patients.
  Dr. Birkás Gyöngyvér

Seminars

Exam topics/questions
1. Problems of patients with living in wheel chairs
2. Psychosocial development and rehabilitation of patients with visual impairment, or deaf
3. Different types of the physical therapy. Home nursing aids
4. Rehabilitation post severe brain injury and stroke
5. Rehabilitation of children with cerebral paresis
6. Cardiac rehabilitation programs after a heart attack
7. The practice of treating addictions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Cserháti Péter (QY9KVB), Dr. Kovács Noémi (HTVM87), Dr. Nyárfás Géza (JKOCCH), Dr. Sarlós Gézáné (Dr. Varjú Cecilia) (XB98L5), Dr. Vajdáné Dr. Tasnádi Emese (ZL4SME)
OAE-TAR-T  NUTRITION AND CANCER

Course director:  DR. ISTVÁN ZOLTÁN KISS, professor  
Department of Public Health Medicine  istvan.kiss@aok.pte.hu

2 credit • midterm grade • elective subject • spring semester • recommended semester: 2

Number of hours/semester:  22 lectures + 2 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.):  5 – 30  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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
Participation in lectures is obligatory which is registered. Absences should not exceed 15% of lectures (4x45 min). Otherwise signature of grade book is denied.

Mid-term exams
Making up for missed classes
There are no make-up classes.

Reading material
- Obligatory literature
- Literature developed by the Department
  Educational material uploaded on Neptun.
- Notes
- Recommended literature

Lectures
1  The multistep model of carcinogenesis.  
   Dr. Kiss István Zoltán
2  Possibilities for cancer prevention.  
   Dr. Kiss István Zoltán
3  The role of energy intake in carcinogenesis.  
   Dr. Kiss István Zoltán
4  The role of protein, carbohydrate intake in carcinogenesis.  
   Dr. Kiss István Zoltán
5  The role of fat intake in carcinogenesis I.  
   Dr. Kiss István Zoltán
6  The role of fat intake in carcinogenesis II.  
   Dr. Kiss István Zoltán
7  Compounds of plant origin and their role in carcinogenesis I.  
   Dr. Kiss István Zoltán
8  Compounds of plant origin and their role in carcinogenesis II.  
   Dr. Kiss István Zoltán
9  Compounds of plant origin and their role in carcinogenesis III.  
   Dr. Kiss István Zoltán
10 Compounds of plant origin and their role in carcinogenesis IV.  
   Dr. Kiss István Zoltán
11 Food pollutants and food additives I.  
   Dr. Gyöngyi Zoltán
12 Food pollutants and food additives II.  
   Dr. Gyöngyi Zoltán
Nutrigenomics. Epigenetics and cancer.
Bérczi Bálint Dániel

The role of alcohol in carcinogenesis I., II.
Bérczi Bálint Dániel

Anticarcinogenic compounds in foods I.
Dr. Kiss István Zoltán

Anticarcinogenic compounds in foods II.
Dr. Kiss István Zoltán

The role of kitchen technology in the formation of cancers. I.
Dr. Gyöngyi Zoltán

The role of kitchen technology in the formation of cancers. II.
Dr. Gyöngyi Zoltán

The relationship between nutrition and cancers I.
Dr. Gyöngyi Zoltán

The relationship between nutrition and cancers II.
Dr. Gyöngyi Zoltán

The role of micro-nutrients in cancer formation.
Dr. Gyöngyi Zoltán

Drinking water and cancers.
Dr. Gyöngyi Zoltán

Practices
1 Dietary recommendations I.
2 Dietary recommendations II.

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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Kiss István Zoltán (EFZCGE)
OAF-ABK-T  BASICS OF BIOCHEMISTRY

Course director:  DR. KATALIN BÖDDI, assistant professor
Department of Biochemistry and Medical Chemistry  katalin.boddi@aok.pte.hu

2 credit  •  midsemester grade  •  Optional subject  •  spring semester  •  recommended semester: 2

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 4 – 60  Prerequisites: none

Topic

In this subject a helping hand is given to the better understanding of biochemical reactions. Based on the student feedbacks this course is formed to ensure the opportunity for the discussion of the problematic areas of the biochemistry and the relevant organic chemistry parts in smaller groups (max 20 students in a group) with a teacher. In these seminars structural characteristics of small molecules participating in the essential metabolic processes are discussed together with their typical reactions. It gives a deeper view into the fundamentals of structure-typical reaction relationships. The subject covers the basic biochemical pathways, discussed in the second semester’s subject: Introduction to Biochemistry.

On this course questions can be asked for which there was not enough time to discuss in the frame of the obligate course. The teachers work together with the students. Life and exam relevant test questions are going to be answered, and the correct and incorrect answers are going to be clarified.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

The semester ends with a written exam on the 12th week. The material and the possible contents of the exam are discussed with the teacher well in advance. During the semester there are no tests and presentations.

Making up for missed classes

There is no possibility.

Reading material

- Obligatory literature
  David L. Nelson, Michael M. Cox: Lehninger Principles of biochemistry

- Literature developed by the Department
  Introduction to Biochemistry- manual to the laboratory practise

- Notes
  Introduction to Biochemistry- manual to the laboratory practise

- Recommended literature
  Introduction to Biochemistry- manual to the laboratory practise

Lectures
Practices
Seminars
1  Biomolecules and their typical reactions
2  Biomolecules and their typical reactions
3  Nucleotides and coenzymes
4  Nucleotides and coenzymes
5  Peptide bond, proteins, bioenergetics
6  Peptide bond, proteins, bioenergetics
7  Enzymes
8  Enzymes
9  Lipids of cell membranes and energy storage
10 Lipids of cell membranes and energy storage
11 Fundamental reactions in biochemistry
12 Fundamental reactions in biochemistry
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**Exam topics/questions**


**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject.

**Participants**

Dr. Böddi Katalin (PJDP60), Dr. Nagy Veronika (N5QYN3), Dr. Takátsy Anikó (NGZ91M)
Data Collection Techniques - Survey and Interview Methods

Course director: Dr. JÁNOS GÍRÁN, assistant professor
Department of Public Health Medicine • janos.giran@gmail.com

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 2

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 20
Prerequisites: none

Topic
Data collection is an essential component both of the university studies and working as preventive or curative practitioner. This course provides the opportunity for development of knowledge and skills in formulating a data collection plan, selecting appropriate data collection methods, developing a survey, and conducting interviews and observations.

Conditions for acceptance of the semester
Maximum of 15% absence allowed

Mid-term exams

Making up for missed classes
There are no make-up classes

Reading material
- Obligatory literature
- Literature developed by the Department
  Neptun
- Notes
- Recommended literature
  de Leeuw, E.D., Hox, J.J. Dillman, A. D. (ed) International Handbook of Survey Methodology

Lectures
1. Identifying the research problem and developing a hypothesis, context and operationalization
   Dr. Girán János
2. Identification of research strategy and data collection method
   Dr. Girán János
3. Design of questionnaire I. type of questions and levels of measurement
   Dr. Girán János
4. Design of questionnaire II. structure and coherence of the questions and the questionnaire, preparation for coding
   Dr. Girán János
5. Type of survey methods: face-to-face interview, self-directed questionnaire, phone interview, online questionnaire
   Dr. Girán János
6. Sampling techniques
   Dr. Girán János
7. Standardised questions and questionnaires; types of interviews - structured interview, semi-structured interview, life history interview
   Dr. Girán János
8. Method of focus group
   Dr. Girán János
9. Method of observations
   Dr. Girán János
10. Method of sociometry
    Dr. Girán János
11. Data analysis and interpretation of results
    Dr. Girán János
12. Summary
    Dr. Girán János
Practices
Seminars
Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-ATS-T  HEALTH EFFECTS OF ALTERNATIVE DIETARY HABITS**

**Course director:**

**DR. TIMEA VARJAS**, assistant professor

Department of Public Health Medicine • vtimi_68@yahoo.com

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

**Number of hours/semester:**

- 12 lectures • 0 practices • 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**

- 4 – 30

**Prerequisites:** none

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**Topic**

The aim of the course is to widen the knowledge of the medical, pharmacy and dental students about the effects of alternative diet forms on health status. This will include an assessment by a professional certified nutritionist. Outlining the advantages and disadvantages of the diets (on both health and financial levels) are also part of the course.

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**Conditions for acceptance of the semester**

Absences should not exceed 15% of lectures and practicals (2x45 min). Otherwise signature of grade book is denied.

**Examination:** written test

**Mid-term exams**

Examination: written test

**Making up for missed classes**

Based on individual consideration

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**Reading material**

- Obligatory literature
- Literature developed by the Department
  - PPT-presentations (Neptun)
- Notes
- Recommended literature

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**Lectures**

1. The vegetarian diet - lacto, ovo, lacto-ovo vegetarian nutrition
   - Dr. Varjas Timea
2. The vegetarian diet - strict vegan, pesco, pollo vegetarian nutrition
   - Dr. Varjas Timea
3. Vegan diet - Fruitarianism, raw food diet
   - Dr. Varjas Timea
4. Vegan diet - Macrobiotic diet
   - Dr. Varjas Timea
5. Separation diets - Diamond’s fit-for-life diet
   - Dr. Varjas Timea
6. Separation diets - Hay’s alkalizing, acidifying diet
   - Dr. Varjas Timea
7. Fashion diets - Bruker’s diet
   - Dr. Varjas Timea
8. Fashion diets - Steiner’s diet
   - Dr. Varjas Timea
9. Atkins diet
   - Dr. Varjas Timea
10. A Paleolithic diet
    - Dr. Varjas Timea
11. Mediterranean diet
    - Dr. Varjas Timea
12. Importance of organic foods in the diet
    - Dr. Varjas Timea
Practices
Seminars
Exam topics/questions
Neptun
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
MINERAL AND SPA WATERS, BALNEOLOGY

Course director: DR. CSABA VARGA, professor
Department of Public Health Medicine • chemsafety@freemail.hu

2 credit • midterm grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 40
Prerequisites: none

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
Maximum of 15% absence allowed

Mid-term exams
Making up for missed classes

Reading material
- Obligatory literature
- Literature developed by the Department
  Neptun
- Notes
- Recommended literature

Lectures
1 Hydrogeology and balneology of mineral and spa waters
  Márovics Gergely Péter
2 Hydrogeology of Hungarian mineral and spa waters
  Márovics Gergely Péter
3 Correlation of the geological characteristics and the chemical composition
  Bérczi Bálint Dániel
4 Hydrology of mineral and spa waters
  Bérczi Bálint Dániel
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. Presence of microelements
  Dr. Varga Csaba
8 Inorganic ions, substances an complexes in the therapeutical effect
  Dr. Varga Csaba
9 Organic ions, substances and complexes in the therapeutical
  Dr. Varga Csaba
10 In situ water analysis. Inorganic analysis
  Dr. Varga Csaba
11 Hygienic microbiological analysis
  Dr. Varga Csaba
12 Artificial mineral and medicinal waters
  Dr. Varga Csaba
13 Peloids: genesis, chemical/physical/toxicological properties. Hungarian peloids.
  Dr. Varga Csaba
14 Mineral and spa water products
  Dr. Varga Csaba
15 Introduction to Balneology: objectives and history
  Dr. Varga Csaba

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16 Water and ions in the human body  
Dr. Varga Csaba

17 External cure with spa waters, mode of action  
Dr. Varga Csaba

18 Mechanic, thermal, chemical and psychic actions, Spa reaction  
Dr. Varga Csaba

19 Water types in cure  
Dr. Varga Csaba

20 Application of spa waters to different diseases  
Dr. Varga Csaba

21 Therapeutic applications of peloids  
Dr. Varga Csaba

22 Internal use of mineral and medicinal waters, Drinking cure  
Dr. Varga Csaba

23 Inhalation cure.  
Dr. Varga Csaba

24 Other natural cures: climate cure, physiotherapy, additional therapies  
Dr. Varga Csaba

Practices

Seminars

Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-BET-T  HEALTH SCIENCE OF WINE**

**Course director:**

**DR. ISTVÁN ZOLTÁN KISS, professor**

Department of Public Health Medicine  •  istvan.kiss@aok.pte.hu

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

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 5 – 30  
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Ensuring healthy drinking water was always an important question in the history of mankind. This typically means the fight against water-born infectious diseases. Concerning these efforts people found the secret of wine making. During the Middle Ages Hungary became a wine consuming and wine producing country. After the World War II the wine consuming habits took a wrong direction, with an increase in the consumption of spirits and beer. However, recently hundreds of publications demonstrated the beneficial effects of moderate wine consumption, in the prevention of several diseases, e.g. cardiovascular diseases and cancer. The probable major cause of the so called French paradox, is also the consumption of red wine. This course tries to give a summary from the viewpoint of public health, physiology, toxicology, epidemiology and nutrition.

The students will be familiar with the health risks and benefits of wine consumption, they will be able to critically evaluate nutrition (and drinking) related facts and data.

**Conditions for acceptance of the semester**

Participation in lectures is obligatory which is registered. Absences should not exceed 15% of lectures (2x45 min).

**Mid-term exams**

A simple choice test has to be done on the last lecture.

**Making up for missed classes**

There are no make-up classes.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  
  Educational material uploaded on Neptun.
- **Notes**
- **Recommended literature**

**Lectures**

1. Preventive substances in red wine  
   Dr. Kiss István Zoltán

2. The impact of red wine on ageing  
   Dr. Kiss István Zoltán

3. Epidemiological data on the association between health status and red wine consumption  
   Bérczi Bálint Dániel

4. The story of the french-paradox. The effects of red wine consumption on serum-lipid values and atherosclerosis.  
   Bérczi Bálint Dániel

5. Health risks associated with alcohol consumption. Toxicology and the affected neurotransmitter-systems.  
   Bérczi Bálint Dániel

6. The phases of acute alcohol intoxication and the development of addiction. Alcohol-related chronic diseases, withdrawal symptoms.  
   Bérczi Bálint Dániel

7. Role of red wine in the prevention of diseases  
   Bérczi Bálint Dániel

   Bérczi Bálint Dániel

9. The overall effect of red wine consumption on health.  
   Bérczi Bálint Dániel

10. The impact of the total red wine polyphenol content on health.  
    Bérczi Bálint Dániel
11 The effect of trans-resveratrol on health.
   Bérczi Bálint Dániel
12 Winemaking and wine culture.
   Bérczi Bálint Dániel

**Practices**

**Seminars**

**Exam topics/questions**

**Neptun**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Kiss István Zoltán (EFZCGE)
INTRODUCTION TO GENETIC ENGINEERING

Course director: Dr. Zoltán Sándor, senior research fellow
Department of Pharmacology and Pharmacotherapy • zoltan.sandor@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 0 practices + 22 seminars = total of 22 hours
Course headcount limitations (min.-max.): 1 – 20
Prerequisites: none

Topic
The aim of these seminars is to introduce genetic engineering techniques to medical students.

Conditions for acceptance of the semester
None

Mid-term exams
None

Making up for missed classes
None

Reading material
- Obligatory literature
  None
- Literature developed by the Department
  Power point slides
- Notes
  None
- Recommended literature
  None

Lectures
Practices
Seminars
1 Structure and function of nucleic acids
2 Modified and artificial nucleic acids
3 Oligonucleotide and gene synthesis
4 Gel electrophoresis and sequencing
5 Polymerases
6 Polymerase chain reaction
7 Enzymes to manipulate nucleic acids I.
8 Enzymes to manipulate nucleic acids II.
9 cDNA cloning, basic cloning vectors
10 Expression vectors
11 Transformation, transfection
12 Viral vectors, transposone systems
13 Transgenic and knockout animals
14 Lox-P system, conditional KO animals
15 RNA interference, knockdown techniques
16 Artificial nucleases, genome engineering
17 Optogenetics
18 Artificial evolution techniques
19 Gene therapy
20 Genetic engineering in drug discovery
21 Project evaluation I
22 Project evaluation II
Exam topics/questions
None

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Sándor Zoltán (CKRT5U)
OAF-BME-T  CERTIFICATE IN BIO MEDICAL ENTREPRENEURSHIP

Course director: Dr. Attila Gábor SIK, senior research fellow
Institute of Transdisciplinary Discoveries - Director of Innovation, Institute of Physiology • sik.attila@pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

Number of hours/semester: 18 lectures + 0 practices + 6 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 30  Prerequisites: none

Topic
This course is building on the „Introduction to Entrepreneurship (Certificate in Entrepreneurship Program)” (code: B12CMG07E) organized by the Business School. Although it is not an essential requirement for this course to complete the Introduction course, but it is recommended.
The course focuses on a specific segment of the market: life and medical science fields. Numerous guest speakers, many successfully running a company in the biomedical field, from Hungary, Germany, Holland, Italy and UK will share their experience and wisdom. The course provides a unique combination of academic knowledge (frameworks, analytical methods etc) and practical advices from practitioners. Many guest speakers are CEO or funding member of a successful Biomedical spin off company. Because of the multinational nature of the course, several lectures/seminars will be delivered by video conference.

Conditions for acceptance of the semester
Maximum of 15% absence allowed

Mid-term exams
Assignments, discussion, group work, presentations, short essays

Making up for missed classes
Assignments, essays

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  James Jordan: Innovation, Commercialization, and Start-Ups in Life Sciences
  Michel Marcolongo: Academic Entrepreneurship: How to Bring Your Scientific Discovery to a Successful Commercial Product

Lectures
1  Introduction to Biomedical Entrepreneurship
   Dr. Sik Attila Gábor
3  Solve an important customer problem
   Dr. Sik Attila Gábor
5  Intellectual Property management (Speaker: Dr Noemi Liber)
   Dr. Liber Noémi
7  Challenges and Opportunities at the University for students
   Dr. Sik Attila Gábor
8  3D innovation in biomedical research. A very fresh story from Pecs (Guest Speaker: Drs Peter Maroti/Peter Varga)
   Dr. Sik Attila Gábor
9  Photonics meet biology: Biophotonics innovation (Guest speaker from ArtPhotonics GmBH, Germany)
   Dr. Sik Attila Gábor
10 Combining biology and chemistry for glucose monitoring: Spin off in The Netherlands (Guest speaker from Glucoset Ltd)
   Dr. Sik Attila Gábor
11 Biomedical Entrepreneurship in practice: A success story from Hungary, Part II (Guest speaker from Femtonics Ltd, Budapest, Hungary)
   Dr. Sik Attila Gábor
12 The Italian connection: Entrepreneurship in the Italian Biomedical field, Part I (Guest speaker from TechniPlast Ltd. Italy)
   Dr. Sik Attila Gábor
13 Development of a unique software tool for early Parkinson’s disease detection (Guest Speaker from Clavicont Ltd, Hungary)
   Dr. Sik Attila Gábor
14 3D human tissue printing: how to set up a successful spin off at the Univ Pecs Part I
   Dr. Pongrácz Judit Erzsébet
16 How is it done in Germany? A Biotech success story (Guest speaker from Acquifer GmBh)
   Dr. Sik Attila Gábor
17 Pitch like a Pro
   Dr. Szentpéteri József László
19 Biomedical innovation at the University of Pecs (Guest speaker from the Knowledge Transfer Office of Univ Pecs)
   Dr. Sik Attila Gábor
20 Biotech spin off in the UK Part I (Guest Speaker: Prof Nick Barnes, Celentyx Ltd, UK)
   Dr. Sik Attila Gábor
22 The life of a venture capitalist: a practical view (Guest speaker from Singulab)
   Dr. Sik Attila Gábor
23 The life of a venture capitalist: a practical view (Guest speaker from Highventures)
   Dr. Sik Attila Gábor
24 Biotech spin off in the UK (Guest Speaker: Prof Ann Logan, Neurogenix Ltd, UK)
   Dr. Sik Attila Gábor

Practices

Seminars

2 Analyse your Science!
   Dr. Sik Attila Gábor
4 Gather pros to reduce risk
   Dr. Sik Attila Gábor
6 Business Planning 101: a brief introduction how to write a business plan
   Dr. Sik Attila Gábor
15 3D human tissue printing: how to set up a successful spin off at the Univ Pecs Part II
   Dr. Pongrácz Judit Erzsébet
18 Pitch like a Pro
   Dr. Szentpéteri József László
21 Financing your Biotech business: theory
   Dr. Sik Attila Gábor

Exam topics/questions

NA

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
### OAF-EEK-T HEALTH AND PHYSICAL ENVIRONMENT

**Course director:** DR. TIMEA VARJAS, assistant professor  
Department of Public Health Medicine • vtini_68@yahoo.com

<table>
<thead>
<tr>
<th>Credit</th>
<th>Midsemester grade</th>
<th>Optional subject</th>
<th>Spring semester</th>
<th>Recommended semester</th>
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**Number of hours/semester:**  
24 lectures + 0 practices + 0 seminars = total of 24 hours

**Course headcount limitations (min.-max.):**  
1 – 20

**Prerequisites:** none

### Topic

The course will provide an overview of the relation of men and some selected natural or built environments and their connection concerning health. Highlighted topics: human factor and ergonomics, work environment, urbanisation, physical risk factors, climate, illumination, electric smog, noise pollution.

### Conditions for acceptance of the semester

Maximum of 25% absence allowed

### Mid-term exams

Test at the end of the course.

### Making up for missed classes

Based on individual consideration.

### Reading material

- **Obligatory literature**
  - Literature developed by the Department
    - All necessary materials will be provided during the course.

- **Notes**

- **Recommended literature**

### Lectures

1. **Introduction - Man and the physical environment**  
   Dr. Szabó István
2. **Urbanisation**  
   Dr. Szabó István
3. **The effect of urban environment on health**  
   Dr. Szabó István
4. **Ergonomics - Human factors**  
   Dr. Szabó István
5. **Ergonomics - Human factors**  
   Dr. Szabó István
6. **Product ergonomy - Digital ergonomy**  
   Dr. Szabó István
7. **Built environment and the disabled**  
   Dr. Szabó István
8. **Light and vision - illumination**  
   Dr. Szabó István
9. **Light and vision - illumination**  
   Dr. Szabó István
10. **Air pollution**  
    Dr. Szabó István
11. **Indoor air pollution**  
    Dr. Szabó István
12. **Nanoparticles**  
    Dr. Szabó István
13. **Dust, fibres, metal vapors**  
    Dr. Szabó István
14. **Introduction to electromagnetic fields**  
    Dr. Szabó István
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<tr>
<th></th>
<th>Subject</th>
<th>Instructor</th>
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<td>15</td>
<td>Electromog</td>
<td>Dr. Szabó István</td>
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<td>Solar radiation and UV</td>
<td>Dr. Szabó István</td>
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<td>X-ray and gamma-radiation</td>
<td>Dr. Szabó István</td>
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<td>RF electromagnetic fields</td>
<td>Dr. Szabó István</td>
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<td>Static and ELF fields</td>
<td>Dr. Szabó István</td>
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<td>20</td>
<td>Ionizing radiation</td>
<td>Dr. Szabó István</td>
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<td>21</td>
<td>Ionizing radiation - Internally deposited isotopes</td>
<td>Dr. Szabó István</td>
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<td>22</td>
<td>Heat as a risk factor</td>
<td>Dr. Szabó István</td>
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<td>23</td>
<td>Mechanical vibration - sound</td>
<td>Dr. Szabó István</td>
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<td>24</td>
<td>Biometeorology</td>
<td>Dr. Szabó István</td>
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**Practices**

**Seminars**

**Exam topics/questions**

Will be provided during the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
Use of the EPR Spectroscopy on Biological Structures

Course director: DR. KORNÉLIA FARKAS-BORBÁS, assistant professor
Institute of Bioanalysis • nell.farkas@aok.pte.hu

1 credit • midterm grade • optional subject • both semesters • recommended semester: 2

Number of hours/semester: 6 lectures + 6 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 1 – 6

Prerequisites: OAA-BI1-T completed

Topic

The aim of the course is to learn the usual techniques in EPR spectroscopy on different samples, and evaluation of the results obtained. The electron paramagnetic resonance spectroscopy is a method similar to NMR, but deals with the properties of electron spin resonance. The technique provides data on the molecular structure and dynamics of various, e.g. biological systems.

The investigation of paramagnetic materials, like free radicals, metals, and special spin-labels help to describe biological systems, e.g. membranes, proteins.

Conditions for acceptance of the semester

Oral exam
Mid-term exams
Making up for missed classes
Consultation

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
1. The basics of EPR Spectroscopy
   Dr. Dergez Timea
2. The basic features of EPR Spectrometer
   Dr. Dergez Timea
3. Spin labels and labeling methods
   Dr. Dergez Timea
4. Free radicals - spin trapping
   Dr. Dergez Timea
5. Membrane structures and their labeling
   Borbásné Dr. Farkas Kornélia
6. Other biological structures and their labeling
   Borbásné Dr. Farkas Kornélia

Practices
1. Way of registration, registration and analyze of an EPR spectra
4. Labeling and measuring of other biological structures 1.
5. Labeling and measuring of other biological structures 2.
6. Spin trapping

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Borbásné Dr. Farkas Kornélia (IRWZKJ), Dr. Dergez Timea (HPZ74N)
**OAF-FBT-T  HISTORY OF INFECTIOUS DISEASES**

**Course director:**

**DR. ISTVÁN ZOLTÁN KISS, professor**

Department of Public Health Medicine • istvan.kiss@aok.pte.hu

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

**Number of hours/semester:** 12 lectures + 0 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 1 – 30

**Prerequisites:** none

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**Topic**

Epidemics of infectious diseases have always played a role in human history. The students can get an inside view of those infectious diseases, which play an important role in our days. In spite of global efforts to decrease their mortality rates, some of these ancient diseases are still the deadliest in the world. Nowadays the threats of a bioterrorism attack is a real fear of mankind, because the technology to produce and use dangerous biological agents is potentially available. The effective fight against these attacks and infectious diseases means a significant challenge in the public health. Finally, in this course meet some of the people who developed the tools to identify microorganisms, the preventive measures and the vaccinations to prevent them, and the drugs to treat them.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

**Making up for missed classes**

Participation in lectures is obligatory which is registered.

Absences should not exceed 15% (2x45 min). Otherwise signature of grade book is denied.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  
  Educational material uploaded on Neptun.
- **Notes**
- **Recommended literature**

**Lectures**

1. Tropical illnesses 1. (Malaria)
   Dr. Németh Katalin
2. Tropical illnesses 2. (Yellow Fever)
   Dr. Németh Katalin
3. Tropical illnesses 3. ( Asiatic cholera)
   Dr. Németh Katalin
4. Influenza
   Dr. Németh Katalin
5. HIV/AIDS
   Dr. Németh Katalin
6. Emerging and re-emerging infectious diseases
   Dr. Németh Katalin
7. Epidemics and Wars I.
   Dr. Németh Katalin
8. Bioterrorism
   Dr. Németh Katalin
9. Discovery of Vaccination
   Dr. Németh Katalin
10. Discovery of Antibiotics
    Dr. Németh Katalin
11. Gallery of portraits (Famous Scientists and their Discoveries)
    Dr. Németh Katalin
12. Infectious diseases - past, present and future
    Dr. Németh Katalin
Practices
Seminars
Exam topics/questions
Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Németh Katalin (R7XSZN)
Towards Thorough Understanding of Infectious Disease

Course director: DR. TIMIA VARJAS, assistant professor
Department of Public Health Medicine • vtini_68@yahoo.com

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

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

Course headcount limitations (min.-max.): 4 – 20

Prerequisites: OAA-SF1-T parallel

Topic

Lectures are going to be held in the form of interactive and discussion type. Lectures will address the specific objectives of each topic and try to clarify and demonstrate important concepts related to infectious diseases that are caused by organisms living inside the human body. The main pathogens that will be covered are Bacteria, Viruses, Fungi, and protists. The course entails description of the microorganism, typical sites of infection, description of the morphological effects produced by the disease by studying both the pathological specimens and the histological sections. Description of the effects of the disease on the function of organs, and knowledge regarding the outcome and possible complications of the disease will also be discussed. Hence, this course will serve to bridge pathology and public health.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Test on the neptun

Making up for missed classes

Based on individual consideration

Reading material

- Obligatory literature
- Literature developed by the Department
  Handouts of all lectures will be available in neptun
- Notes
- Recommended literature

Lectures

1. Introduction
   Kanaan Reem
2. Bacterial infections Pseudomembranous colitis - Pathological specimens and Histological picture
   Kanaan Reem
3. Bacterial infections Clostridium difficile - Pathological specimens and Histological picture
   Kanaan Reem
4. Student’s presentations and Kahoot educational game
   Kanaan Reem
5. Bacterial infections Actinomyces organisms - Pathological specimens and Histological picture
   Kanaan Reem
6. Student’s presentations and Kahoot educational game
   Kanaan Reem
7. Necrosis
   Kanaan Reem
8. Student’s presentations and Kahoot educational game
   Kanaan Reem
9. Mycobacterial infections pulmonary tuberculosis
   Kanaan Reem
10. Student’s presentations and Kahoot educational game
    Kanaan Reem
11. Syphilis, due to the spiral-shaped spirochaete Treponema pallidum
    Kanaan Reem
12. Student’s presentations and Kahoot educational game
    Kanaan Reem
13. Viral infections Viral infections Human immunodeficiency virus (HIV)
    Kanaan Reem
14 Student’s presentations and Kahoot educational game  
Kanaan Reem
15 Viral infections Herpes simplex virus 1 and 2 (HSV-1 and HSV-2),  
Kanaan Reem
16 Student’s presentations and Kahoot educational game  
Kanaan Reem
17 Syncytia  
Kanaan Reem
18 Student’s presentations and Kahoot educational game  
Kanaan Reem
19 Fungal infections Candidiasis,  
Kanaan Reem
20 Student’s presentations and Kahoot educational game  
Kanaan Reem
21 Protozoa and helminthes,  
Kanaan Reem
22 Student’s presentations and Kahoot educational game  
Kanaan Reem
23 Trichomonas vaginalis  
Kanaan Reem
24 Student’s presentations and Kahoot educational game  
Kanaan Reem

Practices

Seminars

Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-GFO-T  EPIGENETICS - NON-GENETIC INHERITANCE AND ITS MEDICAL ASPECTS

Course director: Dr. ISTVÁN ZOLTÁN KISS, professor

Department of Public Health Medicine • istvan.kiss@aok.pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 2

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

Course headcount limitations (min.-max.): 1 – 30  Prerequisites: none

Topic

Contribution of environmentally induced molecular signals to disease development is an interesting and actual question of molecular epidemiology. Epigenetics can significantly contribute to this area by studying the effect of environmental factors on gene regulation causing phenotypically inherited changes. It can present a novel approach in the characterization of the connection between exposure, genes and disease development. The course tries to familiarize the students with the theoretical background and research directions of epigenetics, including the most recent clinical and preventive aspects.

Conditions for acceptance of the semester

Absences should not exceed 25% (4x45 min).

Mid-term exams

A simple choice test has to be done on the last lecture.

Making up for missed classes

There are no make-up classes.

Reading material

- Obligatory literature
- Literature developed by the Department
  Educational material will be uploaded on Neptun.
- Notes
- Recommended literature

Trygve Tollefsbol (ed.): Handbook of Epigenetics - The New Molecular and Medical Genetics, ACADEMIC PRESS, ISBN: 978-0-12-375709-8


Lectures

1  The concept, history and theoretical background of epigenetics. Twin studies (The EpiTwin Project).
   Bérczi Bálint Dániel
2  Are the environmental effects heritable (nutrition, physical activity and stress)? The question of "epigenetic responsibility".
   Bérczi Bálint Dániel
3  Mechanism of DNA-methylation. Link between the external world and individual.
   Bérczi Bálint Dániel
4  Human Epigenom Project.
   Bérczi Bálint Dániel
5  Mechanism of histone modifications and chromatin organisation.
   Bérczi Bálint Dániel
6  How does the epigenom inherit?
   Bérczi Bálint Dániel
7  Relation between diet and epigenetics. Folate and DNA methylation: Epigenetic and intrauterin effects of maternal nutrition.
   Bérczi Bálint Dániel
8  Nutriepigenetics. Impacts on the metabolic syndrome.
   Bérczi Bálint Dániel
9  The role of epigenetics in obesity, impacts on the Offspring.
   Bérczi Bálint Dániel
10 Epigenomic-Wide Association Studies (EWAS) in Human Obesity.
    Bérczi Bálint Dániel
11 Epigenetics in the development of cardiovascular diseases.
    Bérczi Bálint Dániel
Impacts on the vascular functions.
Bérczi Bálint Dániel

The role of epigenetics in cancer diagnostics and therapy.
Bérczi Bálint Dániel

Dietary factors, epigenetics and cancer.
Bérczi Bálint Dániel

Epigenetic aspects of allergy and human infectious diseases.
Bérczi Bálint Dániel

Relation between lifelong pattern of epigenetics, disease-risk and ageing.
Bérczi Bálint Dániel

Regulatory non-coding RNAs (siRNAs, microRNAs, piRNAs). Therapeutical application of exogenous siRNAs and the possible side-effects.
Bérczi Bálint Dániel

The microRNA regulation - therapy or prevention? The link between RNA-interference and epigenetics.
Bérczi Bálint Dániel

Clinical aspects of epigenetics.
Bérczi Bálint Dániel

Preventive aspects of epigenetics.
Bérczi Bálint Dániel

Research methods in epigenetics (MethyLight).
Bérczi Bálint Dániel

Investigating the epigenome. Methylation DNA (MeDIP) and chromatin immunoprecipitation (ChIP) technique. DNA editing with RNAs (CRISPR systems).
Bérczi Bálint Dániel

What holds the future for us?
Dr. Kiss István Zoltán

The future perspectives of personalized medicine. Involvement of epigenetics.
Bérczi Bálint Dániel
OAF-HEV-T  MEDICAL ASPECTS OF HUMAN EVOLUTION

Course director: DR. LÁSZLÓ MÁRK, associate professor
Department of Biochemistry and Medical Chemistry • laszlo.mark@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 22 lectures + 0 practices + 0 seminars = total of 22 hours
Course headcount limitations (min.-max.): 2 – 20  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The course shows the evolutionary aspects of the human anatomy and thinking. The students will learn about evolutionary aspects of the human walk, the development of the human senses, hand and mind. Furthermore, we going see the development of the human social network and culture embedded in human evolution.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed
Mid-term exams
Not possible.
Making up for missed classes
Not possible.

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture slides.
- Notes
- Recommended literature
  Smith FH. & Spencer F. (eds.): The Origin of Modern Humans, Alan R. Liss, New York 1984

Lectures
1  Introduction. The history of human evolutionary research.
   Dr. Márk László
2  Introduction. The history of human evolutionary research.
   Dr. Márk László
3  Evolution of primates and hominidae (Prosimii alrend, Dryopithecus, Ramapithecus, Australopithecusok, Kenyathropus etc.)
   Dr. Márk László
4  Evolution of primates and hominidae (Prosimii alrend, Dryopithecus, Ramapithecus, Australopithecusok, Kenyathropus etc.)
   Dr. Márk László
5  Evolution and properties of Rudapithecus hungaricus.
   Dr. Márk László
6  Evolution and properties of Rudapithecus hungaricus.
   Dr. Márk László
7  Evolution of the Homo genus.
   Dr. Márk László
8  Evolution of the Homo genus.
   Dr. Márk László
9  Archaic Homo sapiens and H. neandertalensis.
   Dr. Márk László
10 Archaic Homo sapiens and H. neandertalensis.
    Dr. Márk László
11 Bipedalism. The evolution of human walk.
   Dr. Márk László
12  Bipedalism. The evolution of human walk.
    Dr. Márk László
    Dr. Márk László
    Dr. Márk László
15  Evolution of human senses.
    Dr. Márk László
16  Evolution of human senses.
    Dr. Márk László
17  Evolution of the human mind.
    Dr. Márk László
18  Evolution of the human mind.
    Dr. Márk László
19  Evolutionary aspects of the social network and the human culture.
    Dr. Márk László
20  Effects of neolitization and urbanization to the human development.
    Dr. Márk László
21  Anatomy and modern civilization.
    Dr. Márk László
22  Anatomy and modern civilization.
    Dr. Márk László

Practices

Seminars

Exam topics/questions

The history of human evolutionary research.
Evolution of primates and hominidae (Prosimii alrend, Dryopithecus, Ramapithecus, Australopithecusok, Kenyathropus etc.)
Evolution and properties of Rudapithecus hungaricus.
Evolution of the Homo genus.
Archaic Homo sapiens and H. neandertalensis.
Bipedalism. The evolution of human walk.
„Homo habilis“. Evolution of human hand.
Evolution of human senses.
Evolution of the human mind.
Evolutionary aspects of the social network and the human culture.
Effects of neolitization and urbanization to the human development.
Anatomy and modern civilization.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-HF2-T  HUNGARIAN FOR FOREIGNERS 2

Course director: D.R. K.ATALIN PELCZ, language teacher
International Studies Center • pelcz.katalin@pte.hu

2 credit • midterm grade • Optional subject • both semesters • recommended semester: 2
Number of hours/semester: 0 lectures + 0 practices + 48 seminars = total of 48 hours
Course headcount limitations (min.-max.): 4 – 50  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The course is offered for all the interested participants who would like to learn Hungarian as a foreign language.
The Hungarian for Foreigners 2. 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
Maximum of 15 % absence allowed
Mid-term exams
The course ends with an oral and written exam. You can take part in the exam, with a min. 85% attendance rate.
Making up for missed classes
Medical certificate is accepted.
Reading material
- Obligatory literature
  Szita Szilvia - Pelcz Katalin: MagyarOK 1.
  www.magyar-ok.hu
- Literature developed by the Department
  Szita Szilvia - Pelcz Katalin: MagyarOK 1.
  www.magyar-ok.hu
- Notes
- Recommended literature
 Lectures
 Practices
 Seminars
1  Helyek és helyzetek
2  Helyek és helyzetek
3  Helyek és helyzetek
4  Helyek és helyzetek
5  Mit csinálász, ha van egy kis időd?
6  Mit csinálász, ha van egy kis időd?
7  Mit csinálász, ha van egy kis időd?
8  Mit csinálász, ha van egy kis időd?
9  Időpont-egyeztetés
10  Időpont-egyeztetés
11  Időpont-egyeztetés
12  Időpont-egyeztetés
13  Hobbi és szabadidő
14  Hobbi és szabadidő
15  Hobbi és szabadidő
16  Hobbi és szabadidő
17  Hurrá, nyaralunk!
18  Hurrá, nyaralunk!
19  Hurrá, nyaralunk!
20  Hurrá, nyaralunk!
Exam topics/questions

Helyek és helyzetek
Mit csinális, ha van egy kis időd?
Időpont-egyeztetés
Hobby és szabadidő
Hurrá, nyaralunk!
Egy átlagos munkanap
Mit csinálunk a munkahelyen? Egy magyar egyetemista Japánban
Nyelvtanulás
A mi családunk
Családi ünnepek: születésnap
Helyiségek a házban
Bútorok és használati tárgyak
Otthoni tevékenységek, házimunka

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pelcz Katalin (HBH91N)
## OAF-HGI-T

**HEALTHCARE FOR MIGRANTS AND ETHNIC MINORITIES IN THE EU: HEALTH-GEOGRAPHICAL AND INTERCULTURAL ASPECTS**

**Course director:** Dr. Erika Mária Marek, assistant professor  
Department of Operational Medicine  
erika.marek@aok.pte.hu

- **2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2**
- **Number of hours/semester:** 24 lectures + 0 practices + 0 seminars = total of 24 hours
- **Course headcount limitations (min.-max.):** 1 – 16  
  **Prerequisites:** none

### Topic

Participants of this course will gain in knowledge and skills regarding the specific aspects of providing care for migrants as well as for the Roma ethnic minority (with appr. 13 million population in the EU!) from health-geographical and intercultural approach. As final assessment students participants are expected to complete an individual project (an essay or presentation).

### Conditions for acceptance of the semester

Maximum of 15 % absence allowed

### Mid-term exams

Midsemester grade: students shall complete their individual project (an essay or presentation) for the successful completion of the course.

### Making up for missed classes

To be discussed with the course tutor in each individual case.

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

### Lectures

1. **Introduction. Aims and scopes of the course. Principals of migration-health, migration as global phenomenon: causes, terms, recent trends of regular and irregular migration, health and public health aspects of the process and stages of migration (countries of origin, transit and destination countries) (overview).**
   
   Dr. Marek Erika Mária

2. **Introduction. Aims and scopes of the course. Principals of migration-health, migration as global phenomenon: causes, terms, recent trends of regular and irregular migration, health and public health aspects of the process and stages of migration (countries of origin, transit and destination countries) (overview).**
   
   Dr. Marek Erika Mária

3. **Fundamentals of migrant-sensitive healthcare: national and international directives and recommendations, initiatives and endeavours of the WHO/ECDC, adaptable models, good practices, programs (Amsterdam Declaration, Migrant-Friendly Hospitals program, etc.)**
   
   Dr. Szilárd István

4. **Fundamentals of migrant-sensitive healthcare: national and international directives and recommendations, initiatives and endeavours of the WHO/ECDC, adaptable models, good practices, programs (Amsterdam Declaration, Migrant-Friendly Hospitals program, etc.)**
   
   Dr. Szilárd István

5. **Public health aspects of significant source countries for migrants 1.**
   (push-factors, morbidity profile, vaccinations, state of health system, cultural/ religious aspects that may influence health, healing traditions, etc.)
   1. Middle-Eastern Region, particularly: Syria, Iraq, and Iran
   
   Dr. Marek Erika Mária
Public health aspects of significant source countries for migrants 1.
(push-factors, morbidity profile, vaccinations, state of health system, cultural/religious aspects that may influence health, healing traditions, etc.)
1. Middle-Eastern Region, particularly: Syria, Iraq, and Iran
Dr. Marek Erika Mária

Public health aspects of significant source countries for migrants 2.
(push-factors, morbidity profile, vaccinations, state of health system, cultural/religious aspects that may influence health, healing traditions, etc.)
2. Southeast-Asia, particularly: Afghanistan, Pakistan, and Bangladesh
Dr. Marek Erika Mária

Public health aspects of significant source countries for migrants 2.
(push-factors, morbidity profile, vaccinations, state of health system, cultural/religious aspects that may influence health, healing traditions, etc.)
2. Southeast-Asia, particularly: Afghanistan, Pakistan, and Bangladesh
Dr. Marek Erika Mária

Public health aspects of significant source countries for migrants 3.
(push-factors, morbidity profile, vaccinations, state of health system, cultural/religious aspects that may influence health, healing traditions, etc.)
3. Sub-Saharan and North-African countries, particularly: Nigeria, Eritrea, and Morocco
Dr. Marek Erika Mária

Public health aspects of significant source countries for migrants 3.
(push-factors, morbidity profile, vaccinations, state of health system, cultural/religious aspects that may influence health, healing traditions, etc.)
3. Sub-Saharan and North-African countries, particularly: Nigeria, Eritrea, and Morocco
Dr. Marek Erika Mária

Public health aspects of significant source countries for migrants 4.
(push-factors, morbidity profile, vaccinations, state of health system, cultural/religious aspects that may influence health, healing traditions, etc.)
4. Balkans, particularly: Serbia, Bosnia-Hercegovina, Kosovo, and Albania
Dr. Marek Erika Mária

Public health aspects of significant source countries for migrants 4.
(push-factors, morbidity profile, vaccinations, state of health system, cultural/religious aspects that may influence health, healing traditions, etc.)
4. Balkans, particularly: Serbia, Bosnia-Hercegovina, Kosovo, and Albania
Dr. Marek Erika Mária

The dark (illegal) side of migration: smuggling and trafficking of human beings (including sex trafficking, prostitution, forced labour, etc.) their effects on health and specific aspects of rehabilitation and care of the victims.
Dr. Marek Erika Mária

Particularly vulnerable populations in the refugee cycle: specific aspects of healthcare for migrant women, children, elderly, LGBTI populations and disabled people. Sexual and gender based violence (SGBV) in different cultures (female genital mutilation (FGM), honour killings) and other harmful traditional practices.
Dr. Marek Erika Mária

Migrants in Europe: cultural and religious factors which may influence health and healthcare (religious regulations, cultural habits, diets etc. among Christian, Muslim, Jewish communities and other religious minorities).
Dr. Marek Erika Mária

Migrants in Europe: cultural and religious factors which may influence health and healthcare (religious regulations, cultural habits, diets etc. among Christian, Muslim, Jewish communities and other religious minorities).
Dr. Marek Erika Mária

Intercultural communication techniques in healthcare practice. Coping strategies against discrimination and stereotypes towards migrants/ refugees and Romas.
Dr. Németh Tímea

Intercultural communication techniques in healthcare practice. Coping strategies against discrimination and stereotypes towards migrants/ refugees and Romas.
Dr. Németh Tímea

Dr. Marek Erika Mária

Dr. Marek Erika Mária
21 Specific aspects of providing culturally-sensitive care for Roma ethnic minority populations (value of health, beliefs and health behaviours, customs). Health status and conditions of romas living in segregated areas, settlements or caravans.
   Dr. Marek Erika Mária

22 Specific aspects of providing culturally-sensitive care for Roma ethnic minority populations (value of health, beliefs and health behaviours, customs). Health status and conditions of romas living in segregated areas, settlements or caravans.
   Dr. Marek Erika Mária

23 Case studies, role-plays.
   Presentation, discussion and of students projects. Assessment.
   Dr. Marek Erika Mária

24 Case studies, role-plays.
   Presentation, discussion and of students projects. Assessment.
   Dr. Marek Erika Mária

Practices

Seminars

Exams

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
# The Health Aspects of Waste Management

**Course director:** DR. TIMEA VARJAS, assistant professor  
Department of Public Health Medicine • vtini_68@yahoo.com

<table>
<thead>
<tr>
<th>Course headcount limitations (min.-max.)</th>
<th>1 – 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisites:</td>
<td>none</td>
</tr>
</tbody>
</table>

**1 credit • midterm grade • Optional subject • spring semester • recommended semester: 2**

**Number of hours/semester:** 12 lectures + 0 practices + 0 seminars = total of 12 hours

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## Topic

Importance of waste treatment and management is unquestionable. Vast amounts of waste is produced every day even in our close environment. The course searches what happens with the garbage after it is thrown out. The course mainly focuses on the health effects of different types of waste one can get in contact with.

## Conditions for acceptance of the semester

None.

## Mid-term exams

Test after the last lecture.

## Making up for missed classes

2x45 minutes of absence is allowed.

## Reading material

- **Obligatory literature**
  
  Lecture slides

- **Literature developed by the Department**
  
  Lecture slides.

- **Notes**
  
  Lecture slides.

- **Recommended literature**
  
  Lecture slides.

## Lectures

1. Basics of waste management  
   Dr. Szabó István
2. Main categories of waste  
   Dr. Szabó István
3. Waste collection and transportation  
   Dr. Szabó István
4. Waste handling - physical and chemical procedures  
   Dr. Szabó István
5. Waste handling - physical and chemical procedures  
   Dr. Szabó István
6. Biological waste handling  
   Dr. Szabó István
7. Waste incineration  
   Dr. Szabó István
8. Waste deponation  
   Dr. Szabó István
9. Hazardous waste management  
   Dr. Szabó István
10. Hazardous waste management  
    Dr. Szabó István
11. Waste from Healthcare  
    Dr. Szabó István
12. Other special waste categories  
    Dr. Szabó István
Practices
Seminars
Exam topics/questions
Test from the lecture slides.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
THE HUMAN MICROBIOME: EFFECTS ON DISEASE DEVELOPMENT AND PREVENTION

Course director: DR. ISTVÁN ZOLTÁN KISS, professor
Department of Public Health Medicine • istvan.kiss@aok.pte.hu

1 credit • midsemester grade • Optional subject • both semesters • recommended seminar: 2
Number of hours/semester: 22 lectures + 0 practices + 2 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 20
Prerequisites: none

Topic

In the human body the number of microbial cells (even according to conservative estimations) is higher than the number of somatic human cells. This microbial ecosystem is distributed across several human organs - even in organs which some decades ago were thought to be sterile.

Recently several articles have been published on the interaction of the microbiome with several physiological/pathophysiological processes (immunity, inflammation, allergy, etc.), and its role in the development of several diseases (e.g. cardiovascular diseases, cancer, asthma, obesity, inflammatory bowel diseases...).

Besides discussing the above mentioned interactions, the course focuses on the role of the human microbiome in disease prevention/therapy. Pharmacological and non-pharmacological possibilities to influence the composition of our microbiome will be discussed, and some futuristic therapeutic approaches (stool transplantation) will also be reviewed.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

Two written multiple choice tests during the semester.

Making up for missed classes

There are no make-up classes.

Reading material

- Obligatory literature
- Literature developed by the Department
  The learning material will be uploaded to Neptun.
- Notes
- Recommended literature

Lectures

1 The human microbiome. Size, composition, main characteristics.
   Dr. Kiss István Zoltán
2 The Human Microbiome Project.
   Dr. Kiss István Zoltán
3 The gut microbiome.
   Dr. Kiss István Zoltán
4 The skin microbiome.
   Dr. Kiss István Zoltán
5 The oral microbiome. The vaginal microbiome.
   Dr. Kiss István Zoltán
6 The microbiome of other organs (e.g. lungs, placenta, uterus, urinary tract).
   Dr. Kiss István Zoltán
7 The role of microbiome in health and diseases.
   Dr. Kiss István Zoltán
8 The role of microbiome in cardiovascular diseases.
   Dr. Kiss István Zoltán
9 Microbiome and cancer I.
   Dr. Kiss István Zoltán
10 Microbiome and cancer II.
   Dr. Kiss István Zoltán
11 Microbiome and immunity.
   Dr. Kiss István Zoltán
12 Microbiome and inflammation.  
   Dr. Kiss István Zoltán

13 Microbiome, allergy, atopia and related diseases.  
   Dr. Kiss István Zoltán

14 Microbiome and inflammatory bowel diseases.  
   Dr. Kiss István Zoltán

15 Microbiome and obesity.  
   Dr. Kiss István Zoltán

16 Microbiome and diabetes.  
   Dr. Kiss István Zoltán

17 How diet and nutrition affects our microbiome I.?  
   Dr. Kiss István Zoltán

18 How diet and nutrition affects our microbiome II.?  
   Dr. Kiss István Zoltán

19 Effects of lifestyle (physical activity, smoking, alcohol etc.) on the microbiome. Can we modify our microbiome? (I.)  
   Dr. Kiss István Zoltán

20 Effects of lifestyle (physical activity, smoking, alcohol etc.) on the microbiome. Can we modify our microbiome? (II.)  
   Dr. Kiss István Zoltán

21 Antibiotics, probiotics, prebiotics and our microbiome.  
   Dr. Kiss István Zoltán

22 Microbiome-related disease prevention strategies.  
   Dr. Kiss István Zoltán

Practices

Seminars

1 Microbiome-therapy, case studies I.

2 Microbiome-therapy, case studies II.

Exam topics/questions

There is no list of exam questions.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Kiss István Zoltán (EFZCGE)
Molecular Basis of Muscle Function

Course director: Dr. Dénes Lőrinczy, professor emeritus
Department of Biophysics • denes.lorinczy@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 1 – 30
Prerequisites: none

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.

Mid-term exams
Written test at the end of semester.

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
- Obligatory literature
- Literature developed by the Department
  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.
- Notes
- Recommended literature

Lectures
1 The composition of muscle.
   Dr. Lőrinczy Dénes
2 The sorts of muscle.
   Dr. Lőrinczy Dénes
3 The structure of muscle on the basis of light, phasecontrast and polarization microscope.
   Dr. Lőrinczy Dénes
4 Structure of muscle by ELM. 
   Dr. Lőrinczy Dénes
5 Sorts of muscle contraction.
   Dr. Lőrinczy Dénes
6 Elastic behaviour of passive and active muscle.
   Dr. Lőrinczy Dénes
7 Muscle force and length relationship, Hill’s equation.
   Dr. Lőrinczy Dénes
8 Work and heat production done by a muscle, efficiency of muscle function.
   Dr. Lőrinczy Dénes
9 Thermoelastic behaviour of muscle.
   Dr. Lőrinczy Dénes
10 Muscle models proposed by mechanical and structural investigations.
   Dr. Lőrinczy Dénes
11 Biochemical basis and energetics of muscle function.
   Dr. Lőrinczy Dénes
12 Bioelectrical phenomena. Action potentials.
   Dr. Lőrinzcy Dénes
13 Nernst equation, G-H-K equation.
   Dr. Lőrinzcy Dénes
14 Voltage- and patch-clamp techniques.
   Dr. Lőrinzcy Dénes
15 Excitation-contraction coupling.
   Dr. Lőrinzcy Dénes
16 Structure of muscle proteins (actin and myosin, actomyosin complex).
   Dr. Lőrinzcy Dénes
17 Discussion of sliding model in details (x-ray diffraction).
   Dr. Lőrinzcy Dénes
18 Molecular dynamic background of muscle contraction (EPR spectroscopy)
   Dr. Lőrinzcy Dénes
19 Muscle in the sport and rehabilitation (wellness).
   Dr. Lőrinzcy Dénes
20 Principle of differential scanning calorimetry.
   Dr. Lőrinzcy Dénes
21 Thermodynamic background of muscle contraction (DSC results)
   Dr. Lőrinzcy Dénes
22 Muscle and levers in locomotion.
   Dr. Lőrinzcy Dénes
23 Written test.
   Dr. Lőrinzcy Dénes
24 Written test.
   Dr. Lőrinzcy Dénes

Practices
Seminars
Exam topics/questions
Written test

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
## Diseases of Signal Transduction

<table>
<thead>
<tr>
<th>Course director:</th>
<th>GYÖRGY SÉTÁLÓ DR., associate professor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department:</td>
<td>Department of Medical Biology and Central Electron Microscope Laboratory</td>
</tr>
<tr>
<td><a href="mailto:gyorgy.setalo.jr@aok.pte.hu">gyorgy.setalo.jr@aok.pte.hu</a></td>
<td></td>
</tr>
</tbody>
</table>

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 2

### Course description:

**Number of hours/semester:**
- 12 lectures
- 0 practices
- 0 seminars
- Total of 12 hours

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

**Prerequisites:**
- OAA-MB1-T completed
- OAA-MB2-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

### 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

Maximum of 25 % absence allowed

### Mid-term exams

Two multiple-choice test-exams, with 20-25 questions each, one halfway and another one at the end of the course.

### Making up for missed classes

It is not possible to make up for missed classes.

### Reading material

- **Obligatory literature**
- Literature developed by the Department

  Lecturers using ppt will load these up onto the intranet after their class.

- **Notes**
- Recommended literature

### Lectures

1. The protein kinase A system.
   - Dr. Sétáló György
2. Signaling in infectious diseases (cholera, pertussis and anthrax).
   - Dr. Palkovics Tamás
   - Dr. Sétáló György
4. Signaling through cell-cell and cell-matrix connections.
   - Dr. Sétáló György
5. First test.
   - Dr. Sétáló György
   - Dr. Bátor Judit
7. Signaling and inflammation.
   - Dr. Mikó Éva
8. Signaling of apoptosis.
   - Dr. Páp Marianna
9. Steroid signaling.
   - Dr. Sétáló György
10. Integrin signaling and metastasis.
    - Dr. Berta Gergely
11. Signaling gone wrong in the developing nervous system.
    - Dr. Ábrahám Hajnalka Gabriella
    - Dr. Sétáló György
Practices

Seminars

Exam topics/questions

Multiple-choice test questions based on the actually presented materials of the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
The eating habits of different nations and landscapes can be completely different from each other, special regard to the used materials and kitchen technology processes. It is necessary to get to know the ideological background of major world religions, fasting and nutritional habits related to different religions, used materials, used kitchen technological procedures, in order to analyze the various diet-related diseases? Morbidity and mortality indicators in epidemiological and nutritional physiological aspects. The course describes the effect of the various nutritional factors? Impact on the above-mentioned ratios and provides an extracurricular image of the world?s religions? And nations? Nutritional habits.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Examination: written test

Making up for missed classes
based on individual consideration

Reading material
- Obligatory literature
- Literature developed by the Department
  PPT-presentations (Neptun)
- Notes
- Recommended literature

Lectures
1. The French kitchen, main characteristics, nutritional and health science aspects - epidemiological data
   Dr. Raposa László Bence
2. Overview of the Mediterranean life-philosophy and gastronomy, nutritional and health science aspects
   Dr. Raposa László Bence
3. Anglo-Saxon areas: presentation of the characteristics of the Russian eating habits
   Dr. Raposa László Bence
4. Benelux characteristics, methods of preparing food, nutritional and health science aspects
   Dr. Raposa László Bence
5. Scandinavian countries; typical eating habits, nutritional and health science aspects
   Dr. Raposa László Bence
6. Bible and nutrition, the Catholic religion, fasting habits
   Dr. Raposa László Bence
7. Far Eastern cuisine overview, epidemiological aspects
   Dr. Raposa László Bence
8. American eating habits'; impact on obesity and related illnesses
   Dr. Raposa László Bence
9. The Jewish religious life, Jewish food
   Dr. Raposa László Bence
10. The Islamic faith and the basics of Islam, Ramadan, the Arabic countries; nutritional habits
    Dr. Raposa László Bence
11. Summary
    Dr. Raposa László Bence
12. Exam, test
    Dr. Raposa László Bence
Practices
Seminars
Exam topics/questions
Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
<table>
<thead>
<tr>
<th>OAF-MEG-T</th>
<th>METHODS OF MENTAL HEALTH PROMOTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course director:</strong></td>
<td>DR. ISTVÁN ZOLTÁN KISS, professor</td>
</tr>
<tr>
<td><strong>Department of Public Health Medicine</strong></td>
<td><a href="mailto:istvan.kiss@aok.pte.hu">istvan.kiss@aok.pte.hu</a></td>
</tr>
<tr>
<td><strong>1 credit • midterm grade • Optional subject • spring semester • recommended semester: 2</strong></td>
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<tr>
<td><strong>Number of hours/semester:</strong></td>
<td>12 lectures + 0 practices + 0 seminars = total of 12 hours</td>
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<tr>
<td><strong>Course headcount limitations (min.-max.):</strong></td>
<td>5 – 15</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong></td>
<td>none</td>
</tr>
</tbody>
</table>

**Topic**

Interpersonal skills and knowing ourselves are necessary for our medical profession and efficient work, to have a successful life, great life quality, excellent study results and successful exams. In our course students can learn methods that can help them to improve their everyday functions and contribute to their positive mental health.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

Neptun Meet Street

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - Neptun Meet Street
- **Notes**
- **Recommended literature**

**Lectures**

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Basics of communication. Dr. Horváth-Sarródi Andrea</td>
</tr>
<tr>
<td>2</td>
<td>Communication in different situations. Dr. Horváth-Sarródi Andrea</td>
</tr>
<tr>
<td>3</td>
<td>Methods of knowing ourselves. Dr. Horváth-Sarródi Andrea</td>
</tr>
<tr>
<td>4</td>
<td>Basics of group dynamics. Dr. Horváth-Sarródi Andrea</td>
</tr>
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<td>5</td>
<td>Background and characteristics of conflicts. Dr. Horváth-Sarródi Andrea</td>
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<td>6</td>
<td>Conflict management. Dr. Horváth-Sarródi Andrea</td>
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<td>7</td>
<td>Communication situations during medical studies. Dr. Horváth-Sarródi Andrea</td>
</tr>
<tr>
<td>8</td>
<td>Aim of communication situations. Hidden communication, recognizing the „script” in the background. Dr. Horváth-Sarródi Andrea</td>
</tr>
<tr>
<td>9</td>
<td>Efficient communication methods I. Dr. Horváth-Sarródi Andrea</td>
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<td>10</td>
<td>Efficient communication methods II. Dr. Horváth-Sarródi Andrea</td>
</tr>
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<td>11</td>
<td>The Gordon model. Dr. Horváth-Sarródi Andrea</td>
</tr>
<tr>
<td>12</td>
<td>Using the „I-statements”. Dr. Horváth-Sarródi Andrea</td>
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</table>
Practices
Seminars
Exam topics/questions
Neptun Meet Street

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
OAF-MGY-T  MEDICINAL PLANTS IN THE MECSEK MOUNTAIN - FIELD STUDY 1

Course director: Dr. Nóra PAPP, associate professor
Department of Pharmacognosy • nora4595@gamma.ttk.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

Number of hours/semester: 12 lectures + 12 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 15
Prerequisites: none

Topic

The course includes 6x2 lectures and 3x4 practice (field work). The aim of the course is to practice the correct identification of medicinal plants, knowledge of main morphological characters, habitat, collection place, and therapeutical use. The course gives a general overview on the most frequent medicinal plants, protected and produced species, as well as various vegetation types in the Mecsek mountain and its environment. In addition, the effect and relationship between abiotic factors and secondary metabolites of plants are also discussed, which can provide recommendations for collection place and habitat of plants.

Conditions for acceptance of the semester

Maximal absences: 2 /semester.

Mid-term exams

Fulfillment of 2 tests.

Making up for missed classes

http://gyrk.pte.hu/en/egyseg/oktatasianyagok/1640
http://aok.pte.hu/en/egyseg/oktatasianyagok/1640

Reading material

- Obligatory literature
  - Literature developed by the Department
    Lectures downloaded in Neptun.
- Notes
- Recommended literature

Lectures

1  Vegetation types of medicinal plants; ecological factors in habitats I
   Dr. Papp Nóra
2  Vegetation types of medicinal plants; ecological factors in habitats I
   Dr. Papp Nóra
3  Vegetation types of medicinal plants; ecological factors in habitats II
   Dr. Papp Nóra
4  Vegetation types of medicinal plants; ecological factors in habitats II
   Dr. Papp Nóra
5  Environmental adaptation of medicinal plants (morphology, phytochemistry); relationship between medicinal plant populations and their environment
   Dr. Papp Nóra
6  Environmental adaptation of medicinal plants (morphology, phytochemistry); relationship between medicinal plant populations and their environment
   Dr. Papp Nóra
7  Vegetation types in the Mecsek mountain I: medicinal plants in beech and karst shrub forests
   Dr. Papp Nóra
8  Vegetation types in the Mecsek mountain II: medicinal plants in rock grasses, swamps and alder woods
   Dr. Papp Nóra
9  Medicinal plants at road edge vegetations, planted and protected plants of the Mecsek mountain I
   Dr. Papp Nóra
10 Medicinal plants at road edge vegetations, planted and protected plants of the Mecsek mountain II
    Dr. Papp Nóra
11 Identification of medicinal plants used Identification Handbooks, methods in field work I
    Dr. Papp Nóra
12 Identification of medicinal plants used Identification Handbooks, methods in field work II
    Dr. Papp Nóra
Practices

1. Identification of medicinal plants in rock grasses (Tettye)
2. Identification of medicinal plants in rock grasses (Tettye)
3. Identification of medicinal plants in rock grasses (Tettye)
4. Identification of medicinal plants in rock grasses (Tettye)
5. Identification of medicinal plants in oak forest (Dömörkapu)
6. Identification of medicinal plants in oak forest (Dömörkapu)
7. Identification of medicinal plants in oak forest (Dömörkapu)
8. Identification of medicinal plants in oak forest (Dömörkapu)
9. Identification of medicinal plants in swamp (Pellérd)
10. Identification of medicinal plants in swamp (Pellérd)
11. Identification of medicinal plants in swamp (Pellérd)
12. Identification of medicinal plants in swamp (Pellérd)

Seminars

Exam topics/questions

According to the topics of the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Papp Nóra (S3PA4G)
OAF-MMO-T METHODS IN MOLECULAR BIOLOGY AND THEIR APPLICATIONS IN MEDICAL PRACTICE

Course director: DR. MARIANNA PAP, associate professor
Department of Medical Biology and Central Electron Microscope Laboratory • marianna.pap@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 1 – 200
Prerequisites: OAA-MB1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The aim of the course is to describe interesting and novel molecular biology technologies, including three-dimensional tissue culturing, bioprinting, new generation sequencing techniques, targeted genome editing, genetically modified organisms. We emphasize the importance and applicability of these methods in research, in the modeling and diagnosis of different diseases. We also describe the importance and application of artificial intelligence in future medicine.

Conditions for acceptance of the semester
Maximum of 25% absence allowed

Mid-term exams
Written test on the last week.

Making up for missed classes
No possibility to make up the missing lectures.

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture slides
- Notes
- Recommended literature

Lectures
1 Types of cell cultures
   Dr. Pap Marianna
2 Maintenance and manipulation of cell cultures
   Dr. Pap Marianna
3 3D tissue culturing
   Dr. Pap Marianna
4 3D tissue culturing
   Dr. Pap Marianna
5 Bioprinting
   Dr. Pap Marianna
6 Bioprinting
   Dr. Pap Marianna
7 Hybridization techniques
   Dr. Pap Marianna
8 PCR, RT-PCR
   Dr. Pap Marianna
9 Next generation sequencing techniques
   Dr. Pap Marianna
10 Next generation sequencing techniques
    Dr. Pap Marianna
11 Analysis of DNA methylation, epigenetics
   Rauch Tibor Attila
12 Analysis of DNA methylation, epigenetics
   Rauch Tibor Attila
<table>
<thead>
<tr>
<th>No.</th>
<th>Course Title</th>
<th>Instructor</th>
</tr>
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<tbody>
<tr>
<td>13</td>
<td>Cloning, protein expression systems and their medical applications</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>14</td>
<td>Cloning, protein expression systems and their medical applications</td>
<td>Dr. Pap Marianna</td>
</tr>
<tr>
<td>15</td>
<td>Genome-editing technologies, medical applications and ethical concerns</td>
<td>Dr. Pap Marianna</td>
</tr>
<tr>
<td>16</td>
<td>Genome-editing technologies, medical applications and ethical concerns</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>17</td>
<td>Analysis of protein interactions</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>18</td>
<td>Analysis of protein interactions</td>
<td>Dr. Pap Marianna</td>
</tr>
<tr>
<td>19</td>
<td>Genetically-modified organisms and their applications in medicine</td>
<td>Dr. Pap Marianna</td>
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<td>20</td>
<td>Genetically-modified organisms and their applications in medicine</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>21</td>
<td>Importance and application of artificial intelligence in medicine</td>
<td>Dr. Pap Marianna</td>
</tr>
<tr>
<td>22</td>
<td>Importance and application of artificial intelligence in medicine</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>23</td>
<td>Exam</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>24</td>
<td>Exam</td>
<td>Dr. Pap Marianna</td>
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</tbody>
</table>

**Practices**  
**Seminars**  
**Exam topics/questions**  

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  
**Participants**
OAF-N04-T  **ANATOMICAL TERMINOLOGY**

**Course director:** GABRIELLA HÁBEL, language teacher
Department of Languages for Specific Purposes • gabriella.habel@aok.pte.hu

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<tr>
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<td>0 lectures + 0 practices + 24 seminars = total of 24 hours</td>
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<td>Course headcount limitations (min.-max.):</td>
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<tr>
<td>3 – 25</td>
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<tr>
<td>Prerequisites: OAE-N06-T completed</td>
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The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**
The course aims to mediate the basic anatomical terms supporting the studies of anatomy.

**Conditions for acceptance of the semester**
Maximum of 15 % absence allowed

**Mid-term exams**
Midterm test during week 11.
Retake test for those who happen to fail the midterm during week 12.

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

**Reading material**
- **Obligatory literature**
- Literature developed by the Department
- Notes
- **Recommended literature**
  University Script

**Lectures**
**Practices**
**Seminars**
4. Surface Features of Bones, Scapula, humerus.
13. Terminology of the ligaments and joints of the vertebral column.
14. Terminology of the ligaments and joints of the vertebral column.
15. Anatomical Terminology of the muscular system.
16. Anatomical Terminology of the muscular system.
17. Anatomical terminology of the skull. Calvaria, internal cranial base.
Exam topics/questions

Anatomical terminology of the locomotor system (bones, joints, muscles and the skull).

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Hábel Gabriella (CWD81H)
**OAF-N07-T  CLINICAL TERMINOLOGY**

**Course director:** GABRIELLA HÁBEL, language teacher  
Department of Languages for Specific Purposes  
gabriella.habel@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2  
Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours  
Course headcount limitations (min.-max.): 3 – 25  
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**
The course aims to mediate the basic clinical terms supporting the clinical studies.

**Conditions for acceptance of the semester**
Maximum of 15 % absence allowed

**Mid-term exams**
Midterm test during week 11.
Retake test for those who happen to fail the midterm during week 12.

**Making up for missed classes**
To be discussed with the course instructor

**Reading material**
- **Obligatory literature**
- Literature developed by the Department
- **Notes**
- Recommended literature
  University script

**Lectures**

**Practices**

**Seminars**
1 Structure of clinical terms, introduction.
2 Structure of clinical terms, introduction.
3 Patient examination. The usage of acronyms and abbreviations in history taking.
4 Patient examination. The usage of acronyms and abbreviations in history taking.
5 Terminology of the male reproductive system. Terminology of benign prostatic hyperplasia.  
   Videos. Students’ presentations.
6 Terminology of the male reproductive system. Terminology of benign prostatic hyperplasia.  
   Videos. Students’ presentations.
7 Case reports in the field of gynecology. Terminology of the female reproductive system, pregnancy and childbirth. Terminology of endometriosis and ectopic pregnancy.
8 Case reports in the field of gynecology. Terminology of the female reproductive system, pregnancy and childbirth. Terminology of endometriosis and ectopic pregnancy.
9 Clinical terminology of surgical procedures.
10 Clinical terminology of surgical procedures.
11 Hydrocele and hernia. Terminology of direct, indirect inguinal hernias and their treatments. Herniorrhaphy.
12 Hydrocele and hernia. Terminology of direct, indirect inguinal hernias and their treatments. Herniorrhaphy.
13 Differential diagnosis, abdominal pain. Case reports in the field of gastroenterology, terminology of Crohn’s disease and ulcerative colitis.
14 Differential diagnosis, abdominal pain. Case reports in the field of gastroenterology, terminology of Crohn’s disease and ulcerative colitis.
15 Terminology of the urinary system (hematuria, dysuria, dialysis, kidney stones).
16 Terminology of the urinary system (hematuria, dysuria, dialysis, kidney stones).
17 Differential diagnosis. Emesis, hyperemesis gravidarum.
18 Differential diagnosis. Emesis, hyperemesis gravidarum.
20 Differential diagnosis. Pyrexia, hyperpyrexia, hyperthermia.
Exam topics/questions

The midterm questions are based on the topics discussed during the semester.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Hábel Gabriella (CWD81H)
**OAF-NOA-T  NEUROANTHROPOLOGY**

Course director: **DR. ÁRPÁD ISTVÁN CSÁTHÓ**, associate professor  
Department of Behavioural Sciences  
arpad.csatho@aok.pte.hu

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<tbody>
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<td>Prerequisites: none</td>
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The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Culture, mind, and brain: The three main substrates of our self. The basic mechanisms of these substrates as well as the potential interactions between them have been widely investigated by several scientific fields. For example, various research areas of neuroscience and psychology are dedicated to mind and brain connections. In addition, the dynamics and rules of the complex human cultures have been rigorously studied by cultural anthropologists. The potential cultural effects on neuronal functioning, however, received less attention. Therefore, a novel scientific synthesis - Neuroanthropology - has emerged recently with an aim to provide a conceptual background of culture-brain interactions. The course is dedicated to this scientific area. More particular, the course aims to show the different aspects of the main question of ‘how human culture is embedded in the human brain’.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

Students are required to write an essay about a Neuroanthropology topic chosen from the topics announced during the semester.

**Making up for missed classes**

According to the Code of Studies and Examinations.

**Reading material**

- **Obligatory literature**
  - Literature developed by the Department
    - Available on Neptun.

- **Notes**
  - Recommended literature

**Lectures**

**Practices**

**Seminars**

1. Methods and main theoretical approaches of neuroanthropology
2. Methods and main theoretical approaches of neuroanthropology
3. Culture-sensitive neural substrates
4. Culture-sensitive neural substrates
5. Neural representation of social status hierarchy
6. Neural representation of social status hierarchy
7. The neuroanthropology of human empathy
8. The neuroanthropology of human empathy
9. Socio-cultural background of pain
10. Socio-cultural background of pain
11. Culture bound syndromes: Relationship between culture and mental diseases
12. Culture bound syndromes: Relationship between culture and mental diseases
13. Neuroanthropology of addiction
14. Neuroanthropology of addiction
15. The bio-psycho-social context of „everyday” drugs
16. The bio-psycho-social context of „everyday” drugs
17. Human locomotion: Ecology, Culture, and Disorders
18. Human locomotion: Ecology, Culture, and Disorders
19. Fatigue and Activity: Biopsychological and social correlates
20. Fatigue and Activity: Biopsychological and social correlates
Human diet and its neuro-cultural background

The social stress: Effects of cultural and neural processes

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Csathó Árpád István (D7HZFF)
OAF-NS2-T  NOBEL PRIZE AWARDED CELL BIOLOGY II

Course director: DR. MARIANNA PAP, associate professor

Department of Medical Biology and Central Electron Microscope Laboratory • marianna.pap@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

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

Course headcount limitations (min.-max.): 1 – 200

Prerequisites: OAA-MB1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The aim of the course is to present the most important and most exciting Nobel Prize-winning molecular cell biology discoveries based on Nobel lectures given by the winners. The background story of the awards reveals many years of research work, good ideas, good fortune mixed with family and other personal memories. There is no single recipe for success, the road is always a bit different, and perhaps the only common feature is the teamwork. From the presentations one might get insight of the winners’ personality as well. An important aspect was in the selection of the topics to emphasize their significance (DNA-, RNA-structure and their synthesis, ribosome function), their impact on current medical way of thinking (e.g. Prions) and diagnostic methods (e.g. recombinant DNA technology, DNA sequencing), the description of their present and future medical applicability (e.g. in vitro fertilization), as well as to highlight their potential relations to different diseases (e.g. cell cycle regulation, reprogram of differentiated cells, RNA interference, papillomaviruses, HIV). Lectures are organized based on the topics related to the weekly schedule of the molecular cell biology course, not in chronological order. Most of the presented discoveries and experiments are involved in the molecular cell biology course material, so hopefully their discussion helps in the better understanding of those topics and lead to a more effective and shorter exam preparation.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

2 written tests: on week 7 and on week 14.

Making up for missed classes

Participation on Hungarian or German lectures is the only possibility to make-up missed lectures.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

www.nobelprize.org

Lectures

1. Passive transport
   Dr. Pap Marianna
2. Passive transport
   Dr. Pap Marianna
3. Active transport
   Dr. Pap Marianna
4. Action of hormones
   Dr. Pap Marianna
5. G-proteins and their role in signal transduction
   Dr. Pap Marianna
6. G-protein coupled receptors
   Dr. Pap Marianna
7. Growth factors
   Dr. Pap Marianna
8. Growth factors
   Dr. Pap Marianna
9. Reversible protein phosphorylation in signal transduction pathways
   Dr. Pap Marianna
10. Reversible protein phosphorylation in signal transduction pathways
    Dr. Pap Marianna
<table>
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<th>Instructor</th>
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<tr>
<td>11</td>
<td>Genetic control of early embryonic development</td>
<td>Rauch Tibor Attila</td>
</tr>
<tr>
<td>12</td>
<td>Genetic control of early embryonic development</td>
<td>Rauch Tibor Attila</td>
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<tr>
<td>13</td>
<td>Programmed cell death</td>
<td>Dr. Pap Marianna</td>
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<td>14</td>
<td>Programmed cell death</td>
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<tr>
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<td>DNA tumor viruses</td>
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<td>17</td>
<td>RNA tumorviruses</td>
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<td>18</td>
<td>Retroviral oncogenes</td>
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<td>19</td>
<td>Telomeres and telomerase activity in cancers</td>
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<td>20</td>
<td>Human cell- and tissue transplantation</td>
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<tr>
<td>21</td>
<td>In vitro fertilization</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>22</td>
<td>The discovery of the green fluorescent protein and its significance in molecular biology</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>23</td>
<td>Exam</td>
<td>Dr. Pap Marianna</td>
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<tr>
<td>24</td>
<td>Exam</td>
<td>Dr. Pap Marianna</td>
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</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
OAF-PLH-T  THE PLACEBO EFFECT

Course director: Tibor Szolcsányi, assistant professor
Department of Behavioural Sciences  tibor.szolcsanyi@aok.pte.hu

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 5 – 50  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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
Maximum of 25 % absence allowed

Mid-term exams
Written test taking place in the last class. To improve the grade, the test can be repeated two times in the first two weeks of the exam period.

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

Reading material

- Obligatory literature
  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
  Jozien M. Bensing; William Verheul: The Silent Healer: The Role of Communication in Placebo Effects, Patient Education and Counseling 80, 2010; 293-299

- Literature developed by the Department
  Additional materials: Neptun MeetStreet

- Notes
  --

- Recommended literature
  Lectures

Lectures
1  Introduction, definitions of placebo effect
   Dr. Szolcsányi Tibor
2  The use of placebo effect in the history of medicine
   Dr. Szolcsányi Tibor
3  The use of placebo effect in the context of medical research: the introduction of randomized placebo controlled clinical trials and its consequences
   Dr. Szolcsányi Tibor
4  The methodological and ethical challenges of placebo research  
   Dr. Szolcsányi Tibor  
5  The main forms of placebo effect (expectancy based / classical conditioning / affective modulation) and their effectiveness in different diseases  
   Dr. Szolcsányi Tibor  
6  The neurochemistry of placebo effect: placebo analgesia  
   Dr. Szolcsányi Tibor  
7  The neurochemistry of placebo effect: the cardiovascular and the respiratory system, immune response and hormone secretion, Parkinson disease  
   Dr. Szolcsányi Tibor  
8  The neurochemistry of placebo effect: further results  
   Dr. Szolcsányi Tibor  
9  An overview of the psycho-social factors that are able to induce placebo effect  
   Dr. Szolcsányi Tibor  
10  Pain management through psychological interventions and placebo analgesia  
   Dr. Szolcsányi Tibor  
11  Ethical implications: how to enhance the placebo effect through improving the physician-patient relationship  
   Dr. Szolcsányi Tibor  
12  Written test  
   Dr. Szolcsányi Tibor

Practices
Seminars
Exam topics/questions

--
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
# OAF-ROE-T

## Health Status and Health Care of Ethnic Minorities in the EU (Challenges, Tasks and Possibilities)

**Course director:**

**DR. ISTVÁN SZILÁRD,** honorary professor  
Department of Operational Medicine • istvan.szilard@aok.pte.hu

| 2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 2 |
|---|---|
| **Number of hours/semester:** | 24 lectures + 0 practices + 0 seminars = total of 24 hours |
| **Course headcount limitations (min.-max.):** | 1 – 20 |
| **Prerequisites:** | none |

The subject can only be registered in case of a PASSED and valid health aptitude test!

### Topic

European ethnic minorities like Roma and in particular, women, children and elderly are exposed to a range of specific health-related problems and often lack access to sufficient health care services. Significant gap exists between these minority communities and the majority populations. Their life expectancy is considerably below the national averages. In Slovakia, for instance, the life expectancy of Roma women is 17 years less than for the majority of the population; for men, it is 13 years less. In addition to physical health problems, there is insufficient awareness of health issues (both physical and mental), underdeveloped health literacy among the Roma, with preventive care or behaviour often completely ignored and health education/ health promotion non-existent. All these are challenging seriously the entire society including the health care providers with a special emphasize, how to close the existing serious gap. This is why in the focus of WHO health strategy of this decade is „tackling health inequalities“. Acting successfully in this field beside the humanitarian obligation-there is a need for new, special knowledge and skills like cultural competence in the health care, community level health promotion in multicultural environment.

### Conditions for acceptance of the semester

- Maximum of 15 % absence allowed
- Mid-term exams
- Making up for missed classes
  - Based on individual consultation with the lecturer.

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
  - Baráth Árpád, Agnieszka Gajewska, Ailsa Jones, Slavomíra Macáková, Florin Moisa, Martina Ondrusová and Szilárd István:  
    Building Healthy Roma Communities (in Hungarian–English) IOM 2007  
    Marie Dauvrin: Cultural Competence in Health Care: Challenging Inequalities, Involving Institutions Institute of Health and Society 2013
- **Notes**
- **Recommended literature**

### Lectures

1. Introduction: ethnic minorities in the EU - related EU policy - Ethnic minorities in Hungary and in Europe.  
   Dr. Szilárd István

2. Introduction: ethnic minorities in the EU - related EU policy - Ethnic minorities in Hungary and in Europe.  
   Dr. Szilárd István

   Dr. Kiss Zsuzsanna

   Dr. Kiss Zsuzsanna

5. WHO Marmot Report: Social determinants of health-tackling health inequalities  
   Dr. Szilárd István

6. WHO Marmot Report: Social determinants of health-tackling health inequalities  
   Dr. Szilárd István

7. Certain important epidemiological indicators. Health inequalities and related legislation  
   Dr. Kiss Zsuzsanna

8. Certain important epidemiological indicators. Health inequalities and related legislation  
   Dr. Kiss Zsuzsanna
Health determinants
Dr. Kiss István Zoltán

Role of genetic factors on the health status of minorities
Dr. Kiss István Zoltán

Role of environmental and lifestyle factors on the health status of minorities
Dr. Kiss Zsuzsanna

Health characteristics of Roma and other large ethnic communities in comparison to the majority society
Dr. Katz Zoltán

Health culture of Roma communities. Multicultural competence compliance
Dr. Baráth Árpád

Community level health promotion—theory, examples, contradictions and new endowers
Dr. Marek Erika Mária

Health promotion in ethnic minorities’ communities: the importance of cultural anthropological approach in health promotion interventions when tackling inequalities
Dr. Szilárd István

Félévzárás, írásbeli vizsga
Dr. Kiss Zsuzsanna

Practices
Seminars
Exam topics/questions
The exam will be based on the lectures and the recommended readings.
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
OAF-SB2-T  STANFORD LECTURES II: SEX, AGGRESSION, SCHIZOPHRENIA

Course director: DR. ROBERT MÁTICS, associate professor
Department of Behavioural Sciences • bobmatix@gmail.com

2 credit • midterm grade • Optional subject • both semesters • recommended semester: 2

Course headcount limitations (min.-max.): 1 – 15
Prerequisites: none

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

Topic
Prof Robert Sapolsky has a course on behavioural genetics on Stanford University. The 2010 lectures are freely available on the internet. Our course is based on the idea that by hearing a ca. 45–60 min long speech given there, we discuss the facts and hypotheses heard. The expansion and/or integration of this new knowledge is a key goal of the course.

Conditions for acceptance of the semester
Maximum of 25% absence allowed

Mid-term exams
Make up by appointment

Making up for missed classes
Make-up classes are possible if needed, we’ll have to make appointments.

Reading material
- Obligatory literature
  No compulsory books or readings.
- Literature developed by the Department
  Hand-outs will be given.
- Notes
  The extended notes by Prof Sapolsky are available from me.
- Recommended literature
  Evolution of Behavior
  Pool, R: Putting Game Theory to the Test, Science 267, 1995 1591-1593. Going from sociobiological theory to actual field data.
  Semmann D et al.: Volunteering Leads to Rock-paper-scissors Dynamics in a Public Goods Game, Nature 425 390, 2003 If you’re really into game theory stuff, this paper shows the rock-paper-scissors in humans. It’s pretty thick going thought, so not for the rookie (i.e., not required).

Lectures
1  General Introduction  Dr. Mátics Róbert
2  Twin studies  Dr. Mátics Róbert
3  IQ and birth order  Dr. Mátics Róbert
4  IQ and birth order  Dr. Mátics Róbert
5  Recognizing relatives: cellular level  Dr. Mátics Róbert
6  Recognizing relatives: cellular level  Dr. Mátics Róbert
7  Recognizing relatives: social anosmia  Dr. Mátics Róbert
8  Recognizing relatives: social anosmia  Dr. Mátics Róbert
Recognizing Relatives: intrasexual conflicts
Dr. Mátics Róbert

Human Sexual Behaviour: proximal and distal causes
Dr. Mátics Róbert

Human Sexual Behaviour: female orgasm
Dr. Mátics Róbert

Human Sexual Behaviour: non-reproductive sex
Dr. Mátics Róbert

Human Sexual Behaviour: human-specific patterns
Dr. Mátics Róbert

Human sexual behaviour: reproductive arrest
Dr. Mátics Róbert

Aggression: the right kind of violence
Dr. Mátics Róbert

Aggression: reconciliation
Dr. Mátics Róbert

Aggression: evolutionary implications
Dr. Mátics Róbert

Summary, questions, discussion
Dr. Mátics Róbert

Practices
Seminars
Exam topics/questions
no exam

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-TEP-T  SPATIAL EPIDEMIOLOGY**

**Course director:**  
**Dr. János Girán**, assistant professor  
Department of Public Health Medicine  
janos.giran@gmail.com

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 2  
Number of hours/semester: 8 lectures + 4 practices + 0 seminars = total of 12 hours  
Course headcount limitations (min.-max.): 5 – 25  
Prerequisites: none

**Topic**

Spatial epidemiology is the description and analysis of geographic variations in disease with respect to demographic, environmental, behavioral, socioeconomic, genetic, and infectious risk factors. This approach includes small-area analyses, encompassing disease mapping, geographic correlation studies, disease clusters, and clustering. The purpose of this course is to provide an overview of some spatial distribution-related environmental and social factors which impact the human health. During the practices, statistical concepts and methodologies will be illustrated through real examples. Beyond that, we interpret how the results of this kind of studies can be used for health protection purposes.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

Making up for missed classes  
There are no make-up classes.

**Reading material**

- **Obligatory literature**
  
- **Literature developed by the Department**
  
  On Neptun Meet Street
  
- **Notes**

- **Recommended literature**
  
  - Elliot, P.; Wakefield, J. C.; Best, N. G.; Briggs, D. J. (2000) Spatial epidemiology: methods and applications  
  - Richard S.Ostfeld Gregory E.Glass Felicia Keesing (2005) Spatial epidemiology: an emerging (or re-emerging) discipline

**Lectures**

1 History and development of spatial epidemiology  
   Dr. Girán János  
2 Geographical, demographical approaches economic and social approaches  
   Dr. Girán János  
3 Disease mapping models  
   Dr. Girán János  
4 Geographical correlation studies  
   Dr. Girán János  
5 Basics of clustering  
   Dr. Girán János  
6 Disease clusters and surveillance  
   Dr. Girán János  
7 Data Protection and Confidentiality  
   Dr. Girán János  
8 Exposure Assessment, Exposure Mapping  
   Dr. Girán János

**Practices**

1 Analysis of geographical-related data  
2 Analysis of climate-related data  
3 Analysis of socioeconomic-related data  
4 Analysis of social stratification-related data
Seminars

Exam topics/questions

On Neptun Meet Street

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Márovics Gergely Péter (QFV3Q5)
OAF-VB2-T  HOW TO TAKE THE EXAM IN MOLECULAR CELL BIOLOGY? 2

Course director: DR. GERGELY BERTA, assistant professor
Department of Medical Biology and Central Electron Microscope Laboratory • gergely.berta@aok.pte.hu

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 2

Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 100
Prerequisites: OAA-MB1-T completed + OAA-MB2-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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: 3.

Mid-term exams
Trial exams on every class, minimally 2 times for each student in the whole semester.

Making up for missed classes
No possibility to make up for missed classes.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
  József Széberényi-László Komáromy: Molecular Cell Biology Syllabus
  M. Pap (editor): Molecular Cell Biology Laboratory Manual
- Recommended literature

Lectures
Practices
Seminars
1  Trial exam
2  Trial exam
3  Trial exam
4  Trial exam
5  Trial exam
6  Trial exam
7  Trial exam
8  Trial exam
9  Trial exam
10 Trial exam
11 Trial exam
12 Trial exam

Exam topics/questions
See at: Molecular Cell Biology 2.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Balassa Tímea (SWM7LV), Balogh Bálint (WDZ6OM), Bogdán Ágnes (NHORSU), Brandt Barbara (IQ1RP0), Csabai Tímea Judith (F90OQR), Dr. Ábrahám Hajnalka Gabriella (WJUTX7), Dr. Bátor Judit (MPZG9D), Dr. Berta Gergely (Q6VP3K), Dr. Kemény Ágnes
(WJHNZP), Dr. Pap Marianna (A9VB0A), Dr. Sétáló György (SXBK5), Dr. Szeberényi József (DU7Y7C), Dr. Tarjányi Oktávia (PA4PXG), Feketény Dr. Kiss Katalin (RB5150), Németh Mária (PGBGW5), Schipp Renáta (GPDYI3), Stayer-Harci Alexandra (ALWLKJ), Varga Judit (NZCIT4)
VACCINATION, ANTI-VACCINATION MOVEMENTS: DO MORE HARM THAN GOOD

Course director: Dr. KATALIN SZENDI, assistant professor
Department of Public Health Medicine • szkata82@yahoo.co.uk

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 2

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 30
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

Vaccination belongs to one of the most successful modern health care programmes that decreased significantly the number of severe infectious diseases. In today’s world experts are unable to compete with the media. Several delusions circulate infiltrating the public opinion related to vaccines. The most susceptible target audience of these beliefs are the half-educated laymen who believe in the media created pseudoscience. The activity of stubborn anti-vaccine minorities can be dangerous because that may open up new chances of the spread of infectious diseases.

The objective of the course is to deepen the knowledge of vaccinations concerning the background, benefits, achievements and failures, and the course also serves as a thought provoking initiation for practitioners relating to possible actions against the anti-vaccination movements.

Conditions for acceptance of the semester

Participation in lectures and practicals is obligatory which is registered.
Absences should not exceed 15% (2x45 min). Otherwise signature of grade book is denied.

Mid-term exams

Making up for missed classes

There are no make-up classes.

Reading material

- Obligatory literature
- Literature developed by the Department
  Educational material uploaded on Neptun.
- Notes
- Recommended literature

Lectures

1. History of vaccines and anti-vaccination movements
   Dr. Szendi Katalin
2. Epidemiology of infectious diseases, morbidity and mortality rates before and after vaccine introduction. Is there any benefit of vaccination?
   Dr. Szendi Katalin
3. Epidemiological studies on vaccination, are there any at all?
   Dr. Szendi Katalin
4. Morbidity, mortality, incidence, prevalence. Statistics, data availability, official sources. Are there enough and reliable data to prove the effectiveness or safety of vaccines?
   Dr. Szendi Katalin
5. Groups of vaccinations. Why are they compulsory?
   Dr. Szendi Katalin
6. Types of vaccinations. Are there any unnecessary ones (e.g. BCG)? Is it possible that the only purpose of the pharmaceutical industry is to increase their profits?
   Dr. Szendi Katalin
7. The function of vaccination, types of immunity. Is artificial induction of immunity good for our immune system? Does it result in more benefits if the diseases are fought off in a natural way?
   Dr. Szendi Katalin
8 The efficiency of vaccines. Do the European countries with better health indicators also have better epidemiological situation than Hungary? Questions of herd immunity.
   Dr. Szendi Katalin

9 Vaccine effectiveness. Are there any positive health effects, or just does the government want to make us believe in counterfeit statistical data?
   Dr. Szendi Katalin

10 Vaccination safety, components. Are the ingredients in vaccines dangerous? Do they cause any harm to health? Diversity of conspiracy theories
   Dr. Szendi Katalin

   Dr. Szendi Katalin

12 Anti-vaccination activities in Hungary and abroad
   Dr. Szendi Katalin

Practices
Seminars
Exam topics/questions
Neptun
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Dr. Szendi Katalin (MRDJ71)
**OAE-AEM-T  SELL YOURSELF! - PRESENTATION TECHNIQUES**

**Course director:**

**DR. JÓZSEF LÁSZLÓ SZENTPÉTERI**, honorary professor

Institute of Transdisciplinary Discoveries - Director of Innovation, Institute of Physiology • joepetersburger@gmail.com

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 3</th>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong> 20 lectures + 0 practices + 0 seminars = total of 20 hours</td>
</tr>
<tr>
<td><strong>Course headcount limitations (min.-max.):</strong> 5 – 20</td>
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**Prerequisites:** none

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**Topic**

Improving students’ presentation skills.

The aim of the course: theoretical and practical development of students’ verbal, non-verbal and visual presentation abilities.

The course provides aids through following key aspects for effective communication:

- Structure of presentation
- Dynamics of presentation
- Basic presentation techniques
- Methods of effective persuasion
- Audience survey
- Questions, handling objections
- Verbal content
- Non-verbal communication / body language
- Raising awareness, maintaining the feedback rating
- The use of visual aids
- Slideshow planning and preparation
- Guidelines for charts, graphics preparation

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

All students must fill a questionnaire at the end of each class.

**Making up for missed classes**

There is no possibility to substitute a missing course. Catalog proving the presence should be filled and signed at each lecture. Course cannot be continued after missing 25% of the lectures.

**Reading material**

- **Obligatory literature**

  Literature is not compulsory, but all books in recommended literature list (see below) contain very useful information to provide a more effective implementation of the objectives of the course.

- **Literature developed by the Department**

  Course material will be available in Microsoft PowerPoint (.ppt) format after course registration.

- **Notes**

  See „Recommended literature”

- **Recommended literature**

  Stephen R. Covey: The 7 Habits of Highly Effective People, Simon & Schuster UK Ltd., 1999

**Lectures**

   Dr. Szentpéteri József László

   Dr. Szentpéteri József László
Basic techniques of the performance (understandable language, understandable volume, awareness-raising dynamism, open communication, free talk)
Dr. Szentpéteri József László

Effective communication and aids: avoidance of foreign words, simple sentences, intense words, rhetorical pause, stimulate debate, questioning; Metaphors, similes, dressing of numbers, repeating
Dr. Szentpéteri József László

The basic techniques of persuasion. The audience survey, keeping it under control.
Dr. Szentpéteri József László

Packaging the content. Questions, handling objections. Tools for arousing attention.
Dr. Szentpéteri József László

Nonverbal tools of the presenter I.: Appearance. Stage presence. Movement in the available space.
Dr. Szentpéteri József László

Nonverbal tools of the presenter II.: the face, hands gestures, posture, and their interpretation.
Dr. Szentpéteri József László

Nonverbal tools of the presenter III.: the face, hands gestures, posture, and their interpretation.
Dr. Szentpéteri József László

Proper assessment of the audience reaction based on their non-verbal signals. Proper responses.
Dr. Szentpéteri József László

Using visual aids I.: How PSE (Picture Superiority Effect) can help to increase the effectiveness of the presentation?
Dr. Szentpéteri József László

Using visual aids II.: The design of the slide show, preparation.
Dr. Szentpéteri József László

Using visual aids III.: Composition guidelines. Acquisition of images, correct and lawful use. Using animations.
Dr. Szentpéteri József László

Dr. Szentpéteri József László

Using visual aids V.: Guidelines for the duration of each slide. The use of visual material, correct chronology.
Dr. Szentpéteri József László

Using visual aids VI.: videos, music and pictorial material. Overview of different presentation platforms (PowerPoint, Keynote, Prezi)
Dr. Szentpéteri József László

Preparation methods: Text writing, design, technology, the specific room regarding with the expected audience.
Dr. Szentpéteri József László

Tools to raise awareness I.: the first 30 seconds in different genres of performing arts
Dr. Szentpéteri József László

Tools to raise awareness II.: The use of enhancement in different genres of performing arts
Dr. Szentpéteri József László

Performance analysis I.: advertisements, TED lectures, Steve Jobs
Dr. Szentpéteri József László

Practices
Seminars
Exam topics/questions
All students will present in front of the instructor and fellow students for up to 5 minutes duration. Everyone is free to choose their own topic.

Both the instructor and the audience evaluating the presentation on pre-built scorecards up to 3 minutes duration.

Evaluation sheet contains general and topic-specific questions.

General questions are practically certain criteria, which should be evaluated from 1 to 10, where rate „1” is the worst and „10” is the best.

General issues are as follows:
1. Welcoming audience
2. Link building and maintaining relationship with the audience
3. Arousing the interest (the first 30 seconds). In other words, has the presenter attracted your attention so much, that you would follow the complete presentation? (Themes, raising questions, humor, etc.).
4. Was the presentation interesting enough, that you want to know more about the topic?
5. The verbal performance of the speaker (Speech, volume, avoiding foreign words, etc.).
6. Nonverbal performance of the speaker (clothing, gestures, „theatrical” behavior)
7. Using Technical Aids - if any (did they fit and whether they helped the understanding).
8. Use of visual aids - if any (did they fit and whether they helped the understanding).
9. Overall, how would you rate the show?

The subject-specific issues are not public; they will be completed by the instructor based on the submitted text and will be available on the day of the exam only.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject Participants
**OAE-AFN-T  ANAMNESEERHEBUNG 1.**

**Course director:**  
Renáta Halász, language teacher  
Department of Languages for Specific Purposes • renata.halasz@aok.pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 3

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

**Course headcount limitations (min.-max.):**  
2 – 15  

**Prerequisites:** none

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**Topic**

We wish to give an insight into medical communication in German, focusing on patient-doctor communication. It is a seminar enhancing and improving the oral skills of the students touching upon current issues, debates related to medical communication. The main objective of the course is to teach how to take the patients’ medical history.

**Conditions for acceptance of the semester**

Participation is obligatory. Maximum of missed classes: 20%; up to 20% the absence can be accepted by the teacher of the course. Above 20%, the course is not completed.

**Mid-term exams**

Evaluation of students’ oral performance: performance is evaluated with a total of 100 points. The course is completed with 51 points: 0-50: fail, 51-63: satisfactory, 64-76: average, 77-89: good, 90-100: excellent

**Making up for missed classes**

No make-up classes if absence exceeds 20% of the total classes.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - Teaching material is based on certain chapters of the book: Füeßl, H., S., Middeke, M., 2016: Anamnese und Klinische Untersuchung
- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

1 Einleitung des Anamnesegesprächs und Herstellung der Beziehung  
2 Teile der Anamnese  
3 Fragen sind das Handwerkszeug der Anamnese  
4 Fragetypen  
5 Aktuelle Anamnese  
6 Leitsymptom  
7 Schmerzanamnese  
8 Systemüberblick  
9 Frühere Anamnese mit Bezug zum Leitsymptom  
10 Frühere Erkrankungen  
11 Frühere Krankenhausaufenthalte  
12 Chronische Krankheiten  
13 Medikamentenanamnese  
14 Medikamentengruppen  
15 Risikoanamnese  
16 Familienanamnese  
17 Test 1  
18 Soziale Anamnese  
19 Krankheitsbilder, Symptome  
20 Test 2  
21 Gespräche mit Simulationspatienten  
22 Gespräche mit Simulationspatienten 2.  
23 Evaluation  
24 Evaluation
Exam topics/questions

Test papers are put together by the respective teachers of the course

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Kanizsainé Kránitz Rita (PSGNUM), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Szelényi András (XIXSTL), Dr. Zrínyi Andrea (M7TPJD), Halász Renáta (VGSSXR), Hambuchné Dr. Kőhalmi Anikó (VZFH04), Meiszter Erika (I1RLYS), Ronczykné Berta Anikó (CJZOFU)
**OAE-APK-T  PREPARATION OF ANATOMICAL DEMONSTRATION MATERIAL**

**Course director:**

**DR. PÉTER KISS**, associate professor

Department of Anatomy • peter.kiss@aok.pte.hu

1 credit • midterm grade • Elective subject • both semesters • recommended semester: 3

**Number of hours/semester:**

0 lectures + 12 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 1 – 8

**Prerequisites:** OAA-AA1-T completed + OAA-SF1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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**

Maximum of 15% absence allowed

**Mid-term exams**

Making up for missed classes

Absences are individually made up.

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
- **Notes**
- Recommended literature

**Lectures**

**Practices**

2. Dissection of specimen.
3. Dissection of specimen.
4. Dissection of specimen.
5. Dissection of specimen.
6. Dissection of specimen.
7. Dissection of specimen.
8. Dissection of specimen.
10. Dissection of specimen.
11. Dissection of specimen.

**Seminars**

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Kiss Péter (EF0MSZ)
OAE-BKF-T  BIOCHEMISTRY - QUESTIONS AND ANSWERS

Course director: DR. ZOLTÁN BERENTE, associate professor
Department of Biochemistry and Medical Chemistry • zoltan.berente@aok.pte.hu

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

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 200 Prerequisites: none

Topic
The course is aimed to support the successful accomplishment of the semester exam of the compulsory course „Biochemistry” (and in part that of the final exam „Medical Biochemistry”).
In the classroom the brief summary of the theory related to the actual topic will be followed by discussing explicit questions (multiple choice and open questions as well) in order to deepen the understanding of the material along with the preparation for the written exam.
In order to help preparation the topics of this course will discuss the lectures and practices of the main course, but shifted in time.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Multiple choice test in the last week.

Making up for missed classes
On the judgement of the course director

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  T.A. Swanson, S.I. Kim, M.J. Glucksman: Biochemistry, Molecular Biology & Genetics, 5th edition, Lippincott Williams & Wilkins 2010

Lectures
1  Introduction
   Dr. Berente Zoltán
2  Biomolecules: Building Blocks of Life
   Dr. Berente Zoltán
3  Protein Structure and Function
   Dr. Agócs Attila
4  Enzymes
   Dr. Agócs Attila
5  Enzyme Inhibition 1
   Dr. Berente Zoltán
6  Enzyme Inhibition 2
   Dr. Berente Zoltán
7  Carbohydrate Degradation
   Dr. Agócs Attila
8  Carbohydrate Biosynthesis
   Dr. Agócs Attila
9  Regulation of Carbohydrate Metabolism
   Dr. Bognár Zita
10 Biochemical Background of the Disorders of Carbohydrate Metabolism
    Dr. Bognár Zita
11 Lipid Degradation
    Dr. Tapodi Antal

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| 12 | Lipid Biosynthesis  
  Dr. Tapodi Antal |
| 13 | Regulation of Lipid Metabolism  
  Dr. Berente Zoltán |
| 14 | Biochemical Background of the Disorders of Lipid Metabolism  
  Dr. Berente Zoltán |
| 15 | Amino Acid Metabolism  
  Dr. Szabó Alíz |
| 16 | Nucleotide Metabolism  
  Dr. Szabó Alíz |
| 17 | DNA Replication and Repair  
  Dr. Tapodi Antal |
| 18 | Transcription, Viruses, Retroviruses, Small RNA Molecules  
  Dr. Tapodi Antal |
| 19 | Protein Synthesis  
  Dr. Berente Zoltán |
| 20 | Regulation of Gene Expression  
  Dr. Berente Zoltán |
| 21 | Hormonal Regulation of Metabolism 1  
  Dr. Berente Zoltán |
| 22 | Hormonal Regulation of Metabolism 2  
  Dr. Berente Zoltán |
| 23 | Test  
  Dr. Berente Zoltán |
| 24 | Test  
  Dr. Berente Zoltán |

**Practices**

**Seminars**

**Exam topics/questions**

The semester test questions will be selected from the problems discussed in the classroom.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
**OAE-DM1-T  DEMONSTRATOR ACTIVITY 1**

**Course director:**

DR. LÁSZLÓ JÓZSEF CZOPF, associate professor
1st Department of Internal Medicine • laszlo.czopf@aok.pte.hu

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 3</th>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong> 0 lectures + 24 practices + 0 seminars = total of 24 hours</td>
</tr>
<tr>
<td><strong>Course headcount limitations (min.-max.):</strong> 1 – 300</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> none</td>
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</tbody>
</table>

**Topic**

This course gives support and acknowledgement for students performing documented and successful supervised teaching activities and taking an active part in organizing courses. The subjects can be taken up in eight semesters (in a total value of 16 credits).

**Conditions for acceptance of the semester**

Students have to register every semester as demonstrators, should provide proof of previous demonstrator activity, and the semester will be signed on the basis of at least 24 hours of teaching or organizing activity. The grades will be given according to the Code of Demonstrators with additional requirements, that you can reach using the following links: Code of Demonstrator Students:

https://docs.google.com/document/d/1xkkyeRdZcDphmqWEkpON0SQf34MppBBJqogG09fd8Rw/edit?usp=sharing

Faculty Home Page of the Circle of Demonstrator Students (DDK):


**Mid-term exams**

At least two midsemester tests should be successfully completed to pass.

**Making up for missed classes**

There are no absences accepted from the 24 hours demonstrator activity.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

The topics of the tests depend on the specific course of the demonstrator activity.

**Information** — The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Czopf László József (BAVD1M), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Sebők Judit (GLM10L), Dr. Tamás Andrea (F7QM8G), Dr. Ujvári Balázs (EN1LY9)
**OAE-EFI-T  ELECTROPHYSIOLOGY**

**Course director:**

**D R. GÁBOR JANDÓ, associate professor**

Institute of Physiology  •  gabor.jando@aok.pte.hu

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

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 1 – 200

Prerequisites: OAA-B1I-T completed + OAA-BEB-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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.

**Mid-term exams**

Exam: oral exam

**Making up for missed classes**

Not possible

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**

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

- **Notes**

- **Recommended literature**

**Lectures**

1 1 Dr. Jandó Gábor
2 1 Dr. Jandó Gábor
3 2 Dr. Jandó Gábor
4 2 Dr. Jandó Gábor
5 3 Dr. Jandó Gábor
6 3 Dr. Jandó Gábor
7 4 Dr. Jandó Gábor
8 4 Dr. Jandó Gábor
9 5 Dr. Jandó Gábor
10 5 Dr. Jandó Gábor
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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Jándó Gábor (O8Z2A8)
HUNGER, SATIETY AND DISTURBANCES OF BODY WEIGHT REGULATION

Course director: Dr. László Lénárd, professor emeritus
Institute of Physiology • laszlo.lenard@aok.pte.hu

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

Course headcount limitations (min.-max.): 5 – 25

Prerequisites: OAA-BI2-T completed + OAA-MB2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Absence from no more than 25% of the lectures.

Mid-term exams

Written exams.

Making up for missed classes

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Notes taken at the lectures.
- Recommended literature

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 I

2 Peripheral and central mechanisms of body weight regulation. Dr. Lénárd László I

3 Endocrine mechanisms: the role of different hormones. Dr. Lénárd László I

4 Body weight loss, obesity. Long run pathological consequences of obesity. Dr. Lénárd László I

5 Hunger and satiety. Motivational mechanisms. Overeating, rejection. Dr. Lénárd László I

6 Hypothalamic dual centers. The role of limbic system in hunger and satiety. Dr. Lénárd László I

7 Peripheral glucose related signals. The central glucose monitoring system. Dr. Lénárd László I

8 Food rewarded learning, the role of reinforcement. Aversive learning, the role of conditioned taste aversion in feeding habits. Dr. Lénárd László I

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. 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 I

10 Orexigenic and anorexigenic neuropeptides. Dr. Lénárd László I

11 The role of the central angiotensinergic system in drinking and hydromineral balance. Dr. Lénárd László I

12 Childhood obesity and cognitive processes. Anorexia nervosa, bulimia and binge eating. Clinical relevance of animal experiments Dr. Lénárd László I
Practices
Seminars
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
HEALTH PSYCHOLOGY

Course director: DR. JÁNOS KÁLLAI, professor
Department of Behavioural Sciences • janos.kallai@aok.pte.hu

2 credit • midterm grade • Elective subject • both semesters • recommended semester: 3

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

Course headcount limitations (min.-max.): 5 – 16
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
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 burnout and other professional-related risks.

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

Mid-term exams
Presentation of a topic + written final test.

Making up for missed classes
Additional homework or presentation.

Reading material
- Obligatory literature
- Literature developed by the Department
  Presentations, handouts, publications, additional materials, available on Neptun.
- Notes
- Recommended literature

Lectures
Practices
Seminars
1 Theories and development of health. Health believes and attributions. Healthy personality.
2 Theories and development of health. Health believes and attributions. Healthy personality.
3 Concepts of health psychology, positive thinking
4 Concepts of health psychology, positive thinking
5 Stress and health. Primary prevention
6 Stress and health. Primary prevention
7 Coping, problem-focused and emotion-focused coping
8 Coping, problem-focused and emotion-focused coping
9 Ageing, life-span and health
10 Ageing, life-span and health
11 Gender issues, culture and health
12 Gender issues, culture and health
13 Relaxation and other stress-management methods
14 Relaxation and other stress-management methods
15 Adjustment to chronic illness. Patients’ understanding and compliance
16 Adjustment to chronic illness. Patients’ understanding and compliance
17 Quality of life and psychological interventions in chronic illness
18 Quality of life and psychological interventions in chronic illness
19 Hospitalization and stressful medical procedures
20 Hospitalization and stressful medical procedures
21 Health of medical students, professional socialization as a source of stress
22 Health of medical students, professional socialization as a source of stress
23 Health of health care professionals: prevention of burn out.
24 Health of health care professionals: prevention of burn out.

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Kállai János (E7HZAN), Dr. Varga József (Q1NPTA)
**OAE-H3A-T  MEDICAL HUNGARIAN 3A - BASICS OF MEDICAL COMMUNICATION**

**Course director:** DR. VILMOS WARTA, associate professor  
Department of Languages for Specific Purposes  
vilmos.warta@aok.pte.hu

- **2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 3**
- **Number of hours/semester:** 0 lectures + 0 practices + 24 seminars = total of 24 hours
- **Course headcount limitations (min.-max.):** 3 – 25

**Prerequisites:** OAE-H2A-T completed + OAE-H3B-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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 25% 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.

**Mid-term exams**

Making up for missed classes

To be discussed with the course tutor.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - Mária Győrffy: English for Doctors, Idióma Bt., Pécs, 2001 - can be purchased in the Department
- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

1. Family History, Social History, Previous Diseases
2. Family History, Social History, Previous Diseases
3. Complaint, Pain
4. Complaint, Pain
5. Headache, Vertigo, Perspiration, Nausea and Vomiting
6. Headache, Vertigo, Perspiration, Nausea and Vomiting
7. Vision, Dyspnea, Cough
8. Vision, Dyspnea, Cough
9. Heart Complaints, Appetite
10. Vision, Dyspnea, Cough
11. Stool, Urine
12. Stool, Urine
13. Shivering, Fever, Oedema, Medications, Blood
14. Shivering, Fever, Oedema, Medications, Blood
15. Frequent Diseases, Medical Instructions
16. Frequent Diseases, Medical Instructions
17. Gynaecology, Urology
18. Gynaecology, Urology
19. Surgery and Traumatology, Orthopaedic Surgery
20. Surgery and Traumatology, Orthopaedic Surgery
21. Consolidation, Oral Test
22. Consolidation, Oral Test
23. Consolidation, Oral Test
24. Consolidation, Oral Test
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SIYRAV), Egyed Csilla Klára (Z1BN90), Eklicsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántókné Dr. Csongor Alexandra (UDKY0J)
OAE-H3B-T  MEDICAL HUNGARIAN 3B - MEDICAL COMMUNICATION IN PRACTICE

Course director: DR. VILMOS WARTA, associate professor
Department of Languages for Specific Purposes • vilmos.warta@aok.pte.hu

2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 3

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 25 Prerequisites: OAE-H3A-T parallel + OAE-H2B-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 25% 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.

Mid-term exams
Making up for missed classes
To be discussed with the course tutor.

Reading material
- Obligatory literature
- Literature developed by the Department
  Mária Győrffy: English for Doctors, Idióma Bt., Pécs, 2001 - can be purchased in the Department
- Notes
- Recommended literature

Lectures
Practices
Seminars

1. Listening Comprehension and Speaking Skills: Family History, Social History, Previous Diseases
2. Listening Comprehension and Speaking Skills: Family History, Social History, Previous Diseases
3. Listening Comprehension and Speaking Skills: Complaint, Pain
4. Listening Comprehension and Speaking Skills: Complaint, Pain
5. Listening Comprehension and Speaking Skills: Headache, Vertigo, Perspiration, Nausea and Vomiting
6. Listening Comprehension and Speaking Skills: Headache, Vertigo, Perspiration, Nausea and Vomiting
7. Listening Comprehension and Speaking Skills: Vision, Dyspnea, Cough
8. Listening Comprehension and Speaking Skills: Vision, Dyspnea, Cough
9. Written Test 1
10. Oral Test 1
11. Listening Comprehension and Speaking Skills: Heart Complaints, Appetite
12. Listening Comprehension and Speaking Skills: Heart Complaints, Appetite
13. Listening Comprehension and Speaking Skills: Stool, Urine
14. Listening Comprehension and Speaking Skills: Stool, Urine
15. Listening Comprehension and Speaking Skills: Shivering, Fever, Oedema, Medications, Blood
16. Listening Comprehension and Speaking Skills: Shivering, Fever, Oedema, Medications, Blood
17. Listening Comprehension and Speaking Skills: Frequent Diseases, Medical Instructions
18. Listening Comprehension and Speaking Skills: Frequent Diseases, Medical Instructions
19. Written Test 2
20. Oral Test 2
21. Consolidation, Semester Test
22. Consolidation, Semester Test
23. Consolidation, Semester Test
24. Consolidation, Semester Test
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SIYRAV), Egyed Csilla Klára (Z1BN90), Eklicsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
OAE-N69-T  ANAMNESEEERHEBUNG 2
Course director: RENÁTA HALÁSZ, language teacher
Department of Languages for Specific Purposes • renata.halasz@aok.pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 3
Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 2 – 15
Prerequisites: OAE-AFN-T completed

Topic
We wish to give an insight into medical communication in German, focusing on patient-doctor communication. It is a seminar enhancing and improving the oral skills of the students touching upon current issues, debates related to medical communication. The main objective of the course is to teach how to take the patients’ medical history.

Conditions for acceptance of the semester
Participation is obligatory. Maximum of missed classes: 20%; up to 20% the absence can be accepted by the teacher of the course. Above 20%, the course is not completed.

Mid-term exams
Evaluation of students’ oral performance: performance is evaluated with a total of 100 points. The course is completed with 51 points: 0-50: fail, 51-63: satisfactory, 64-76: average, 77-89: good, 90-100: excellent

Making up for missed classes
No make-up classes if absence exceeds 20% of the total classes.

Reading material
- Obligatory literature
- Literature developed by the Department
  Teaching material is based on certain chapters of the book: Füeßl, H., S., Middeke, M., 2016: Anamnese und Klinische Untersuchung
- Notes
- Recommended literature

Lectures
Practices
Seminars
1 Grundlagen der Kommunikation
2 Wahrnehmung und Gestaltung der kommunikativen Situation
3 Internistische Anamneseerhebung - sprachliche Grundlagen
4 Neurologische Anamneseerhebung - sprachliche Grundlagen
5 Gynäkologische Anamneseerhebung - sprachliche Grundlagen
6 Gynäkologische Anamneseerhebung - sprachliche Grundlagen
7 Dokumentation des Gesprächs
8 Patientenvorstellung
9 Gesprächstechniken
10 Gesprächstechniken
11 WWSZ-Techniken
12 Umgang mit Emotionen und mit Aggressionen
13 Vermitteln von Informationen
14 Schlechte Nachrichten überbringen
15 "Heikle" Themen: Sexualität, Alkohol, Suchtverhalten
16 "Heikle" Themen: Sexualität, Alkohol, Suchtverhalten
17 Test 1
18 Gespräch mit Angehörigen von Patienten mit Demenzerkrankungen
19 Gespräch mit Angehörigen von kranken Kindern
20 Test 2
21 Gespräche mit Simulationspatienten
22 Gespräche mit Simulationspatienten 2.
23 Evaluation
24 Evaluation
Exam topics/questions

Test papers are put together by the respective teachers of the course

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Kanizsainé Kránitz Rita (PSGNUM), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Szelényi András (XIXSTL), Dr. Zrínyi Andrea (M7TPJD), Halász Renáta (VGSSXR), Hambuchné Dr. Köhalmi Anikó (VZFH04), Meiszter Erika (I1RLYS), Törökné Teszárik Éva Aranka (ARKZG8)
Course director: DR. TIBOR ERTL, professor

Undergraduate Research • tibor.ertl@aok.pte.hu

OAE-TD1-T  STUDENT PROJECT RESEARCH 1

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 3

Number of hours/semester: 0 lectures + 20 practices + 0 seminars = total of 20 hours

Course headcount limitations (min.-max.): 1 – 300  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 enrol 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 enrol 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. For detailed requirements please read the following document: http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng

Mid-term exams

Making up for missed classes

Not applicable.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Not applicable

Lectures
Practices
Seminars

Exam topics/questions

Not applicable

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Balogh Péter (KVAPT7)
OAF-ANH-T  BORDERLINE ANATOMY

Course director: DR. DÓRA REGLŐDI, professor
Department of Anatomy • dora.reglodi@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 150  Prerequisites: OAA-AA1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The course offers insight into other aspects of anatomy, such as artistic aspects, historical background of anatomy. The lectures will also concentrate on the basic anatomical information, which are required for other non-medical jobs (trainer, physiotherapist, veterinarian). Students also gain insight into other anatomy teaching systems.
The course will be held in the 1-12 weeks of the semester, 1 lecture/week.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
At the end of the course, students have to write an exam test, but the test can be replaced by making a PowerPoint presentation about a freely elected borderline anatomy topic.

Making up for missed classes
It is not possible to catch up the lectures

Reading material
- Obligatory literature
  http://an-server.pote.hu
- Literature developed by the Department
  http://an-server.pote.hu
- Notes
  http://an-server.pote.hu
- Recommended literature
  http://an-server.pote.hu

Lectures
1  Ossuaries, Anatomy Museums. Anatomy in Art
   Dr. Reglődi Dóra
2  Neuroesthetics - Edges of neurosciences
   Dr. Reglődi Dóra
3  Cajal and anatomical art. Anatomy teaching at other universities
   Dr. Tamás Andrea
4  Anatomy of body modifications. Dissection of a painting - Rembrandt - Anatomy lesson of dr. Tulp
   Dr. Reglődi Dóra
5  Anatomy on the battlefield
   Dr. Farkas József
6  "OVER THE TOP - extreme anatomic performances in animal kingdom"
   Dr. Reglődi Dóra
7  Anatomy on duty
   Dr. Reglődi Dóra
8  Walks in the morgue. Body snatchers
   Dr. Reglődi Dóra
9  Heavy metal Anatomy
   Dr. Kiss Péter
10 Anatomy in art
    Dr. Reglődi Dóra
Practices
Seminars
Exam topics/questions
http://an-server.pote.hu

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Presentation of Case Reports in English

Course director: Dr. Vilmos Warta, associate professor
Department of Languages for Specific Purposes • vilmos.warta@aok.pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 3

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

Course headcount limitations (min.-max.): 3 – 25

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The course intends to prepare participants to compose, understand and give biomedical case report presentations in English.

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.

Mid-term exams
presentation of a medical case report in English

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

Reading material
- Obligatory literature
- Literature developed by the Department
  Warta Vilmos: Writing Up Medical Case Reports, exe-learning, 2013
- Notes
  Warta Vilmos: Writing Up Medical Case Reports, 1st edition, 2013
- Recommended literature

Lectures
1. Introduction into Medical Case Reports
   Dr. Warta Vilmos
2. Introduction into Medical Case Reports
   Dr. Warta Vilmos
3. Communication Purpose
   Dr. Warta Vilmos
4. Discourse Structure of Medical Case Reports
   Dr. Warta Vilmos
5. Verb Tenses in Medical Case Reports
   Dr. Warta Vilmos
6. Verb Tenses in Medical Case Reports
   Dr. Warta Vilmos
7. Voice in Medical Case Reports
   Dr. Warta Vilmos
8. Voice in Medical Case Reports
   Dr. Warta Vilmos
9. Mode and Politeness Strategies
   Dr. Warta Vilmos
10. Mode and Politeness Strategies
    Dr. Warta Vilmos
11. Vocabulary and Lexis
    Dr. Warta Vilmos
12. Vocabulary and Lexis
    Dr. Warta Vilmos
13. Presenting Medical Case Reports
    Dr. Warta Vilmos
14 Presenting Medical Case Reports  
Dr. Warta Vilmos  
15 Case Presentation 1  
Dr. Warta Vilmos  
16 Case Presentation 2  
Dr. Warta Vilmos  
17 Case Presentation 3  
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18 Case Presentation 4  
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19 Case Presentation 5  
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20 Case Presentation 6  
Dr. Warta Vilmos  
21 Case Presentation 7  
Dr. Warta Vilmos  
22 Case Presentation 8  
Dr. Warta Vilmos  
23 Case Presentation 9  
Dr. Warta Vilmos  
24 Case Presentation 10  
Dr. Warta Vilmos  

Practices  
Seminars  
Exam topics/questions  

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  
Participants  
Dr. Warta Vilmos (SJYRAV)
OAF-BK5-T  FROM THE CHEMISTRY EXAM TO THE FINAL EXAM IN BIOCHEMISTRY

Course director:  DR. PÉTER JAKUS, assistant professor
Department of Biochemistry and Medical Chemistry  peter.jakus@aok.pte.hu

2 credit • midterm grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester:  24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.):  1 – 100

Prerequisites:  OAA-BEB-T completed + OAA-BKA-T parallel

Topic
The goal of the current subject is preparing dentistry and medical students for the final exam (in Chemistry and Biochemistry). The major goal of the subject is to offer dentistry students - mainly those who began their studies in 2016** - an integrative view of necessary knowledge in general, inorganic and organic chemistry, and biochemistry. The course highlights the relationships between topics covered by subjects 'Chemistry for Dentistry Students', 'Introduction to Biochemistry for Dentistry Students' and 'Biochemistry for Dentistry Students'. The course gives opportunity for both dentistry and medical students to raise questions and practice problem solving. The program also covers integrative regulation and relationships of metabolism.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Midterm test at the 10th week.

Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
  Nagy V.: Experiments is Med. Chem. lab manual, 2017
  Nagy V.: Introduction to Biochemistry. lab manual, 2017
- Recommended literature

Lectures
1  From Le’Chatelier to homeostasis. Osmolarity, pH in biochemistry.
   Dr. Jakus Péter
2  From electron configuration to acidic strength; Buffer systems; From galvanic to mitochondria. Chemical properties of biomolecules.
   Dr. Jakus Péter
3  From order to disorder. Why can life exist in the universe? Illustrative thermodynamics.
   Dr. Jakus Péter
4  From reaction rate to enzyme activity. From enzyme inhibition to medication therapy.
   Dr. Jakus Péter
5  Bioactive compounds. Relationship between structure and effect.
   Dr. Jakus Péter
6  Organic Chemistry, reactions: From the test tube to the cell to the dentures.
   Dr. Jakus Péter
7  "Successful Hunting I.”: From glyceraldehyde to carbohydrate degradation.
   Dr. Jakus Péter
   Dr. Jakus Péter
   Dr. Bognár Zita
10 Hungaricums: Citrate cycle, "pálinka". Fatty liver. Control the citrate circle.
    Dr. Bognár Zita
"Hunting": Jogging better than sprinting? Lipid degradation B oxidation. Misconceptions about muscle fever.
Dr. Bognár Zita

"And when we’re not hunting": From carbohydrates to fatty acids to obesity and arteriosclerosis.
Dr. Bognár Zita

Carbohydrates: From glyceraldehyde to carbohydrate degradation. Aspects of regulating carbohydrate metabolism.
Dr. Bognár Zita

Aspects of fat metabolism regulation.
Dr. Bognár Zita

Respiratory chain and associated reactions. Mitochondrial transport processes and ATP synthesis.
Dr. Debreceni Balázs

Biochemical Mathematics: How Many ATPs Are Created When Degrading Some Molecules?
Dr. Debreceni Balázs

Proteins: From glycine through protein function to urea. Importance of nucleic acid metabolism.
Dr. Debreceni Balázs

Importance of nucleic acid metabolism. Metabolic Diseases.
Dr. Debreceni Balázs

Towards future biochemistry: new RNA and DNA mechanisms, their regulation.
Dr. Debreceni Balázs

Genetically Modified New World: PCR, Cloning, CRISPR.
Dr. Debreceni Balázs

"Telecommunications" in the cell: signaling pathways.
Dr. Debreceni Balázs

Through hormones to gene expression.
Dr. Debreceni Balázs

Sample Test.
Dr. Debreceni Balázs

Discussion of the sample test.
Dr. Debreceni Balázs

Practices

Seminars

Exam topics/questions
http://aok.pte.hu/en/egyseg/index/20

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
### OAF-BMS-T Biomarkers

**Course director:** Dr. Zoltán Gyöngyi, senior research fellow  
Department of Public Health Medicine • zoltan.gyongyi@aok.pte.hu

| 2 credit • midterm grade • Optional subject • both semesters • recommended semester: 3 |

**Course headcount limitations (min.-max.):**  
3 – 30  
**Prerequisites:** none

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

**Topic**

When biomarkers are mentioned, we think primarily of molecules, but the physical, physiological changes are also included. Their applicability is wide ranged. The risk of disease, its early warning, diagnostics, and tracking the success of therapy are also possible by biomarkers. Nutritional status, alcohol and drug use are also detectable with them. The measurement methods are ranged from simple to complex laboratory procedures. Volatile molecules belong to a special group of biomarkers. These can be detected by olfactory (human, animal or artificial nose) or biochemical techniques. The goal of this course is to familiarize students with biomarkers from simple everyday use to special, less known opportunities.

**Conditions for acceptance of the semester**

Maximum of 25% absence allowed

**Mid-term exams**

There is a final test only on the last lecture. In case of absence, there can be a personal consultation.

**Making up for missed classes**

**Reading material**

- **Obligatory literature**

  - Literature developed by the Department
    
  Slides on Neptun.

- **Notes**

- **Recommended literature**

**Lectures**

| 1 | Definition of Biomarkers  
Dr. Gyöngyi Zoltán |
| 2 | Nutritional Biomarkers  
Dr. Gyöngyi Zoltán |
| 3 | Biomarkers of Autism and Hyperactivity  
Dr. Gyöngyi Zoltán |
| 4 | Biomarkers of Smoking  
Dr. Gyöngyi Zoltán |
| 5 | Biomarkers of Alcohol Use  
Dr. Gyöngyi Zoltán |
| 6 | Biomarkers of Drug Use  
Dr. Gyöngyi Zoltán |
| 7 | Biomarkers of Environmental Harm  
Dr. Gyöngyi Zoltán |
| 8 | Biomarkers of Occupational Diseases  
Dr. Gyöngyi Zoltán |
| 9 | Biomarkers of Personal Performance  
Dr. Gyöngyi Zoltán |
| 10 | Epigenetic Biomarkers  
Dr. Gyöngyi Zoltán |
| 11 | Biomarkers of Individual Susceptibility  
Dr. Gyöngyi Zoltán |
| 12 | Biomarkers of Genetic Diseases  
Dr. Gyöngyi Zoltán |
| 13 | Biomarkers of Infectious Diseases  
Dr. Gyöngyi Zoltán |
| 14 | Biomarkers of Infectious Diseases  
Dr. Gyöngyi Zoltán |
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Instructor</th>
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</thead>
<tbody>
<tr>
<td>Biomarkers of Cardiovascular Diseases</td>
<td>Dr. Gyöngyi Zoltán</td>
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<tr>
<td>Biomarkers of Cardiovascular Diseases</td>
<td>Dr. Gyöngyi Zoltán</td>
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<tr>
<td>Cancer Biomarkers</td>
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<td>Cancer Biomarkers</td>
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<tr>
<td>Volatile Molecules as Biomarkers</td>
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<td>Volatile Molecules as Biomarkers</td>
<td>Dr. Gyöngyi Zoltán</td>
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<tr>
<td>Latest Technology in Biomarker detection</td>
<td>Dr. Gyöngyi Zoltán</td>
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<td>Latest Technology in Biomarker detection</td>
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<tr>
<td>Validation of Biomarkers</td>
<td>Dr. Gyöngyi Zoltán</td>
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<tr>
<td>Ethical Questions of Using Biomarkers</td>
<td>Dr. Gyöngyi Zoltán</td>
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</table>

**Practices**

**Seminars**

**Exam topics/questions**

- Biomarkers of Environmental Harm
- Biomarkers of Occupational Diseases
- Biomarkers of Individual Susceptibility
- Epigenetic Biomarkers
- Nutritional Biomarkers
- Biomarkers of Physical Activity
- Smoking Biomarkers
- Alcohol Biomarkers
- Drug Use Biomarkers
- Biomarkers of Genetic Diseases
- Biomarkers of Infectious Diseases
- Biomarkers of Cardiovascular Diseases
- Cancer Biomarkers
- Volatile Molecules as Biomarkers
- Validation of Biomarkers
- Ethical Questions of Biomarkers

*Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject*

**Participants**
OAF-EBK-T FOOD SAFETY AND CRISIS SITUATIONS

Course director: DR. TIMEA VARJAS, assistant professor
Department of Public Health Medicine • vtini_68@yahoo.com

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 4 – 30 Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

Although food legislation and legal background is strict in EU some food safety crises and emergencies occur we can hear just a few word in the media about. This course „pulls the veil“ of the background, causes and concealed information of food safety crises. Topics are about the most interesting and important information of these situations.

Conditions for acceptance of the semester

Absences should not exceed 15% of lectures and practicals (2x45 min). Otherwise signature of grade book is denied.

Mid-term exams

Examination: written test

Making up for missed classes

based on individual consideration

Reading material

- Obligatory literature
- Literature developed by the Department
  PPT-presentations (Neptun)
- Notes
- Recommended literature

Lectures

1 Introduction
   Dr. Raposa László Bence
2 European and Hungarian food safety regulation
   Dr. Raposa László Bence
3 Cases and concealed facts I. (Historical overview)
   Dr. Raposa László Bence
4 Cases and concealed facts II.
   Dr. Raposa László Bence
5 Crisis management and communication I.
   Dr. Raposa László Bence
6 Crisis management and communication II.
   Dr. Raposa László Bence
7 Food industry "tricks": Changes which the layman does not realize
   Dr. Raposa László Bence
8 Food industry "tricks": Changes which the layman does not realize
   Dr. Raposa László Bence
9 Actual food safety crisis
   Dr. Raposa László Bence
10 Actual food safety crisis
   Dr. Raposa László Bence
11 Summary
   Dr. Raposa László Bence
12 Exam
   Dr. Raposa László Bence
Practices

Seminars

Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
# OAF-EDT-T

**Epidemiological Methods for Undergraduate Research (TDK) and Thesis-writing**

**Course director:** Dr. István Zoltán Kiss, professor  
Department of Public Health Medicine • istvan.kiss@aok.pte.hu

<table>
<thead>
<tr>
<th>2 credit • midterm grade • Optional subject • both semesters • recommended semester: 3</th>
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<tr>
<td><strong>Number of hours/semester:</strong> 24 lectures + 0 practices + 0 seminars = total of 24 hours</td>
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<tr>
<td><strong>Course headcount limitations (min.-max.):</strong> 1 – 15</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> OAA-MET-T completed + OAA-AED-T completed</td>
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</tbody>
</table>

The subject can only be registered in case of a PASSED and valid health aptitude test!

### Topic

The medical and dentistry students get to know those research methods which mean the basis of evidence based medicine. During their undergraduate research and preparing for their thesis they also take part similar studies.

The aim of this course is to improve the ability of research planning, implementation, result procession and assessment and not the acquirement of the mathematical background. The most important practical skills are choosing and implementing the adequate epidemiological methods and the practical usage of SPSS. It can considerably help your scientific work.

### Conditions for acceptance of the semester

Participation in lectures and practicals is obligatory which is registered. Absences should not exceed 15% (4x45 min). Otherwise signature of grade book is denied.

### Mid-term exams

At the end of the semester written exam has to be taken.

### Making up for missed classes

Oral report from the missed issue.

### Reading material

- **Obligatory literature**

- Literature developed by the Department

  Educational material uploaded on Neptun.

- **Notes**

- **Recommended literature**

### Lectures

1. Basics of epidemiology and research methodology  
   Dr. Berényi Károly
2. Basics of research design  
   Dr. Berényi Károly
3. Ethical questions in scientific work, ethics approval  
   Dr. Berényi Károly
4. Creation of adequate hypothesis  
   Dr. Berényi Károly
5. Design of human studies based on questionnaire  
   Dr. Berényi Károly
6. Design of studies based on quantitative measurements  
   Dr. Berényi Károly
7. Design of studies based on qualitative measurements  
   Dr. Berényi Károly
8. Design of molecular epidemiological studies  
   Dr. Berényi Károly
9. How to present the results  
   Dr. Berényi Károly
10. Possibilities and rules of data recording  
    Dr. Berényi Károly
11. Statistical programs for epidemiological study assessments (Excel, SPSS, R, Statistica etc.)  
    Dr. Berényi Károly
Overview of most frequently used statistical methods
Dr. Berényi Károly

Applications of survival models
Dr. Berényi Károly

Analysis of screening methods, ROC curve analysis
Dr. Berényi Károly

Processing questionnaires
Dr. Berényi Károly

Analysis and assessment for attitude experiments
Dr. Berényi Károly

Basics of factor-analysis and interpretation of results
Dr. Berényi Károly

Multivariate analysis in epidemiology
Dr. Berényi Károly

Evaluation of multivariate analysis
Dr. Berényi Károly

Evaluation of association and cause-effect relationship
Dr. Berényi Károly

Analysis of epidemiological studies I.
Dr. Berényi Károly

Analysis of epidemiological studies II.
Dr. Berényi Károly

Analysis of epidemiological studies III.
Dr. Berényi Károly

Analysis of epidemiological studies IV.
Dr. Berényi Károly

Practices

Seminars

Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-EFA-T ETHNOPHARMACOBOTANY

Course director: DR. NóRA PAPP, associate professor
Department of Pharmacognosy • nora4595@gamma.ttk.pte.hu

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 4 – 20
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

Several written sources are available on the ethnobotanical usage and pharmaceutical history of medicinal plants from the Ancient Times. The course presents a summary about ethnobotanical data focusing on folk therapeutical methods and values of the Mediterranean area, Transylvania, countries of Europe, Asia, America and Africa completed by the scientific activity and curriculum vitae of ethnobotanists and researchers in this topic. Students receive a general approach about the rules and regularity of the special folk terminology, practice, folk customs and symbols in consideration of medicinal plants. In addition to ethnobotanical methods, the actual state, position and necessity of surveys are discussed during the course.

Conditions for acceptance of the semester

Satisfactory fulfilment of 2 written tests based on the lectures.

Absences: according to the Code of Studies and Examinations of the Medical School.

Mid-term exams

The required 2 tests can be retaken or corrected in the course.

Making up for missed classes

Downloading lectures.

Reading material

- Obligatory literature
- Literature developed by the Department
  http://aok.pte.hu/en/egyseg/oktatasianyagok/1640
  http://gytk.pte.hu/en/egyseg/oktatasianyagok/1640

- Notes
- Recommended literature

Ellen, Davi E., Hatfield, G.: Medicinal Plants in Folk Tradition an Ethnobotany of Britain and Ireland, Timber Press, Portland, Cambridge, 2004

Lectures

1 Ethnopharmacological data of the Ancient Times (Egypt, Mesopotamia).
   Dr. Papp Nóra
2 Ethnopharmacological data of the Ancient Times (Egypt, Mesopotamia).
   Dr. Papp Nóra
3 Ethnobotanical studies of the Native Indian populations of North, South and Central America (Cuba, Mexico).
   Dr. Papp Nóra
4 Ethnobotanical studies of the Native Indian populations of North, South and Central America (Cuba, Mexico).
   Dr. Papp Nóra
5 Ethnopharmacology of the ancient cultures of Iran, China, India, Tibet, Japan.
   Dr. Papp Nóra
6 Ethnopharmacology of the ancient cultures of Iran, China, India, Tibet, Japan.
   Dr. Papp Nóra
7 Ethnopharmacology of African and Mediterranean countries (Greece, Spain, Portugal, Italy).
   Dr. Papp Nóra
8 Ethnopharmacology of African and Mediterranean countries (Greece, Spain, Portugal, Italy).
   Dr. Papp Nóra

9 Ethnopharmacological data from the Middle Ages: therapy and medicinal plants in monastery gardens.
   Dr. Papp Nóra

10 Ethnopharmacological data from the Middle Ages: therapy and medicinal plants in monastery gardens.
    Dr. Papp Nóra

11 Transylvanian ethnobotanical values.
    Dr. Papp Nóra

12 Transylvanian ethnobotanical values.
    Dr. Papp Nóra

13 Written test I.
    Dr. Papp Nóra

14 Written test I.
    Dr. Papp Nóra

15 Ancient medico-botanical and herbal books and written sources with the morphological and therapeutical description of medicinal plants.
    Dr. Papp Nóra

16 Ancient medico-botanical and herbal books and written sources with the morphological and therapeutical description of medicinal plants.
    Dr. Papp Nóra

17 Scientific activity and curriculum vitae of ethnobotanists.
    Dr. Papp Nóra

18 Scientific activity and curriculum vitae of ethnobotanists.
    Dr. Papp Nóra

19 Methodologies in ethnobotanical collection.
    Dr. Papp Nóra

20 Methodologies in ethnobotanical collection.
    Dr. Papp Nóra

21 Interactive lecture: analysis and elaboration of scientific articles published in international journals and books based on the knowledge and view of the previous lectures.
    Dr. Papp Nóra

22 Interactive lecture: analysis and elaboration of scientific articles published in international journals and books based on the knowledge and view of the previous lectures.
    Dr. Papp Nóra

23 Traditional and folk terminology in plant names.
    Dr. Papp Nóra

24 Traditional and folk terminology in plant names.
    Dr. Papp Nóra

25 Documentation of ethnobotanical data - case studies
    Dr. Papp Nóra

26 Documentation of ethnobotanical data - case studies
    Dr. Papp Nóra

27 Written test II.
    Dr. Papp Nóra

28 Written test II.
    Dr. Papp Nóra

Practices

Seminars

Exam topics/questions

According to the topics of the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-EKV-T  Physiology: Questions, Answers, Consequences

Course director:  DR. KRISTÓF LÁSZLÓ, associate professor
institute of Physiology • kristof.laszlo@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3
Number of hours/semester:  0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.):  3 – 30
Prerequisites:  OAA-BI2-T completed + OAA-MB2-T completed + OAA-BEB-T completed

Topic
The course discusses complex concepts of human physiology based on questions and answers. The main goal is to expand the knowledge grounded by the physiology 1 course and to give a more practical point of view. The course emphasizes the medical relevances of our theoretical knowledge on human physiology. Students also have the opportunity to ask their physiology related questions during the program. The duration of the course is 6X2 hours. The following main topics are discussed: blood, cardiovascular system, respiratory system, digestion, metabolism, excretion and endocrinology.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
written test
Making up for missed classes
not obligatory

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Guyton, Medical physiology

Lectures

Practices

Seminars
1  Hemostasis, blood plasma
2  Cellular elements of blood
3  Pump functions and electrical activity of the heart
4  Vascular-system, regulation of blood pressure
5  Respiration
6  Interactions between cardiovascular- and respiratory-system
7  Gastrointestinal-system
8  Metabolism
9  Excretion
10  The role of kidney in volumen-, osmo- and pH regulation
11  Endocrinology
12  Test

Exam topics/questions
questions are based on the topics which are discussed during the course

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. László Kristóf (Q25LZ6)
**OAF-ETA-T  HUMAN NUTRITION AND DIETETICS**

**Course director:**
**DR. ZSUZSANNA VÉRTES, associate professor**
Institute of Physiology • zsuzsanna.vertes@aok.pte.hu

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**Course description**

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**2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 3**

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

**Course headcount limitations (min.-max.):** 3 – 40

**Prerequisites:** OAA-MB2-T completed

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**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**

Maximum of 25 % absence allowed

**Mid-term exams**

**Making up for missed classes**

As above

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - lecture notes
- **Notes**
- **Recommended literature**
  - 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
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<tr>
<td>11</td>
<td>Vitamins</td>
<td>Dr. Vértes Zsuzsanna</td>
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<td>Water and body fluids</td>
<td>Dr. Vértes Zsuzsanna</td>
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<td>16</td>
<td>Alcohol</td>
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<td>17</td>
<td>Nutrition during pregnancy and lactation</td>
<td>Dr. Vértes Zsuzsanna</td>
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<td>18</td>
<td>Nutrition for growth and development</td>
<td>Dr. Vértes Zsuzsanna</td>
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<td>Nutrition and physical fitness</td>
<td>Dr. Vértes Zsuzsanna</td>
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<td>Nutrition and physical fitness</td>
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<td>21</td>
<td>Nutrition and weight management</td>
<td>Dr. Vértes Zsuzsanna</td>
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<td>22</td>
<td>Eating disorders</td>
<td>Dr. Vértes Zsuzsanna</td>
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<td>23</td>
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<tr>
<td>24</td>
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<td>Dr. Vértes Zsuzsanna</td>
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**Practices**

**Seminars**

**Exam topics/questions**

**Written test**

**Information**

The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject.

**Participants**
**Course director:**

Dr. TIMEA VÁRJAS, assistant professor

**Department of Public Health Medicine • vtimi_68@yahoo.com**

**2 credit • midterm grade • Optional subject • autumn semester • recommended semester: 3**

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

**Course headcount limitations (min. - max.):** 3 – 35

**Prerequisites:** none

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**Topic**

The food industries have been using food additives for decades, which aims to improve the shelf life, texture, nutritional value, appearance and digestibility of the products. During the course lectures, the students will become more familiar with the groups of food additives, application areas, health effects of natural and artificial food additives. Our goal, to confirm or disprove the fear of using E-numbers on a scientific basis

**Conditions for acceptance of the semester**

Absences should not exceed 15% of lectures and practicals (2x45 min). Otherwise signature of grade book is denied.

**Mid-term exams**

Examination: written test

**Making up for missed classes**

Based on individual consideration

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - PPT-presentations (Neptun)
- **Notes**
- **Recommended literature**

**Lectures**

1. Introduction, characterization of food additives and their groups
   - Dr. Zand Afshin

2. Technological excipients and differences between food additives
   - Dr. Zand Afshin

3. Hungarian, EU, USA food additives regulations
   - Dr. Zand Afshin

4. The E-number system
   - Dr. Zand Afshin

5. The new additive authorization procedure
   - Dr. Zand Afshin

6. Safety investigation, review, controlling, forbidden food additives
   - Dr. Zand Afshin

7. Food dyes (E100-E199)
   - Dr. Zand Afshin

8. Health risks of Mono-azo food dyes
   - Dr. Zand Afshin

9. Preservatives (E200-E260) and their applications
   - Dr. Zand Afshin

10. Risks related to the consumption of preservatives
    - Dr. Zand Afshin

11. Natural and artificial sweeteners Characteristics
    - Dr. Zand Afshin

12. Safe consumption of sweeteners
    - Dr. Zand Afshin

13. Usage and regulations of pH control agents (acidifiers)
    - Dr. Zand Afshin

14. Hazards of acidity regulators
    - Dr. Zand Afshin
| 15 | Antioxidants (E300-E399), advantages and disadvantages | Dr. Zand Afshin |
| 16 | Bulking and gelling agents or (gelatin substitute) | Dr. Zand Afshin |
| 17 | Stabilizers and thickeners | Dr. Zand Afshin |
| 18 | Guar gum (guarana) panic hisotry | Dr. Zand Afshin |
| 19 | Taste enhancer chemical structure | Dr. Zand Afshin |
| 20 | Chinese resturant syndrome | Dr. Zand Afshin |
| 21 | Health concerns of polishers | Dr. Zand Afshin |
| 22 | Health effects of clumping inhibitors | Dr. Zand Afshin |
| 23 | Summary | Dr. Zand Afshin |
| 24 | test | Dr. Zand Afshin |

**Practices**

**Seminars**

**Exam topics/questions**

**neptun**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
OAF-FEA-T  B A S I C S O F  I N F E C T I O U S  D I S E A S E  E P I D E M I O L O G Y
Course director:  D R. I S T V Á N  Z O L T Á N  K I S S, professor
Department of Public Health Medicine • istvan.kiss@aok.pte.hu

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester:  9 lectures + 3 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 15  Prerequisites:  OAA-AED-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
However the morbidity and mortality caused by infectious diseases has significantly declined in the developed countries in the last century due to the effective prevention methods, their complete elimination is not possible, infectious diseases are still part of our everyday life. The spread of infectious diseases could be controlled by timely identification, proper investigation and by targeted interventions. Aim of the course is to present the special characteristics of infectious diseases, and of infectious disease epidemiology; basics and functioning of surveillance systems, the basics and steps of an outbreak investigation, and epidemiological methods used during the investigation.

Conditions for acceptance of the semester
The participation in the lectures, seminars, practises is obligatory (a catalogue should be signed), a maximum of 2x45 min absence is acceptable, above the signature will be rejected.

Mid-term exams
Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Heymann (ed.): Control of Communicable Diseases Manual
Mikanatha, Lynfield, Van Beneden, de Valk (eds.): Infectious Disease Surveillance

Lectures
1  Special characteristics of infectious diseases
    Dr. Prantner Ida
2  Basics of infectious disease epidemiology I
    Dr. Prantner Ida
3  Basics of infectious disease epidemiology II
    Dr. Prantner Ida
4  Methods used in infectious disease epidemiology
    Dr. Prantner Ida
5  Basic principles of surveillance
    Dr. Prantner Ida
6  Infectious disease surveillance
    Dr. Prantner Ida
7  Basics and steps of outbreak investigation I
    Dr. Prantner Ida
8  Basics and steps of outbreak investigation II
    Dr. Prantner Ida
9  Investigation of a food-borne outbreak
    Dr. Prantner Ida

Practices
1  Use of epidemiological knowledge in practice I (definitions, surveillance data interpretation, analysis)
2  Use of epidemiological knowledge in practice II (Data collection, analysis, graphical interpretations)
3  Use of epidemiological knowledge in practice III (analytic studies)
Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Prantner Ida (WO4A8D)
The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

This course, similarly to the course of Szeged University, would like to provide knowledge about medicinal plants and their products used in the medical practice. Today many people purchase medicinal plants and herbal products to prevent or cure diseases. Therefore specialists (physicians and pharmacists) should become acquainted with medicinal plants and drugs that are used in pharmacotherapy (especially in phytotherapy) both in Hungary and abroad. During the interactive lectures, we would like to introduce the most important medicinal plants and their drugs which are characterized according to their active compounds, usage, dosage, interactions with other drugs and side-effects. Moreover, we highlight the results of preclinical experiments and/or human studies of the most important medicinal plants. We will show the official Herbal Monographs prepared by HMPC (Committee on Herbal Medicinal Products) and accepted by the European Medicines Agency (EMEA). A European Union herbal monograph comprises the scientific opinion of the HMPC on safety and efficacy data concerning a herbal substance and its preparations intended for medicinal use. The HMPC evaluates scientifically all available information including non-clinical and clinical data but also documented long-standing use and experience in the European Union.

Because the medicinal use of different herbal products containing algae or mushrooms are highly popular, we would like to characterize and evaluate critically these products, as well.

The aim of the phytotherapy course is to show the most important medicinal plants, their products and their use in the medical practice, to highlight the possible side-effects and interactions, which may occur during their application. We want to call students’ attention to the presence of adulterated herbal product being on the markets and on the internet. We hope that medical students having up-to-date knowledge about medicinal plants and their well-established use in the therapy can give appropriate advice to laypersons, who use a lot of herbal medicines, sometimes with or without medical supervision.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

One written exam is compulsory during the semester. There is one possibility to rewrite the test.

**Making up for missed classes**

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

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**
  - PowerPoint presentations based on the lectures.

- **Notes**

- **Recommended literature**

**Lectures**

1. Definition of phytotherapy and its scope. Scientific and English name of medicinal plants and drugs. Different levels of the evaluation of herbal products: from in vitro experiments to human studies.
   Dr. Bencsik Timea

2. Natural substances in pharmaceutical research. Categories of herbal products: (traditional) herbal medicine, herbal tea and dietary supplement.
   Dr. Horváth Györgyi
3 Ethnobotany and ethnomedicine. Non-clinical and clinical data and documented long-standing use of medicinal plants.
   Dr. Papp Nóra
4 Immunmodulant medicinal plants. Medicinal role of mushrooms in the phytotherapy.
   Dr. Bencsik Timea
5 Medicinal value of algae and their metabolites in the phytotherapy.
   Dr. Horváth Györgyi
   Dr. Kőszegi Tamás Antal
7 Medicinal plants in the treatment of respiratory diseases.
   Dr. Horváth Györgyi
8 Medicinal plants in the treatment of cardiovascular diseases.
   Dr. Horváth Györgyi
9 Medicinal plants in the treatment of gastrointestinal tract diseases.
   Dr. Bencsik Timea
10 Medicinal plants in the treatment of urogenital diseases.
    Dr. Papp Nóra
11 Sedative and anxiolytic medicinal plants.
    Dr. Horváth Györgyi
12 Medicinal plants in the treatment of locomotor disorders.
    Dr. Papp Nóra
13 Medicine-medicinal plant-food interactions.
    Dr. Horváth Györgyi
14 Written test.
    Dr. Horváth Györgyi

Practices

Seminars

Exam topics/questions

Topics of the written test:

1. Definition of phytotherapy and its scope. Definition of herbal drugs.
2. Scientific and English name of medicinal plants and drugs.
3. Natural substances in pharmaceutical research and in therapy.
4. Categories of herbal products: (traditional) herbal medicine, herbal tea, dietary supplements.
5. Ethnobotany.
6. Therapeutical use of medicinal plants based on tradition and/or clinical evidences.
7. Different levels of the evaluation of herbal products: from in vitro experiments to human studies.
8. Medicinal use of mushrooms in the phytotherapy.
11. Medicinal value of plants in cancer therapy.
16. Sedative and anxiolytic medicinal plants.
17. Medicinal plants in the treatment of locomotor disorders.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
### Health Geography

**Course director:**

**Dr. István Zoltán Kiss, professor**

Department of Public Health Medicine • istvan.kiss@aok.pte.hu

<table>
<thead>
<tr>
<th>1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 3</th>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong></td>
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<tr>
<td>10 lectures + 0 practices + 2 seminars = total of 12 hours</td>
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### Course headcount limitations (min.-max.):

5 – 25

### Prerequisites:

none

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### Topic

The changes of the healthcare systems and population’s health status have induced these health related questions to the angle of social conversations. In line with this, large interest has began to show up about an important dimension of these kind of questions: spatial questions, regionality and geographical aspects. The cooperation of medicine, geography, economy and sociology created the science of health geography.

The purpose of this course is to provide an interdisciplinary approach and it may help to acquire the future medical doctors to have complex mind and better problem solving.

### Conditions for acceptance of the semester

Maximum of 15 % absence allowed

### Mid-term exams

Making up for missed classes

No possibility for making up missed classes.

### Reading material

- **Obligatory literature**
- Literature developed by the Department
  - Electronic material uploaded to Neptun
- **Notes**
- **Recommended literature**
  - T Brown, S McLafferty, G Moon (2009) A companion to health and medical geography

### Lectures

1. Medical aspects of the health geography I.
   - Medical geography-health geography-epidemiology
     Márovics Gergely Péter
2. Medical aspects of the health geography II.
   - History of the science networks, theoretical approaches
     Márovics Gergely Péter
3. Human geography aspects of the health geography I.
   - Concept and content
     Márovics Gergely Péter
4. Human geography aspects of the health geography II.
   - Latest trends
     Márovics Gergely Péter
5. Geographical relations of the world-population’s health
   Márovics Gergely Péter
6. Geographical differences of the world-population’s morbidity and mortality
   Márovics Gergely Péter
7. Health geography of Hungary I.
   - Geographical characteristic of health
     Márovics Gergely Péter
8. Health geography of Hungary II.
   - Spatial differences of morbidity and mortality
     Márovics Gergely Péter
9. Health geography of Hungary III.
   - Medical geography of Hungary
     Márovics Gergely Péter
10 Health geography of Hungary IV.
   - Healthcare system
     Mátrovics Gergely Péter

Practices

Seminars

1 Connection between health status and environment I.
   - Environment and health
2 Connection between health status and environment II.
   - Health effects of the climate change

Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Mátrovics Gergely Péter (QFV3Q5)
OAF-HAK-T  THE CHEMISTRY OF DEATH

Course director: DR. LÁSZLÓ MÁRK, associate professor
Department of Biochemistry and Medical Chemistry • laszlo.mark@aok.pte.hu

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 3 – 50
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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%.

Mid-term exams
Not possible.

Making up for missed classes
Not possible.

Reading material

- Obligatory literature
- Literature developed by the Department
  Lecture slides and notes.
- Notes
- Recommended literature
  Evans: The Chemistry of Death, 1963
  Stein: Physical Anthropology, 1976

Lectures

1. Introduction. Basics of toxicology
   Dr. Márk László
2. Introduction to biochemistry and enzymatic alterations.
   Dr. Márk László
3. Chemical processes of the last few minutes of the life.
   Dr. Márk László
4. Chemical processes of the last few minutes of the life.
   Dr. Márk László
5 General postmortem changes.
   Dr. Márk László
6 General postmortem changes.
   Dr. Márk László
7 Short term postmortem changes.
   Dr. Márk László
8 Chemical alterations of the first hours.
   Dr. Márk László
9 Decomposition processes.
   Dr. Márk László
10 Decomposition processes.
   Dr. Márk László
11 Special chemical modifications, mummification.
   Dr. Márk László
12 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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-HE1-T Advanced Physiology 1

Course director: DR. TAMÁS OLLMANN, assistant professor
Institute of Physiology • tamas.ollmann@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours

Course headcount limitations (min.-max.): 1 – 30

Prerequisites: OAA-BI2-T completed + OAA-BEB-T completed + OAA-MB2-T completed

Topic
Discussion of physiological topics, that not belong to the core subject. Real examples and case studies. The aim of the subject is to understand the deep, advanced physiological knowledge to complete the core subject. It can help to understand another subjects based on physiology as well. Topics of the first semester: blood, heart, circulation, respiration, gastrointestinal tract, metabolism, renal functions and endocrinology.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Written exam on the last seminar. If missed, oral exam until the end of the semester.

Making up for missed classes
Not necessary

Reading material
- Obligatory literature
- Literature developed by the Department
  The slides will be available
- Notes
- Recommended literature
  Guyton & Hall: Textbook of Medical Physiology

Lectures
Practices
Seminars
1 Blood I
2 Blood II
3 Heart I
4 Heart II
5 Circulation I
6 Circulation II
7 Respiration
8 Gastrointestinal tract
9 Metabolism
10 Renal functions, pH regulation
11 Endocrinology I
12 Exam

Exam topics/questions
Similar to seminar topics

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Ollmann Tamás (MP0EAP)
OAF-HF3-T  Hungarian for Foreigners 3

Course director: DR. KATALIN PELCZ, language teacher
International Studies Center • pelcz.kata@pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 3
Number of hours/semester: 0 lectures + 0 practices + 48 seminars = total of 48 hours
Course headcount limitations (min.-max.): 4 – 50  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The course is offered for all the interested participants who would like to learn Hungarian as a foreign language.

The Hungarian for Foreigners 3. 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

Maximum of 15 % absence allowed

Mid-term exams

The course ends with an oral and written exam. You can take part in the exam, with a min. 85% attendance rate.

Making up for missed classes

Medical certificate is accepted.

Reading material
- Obligatory literature
  Szita Szilvia - Pelcz Katalin: MagyarOK 2.
  www.magyar-ok.hu
- Literature developed by the Department
  Szita Szilvia - Pelcz Katalin: MagyarOK 2.
  www.magyar-ok.hu
- Notes
- Recommended literature

Lectures

Practices

Seminars
1  Ismerkedés
2  Ismerkedés
3  Ismerkedés
4  Téged mi érdekel? Önt mi érdeklő?
5  Téged mi érdekel? Önt mi érdeklő?
6  Téged mi érdekel? Önt mi érdeklő?
7  Én és a többiek: barátok és családtagok
8  Én és a többiek: barátok és családtagok
9  Tulajdonságok
10  Tulajdonságok
11  Lakást keresünk
12  Lakást keresünk
13  A lakásban
14  A lakásban
15  Rend a lelke mindennel: a házirend
16  Rend a lelke mindennel: a házirend
17  Milyenek a szomszédok?
18  Milyenek a szomszédok?
Exam topics/questions

Successful oral and written exam at the end of the course.

Topics:
Ismerkedés
Téged mi érdekel? Őnt mi érdeklő?
Én és a többiek: barátok és családtagok
Tulajdonságok
Lakást keresünk
A lakásban
Rend a lelke mindennek: a házirend
Milyenek a szomszédok?
Életformák: vidék és nagyváros
Milyen volt a hétvégé? Milyen volt a hétvégéje?
Mi a hobbid? Mi a hobbija?
Mit csinálunk együtt?
Mikor érz rá? Mikor ér rá?
Mikor érz rá? Mikor ér rá?
Mozi
Zenei fesztiválok
Sportolók, sportágak
Múzeumok
A múlt hét

A múlt hét
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pelcz Katalin (HBH9IN)
OAF-IPM-T  INNOVATION AND PROJECT MANAGEMENT FROM A BUSINESS PERSPECTIVE

Course director: DR. RITA BOGNÁR, research associate professor
Department of Biochemistry and Medical Chemistry • rita.bognar@aok.pte.hu

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 1 – 24  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The main objective of the innovation and project management course is to develop the business orientation skills of the students, while deepening their knowledge in project management theory, methods and practice. Participants will have the capability how to develop innovative projects for business.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Written test will be on the week 13.

Making up for missed classes
No way.

Reading material
- Obligatory literature
  Not relevant.
- Literature developed by the Department
  Lectures in pdf form will be available on Neptun Meet Street.
- Notes
  Not relevant.
- Recommended literature

Lectures
1 Basics of project management (definition, objectives)  Dr. Bognár Rita
2 Global business overview  Dr. Bognár Rita
3 Project life cycle  Dr. Bognár Rita
4 Different type of business organization  Dr. Bognár Rita
5 Project initialisation (structure, work packages)  Dr. Bognár Rita
6 Leadership of a project  Dr. Bognár Rita
7 Human resource management (team building, teamwork)  Dr. Bognár Rita
8 Project planning 1. (time, resources)  Dr. Bognár Rita
9 Project planning 2. (cost, risk, communication)  Dr. Bognár Rita
10 Project network  
   Dr. Bognár Rita  
11 Project communication tools  
   Dr. Bognár Rita  
12 Project protocol  
   Dr. Bognár Rita  
13 Financial management 1. (Main budget categories)  
   Dr. Bognár Rita  
14 Financial management 2.  
   Dr. Bognár Rita  
15 Procurement management  
   Dr. Bognár Rita  
16 Contracts  
   Dr. Bognár Rita  
17 Risk management  
   Dr. Bognár Rita  
18 Conflict management  
   Dr. Bognár Rita  
19 Project controlling and monitoring  
   Dr. Bognár Rita  
20 Project reporting  
   Dr. Bognár Rita  
21 Project closing  
   Dr. Bognár Rita  
22 Project maintenance  
   Dr. Bognár Rita  
23 Innovation management 1. (Intellectual properties)  
   Dr. Bognár Rita  
24 Innovation management 2. (Patent)  
   Dr. Bognár Rita  

Practices  
Seminars  
Exam topics/questions  
Neptun Meet Street  

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  
Participants
**OAF-KAN-T**  **CLINICAL ANATOMY**

**Course director:**

**DR. TIBOR HOLLÓSY,** assistant professor  
Department of Anatomy • tibor.hollosy@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

**Number of hours/semester:**  
0 lectures + 0 practices + 12 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**  
5 – 20

**Prerequisites:**  
OAA-AA1-T completed + OAA-SF1-T completed + OAA-AA2-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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**Topic**

The aim of the course is to show how anatomical knowledge is used in everyday clinical practice. The presenters of the course are mainly clinicians who use their experience gained during their anatomy education, in the everyday practice. During the lessons the students will experience diagnostic and therapeutic methods (e.g. physical, ultrasound and dentistry examinations, operation of hernias) which need certain knowledge of anatomy and show its practical approach in use.

**Conditions for acceptance of the semester**

1) Participation at least in 75% of seminars 2.) successful written test.

**Mid-term exams**

On the judgement of the tutor.

**Making up for missed classes**

On the judgement of the tutor.

**Reading material**

- **Obligatory literature**
- Literature developed by the Department  
  [http://an-server.pote.hu](http://an-server.pote.hu)

- **Notes**

- **Recommended literature**
  - Color Atlas of Human Anatomy, Thieme

**Lectures**

**Practices**

**Seminars**

1. Fülöp Balázs Dániel: Practice in MediSkillsLab I.
2. Németh Adrienn: What does the laryngoscope see?
3. Sándor Balázs: Long in the tooth!
4. Fülöp Balázs Dániel: A guided tour of the thorax with eyes, ears and hands.
5. Tóth Arnold: Anatomical regards (aspects) of thoracal X-ray examination.
7. Németh Zsuzsanna: Anatomy in the ER!
9. Fülöp Balázs Dániel, Kardos Dániel: Practice in MediSkillsLab II.
11. Fülöp Balázs Dániel, Kardos Dániel: Practice in MediSkillsLab III.
12. Fülöp Balázs Dániel, Kardos Dániel: Test

**Exam topics/questions**

Written test on the last seminar.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Fülöp Balázs Dániel (HMEIOC), Dr. Józsa Gergő (BTQSTO), Dr. Kardos Dániel József (EPRS3V), Dr. Kittka Bálint Pál (JJVFX),  
Dr. Németh Adrienne (EHHUIR), Dr. Sándor Balázs Attila (P7CGCZ), Dr. Tóth Arnold (Klwot8), Németh Zsuzsanna Dr. (G7ij0a)
OAF-MGE-T  MOLECULAR GERONTOLOGY

Course director: DR. KRISZTIÁN KVELL, associate professor
Department of Pharmaceutical Biotechnology  •  kvell.krisztian@pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3
Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 200  Prerequisites: OAA-MB1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The curriculum covers physiological aspects of ageing and the molecular background of the ageing process, at cell, intracellular signaling and nucleic acid level. It highlights the potential molecular intervention possibilities to slow down the ageing process and decrease development of age related diseases.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Writing test
Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
  www.medbiotech.com
- Recommended literature

Lectures
1  Basic Knowledge in Gerontology  Dr. Kvell Krisztián
2  Aging Theories  Dr. Kvell Krisztián
3  Mitochondrial Aging  Dr. Kvell Krisztián
4  Aging and Gene Expression  Dr. Kvell Krisztián
5  Genetic Background of Longevity  Dr. Kvell Krisztián
6  Alterations of the Genome due to Aging, Senescence and Cancer  Dr. Kvell Krisztián
7  Cellular Effects of Acute and Chronic Stress  Dr. Kvell Krisztián
8  Metabolism and Longevity I  Dr. Kvell Krisztián
9  Metabolism and Longevity II  Dr. Kvell Krisztián
10 Senescence-related Intracellular Pathologies  Dr. Kvell Krisztián
11 Senescence-related Intracellular Pathologies  Dr. Kvell Krisztián
12 Molecular Mechanisms of Interventions  Dr. Kvell Krisztián
13 Invited Lecturer I  Dr. Kvell Krisztián
14 Invited Lecturer II  Dr. Kvell Krisztián
Practices
Seminars
Exam topics/questions
MeetStreet
www.medbiotech.com

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-MLP-T  EPIGENETICS - THE MISSING LINK IN UNDERSTANDING PATHOGENESSES?**

**Course director:** TIBOR ATTILA RAUCH, senior research fellow

Department of Medical Biology and Central Electron Microscope Laboratory • rauch.tibor@pte.hu; tibor.rauch@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 1 – 50  Prerequisites: none

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**Topic**

Why are certain family members affected by tumorous diseases and others are not? Can the lifestyles of our grandparents and parents affect our health? What kind of molecular factors and mechanisms might be involved in epigenetics, including transgenerational inheritance? Is epigenetics the missing link between genetics, the environment and disease? These fundamental questions will be addressed and the latest advances of the field will be discussed. Moreover, epigenetic biomarkers and therapeutic potential of epigenetic drugs (epigenetic enzyme inhibitors) will be also covered.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

Closing test

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
  
  PowerPoint presentation according to lectures
- **Notes**
- **Recommended literature**
  
  
  Academic Press, Published Date: 7th August 2017

**Lectures**

1. Milestones of epigenetics - from Conrad Waddington to David Allis
   Rauch Tibor Attila
2. DNA methylation and demethylation - the first discovered epigenetic alterations
   Rauch Tibor Attila
3. Histone protein-related epigenetic signals
   Rauch Tibor Attila
4. Non-coding RNAs (miRNA, piRNA and IncRNA) in cell biology and pathogeneses
   Rauch Tibor Attila
5. Epigenetic methods, including single-locus and genome-wide analysis tools
   Rauch Tibor Attila
6. Genetic imprinting and X chromosome inactivation
   Rauch Tibor Attila
7. Stem cell and differentiation-associated epigenetic events
   Rauch Tibor Attila
8. Epigenetics of cancer
   Rauch Tibor Attila
9. Epigenetics of autoimmune diseases
   Rauch Tibor Attila
10. Epigenetic aspects of memory and neurological disorders
    Rauch Tibor Attila
11. Epigenetic biomarkers and therapeutic interventions
    Rauch Tibor Attila
12. Exam (oral or written)
    Rauch Tibor Attila
Practices

Seminars

Exam topics/questions

1. Milestones of epigenetics
2. DNA methylation and demethylation
3. Histone protein-related epigenetic signals
4. Non-coding RNAs
5. Epigenetic methods
6. Genetic imprinting
7. Stem cell and differentiation-associated epigenetic events
8. Epigenetics of cancer
9. Epigenetics of autoimmune diseases
10. Epigenetic aspects of memory and neurological disorders
11. Epigenetic biomarkers and therapeutic interventions
12. X-chromosome inactivation

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-MLY-T  META-ANALYSIS

Course director: DR. LÁSZLÓ PÓTÓ, associate professor
Institute of Bioanalysis • laszlo.poto@aok.pte.hu

1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 3

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 12
Prerequisites: OAA-MET-T completed

Topic

The course goal is to help to students to prepare their student research or thesis job. The first step is to select the topic. The best way to this is overview the relevant scientific literature of the given field of interest. It should be found typically a few dozen of fresh scientific paper and process them. The best statistical method is for this processing is the meta-analysis. There will be double results of that:
- It can be seen which examined questions were answered on a statistically proved way and which ones are still open. The later ones are good candidates for selecting as a topic for your research; not only as a thesis but as a potential PhD topic as well.
- On the other side it can be discovered some pitfalls which were causing the failed results of some jobs. To correct them is another potential job for a thesis work.

You can study the potential and use of the meta analysis methods in this course:
- Which data should be collected and how can you analyse them?
- What are the critical points of the meta-analysis standard methods?
- Interpret the results and make your conclusions.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Conduct your research job and present it week by week on the course.

Making up for missed classes

One extra class

Reading material

- Obligatory literature
  5-10 papers from the library, department, tutor ... collected by the student.
- Literature developed by the Department
  Other materials (sample papers and research plan, ...) supplied by the tutor.
- Notes
- Recommended literature
  Any statistical book from the design of studies and data evaluation.

Lectures

1  Basic features of medical research studies.
   Dr. Póto László
2  Medical publications - published data.
   Dr. Póto László
3  Find some relevant paper for a sample study
   Dr. Póto László
4  Find some relevant paper for a sample study
   Dr. Póto László
5  Basic principles of the meta-analysis.
   Dr. Póto László
6  Basic principles of the meta-analysis.
   Dr. Póto László
7  Data collection and input data forms of a meta-analysis
   Dr. Póto László
8  Data collection and input data forms of a meta-analysis
   Dr. Póto László
9  Meta analysis methods - part 1
   Dr. Póto László
10 Meta analysis methods - part 2
   Dr. Póto László
11 Results and conclusion options
   Dr. Póto László
12 Results and conclusion options
   Dr. Póto László

Practices
Seminars
Exam topics/questions
Activ participation and prepare and submit your own research work.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
MOLeCULAR NEUROENDOCRINOLOGY

Course director: DR. ISTVÁN MIKLÓS ÁBRAHÁM, professor
Institute of Physiology • istvan.abraham@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 25
Prerequisites: OAA-MB2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
A hallagatók betekintést kapnak a modern neuroendokrinológiai szemléletbe, sok kísérleti példával és klinikai relevanciával. Megismerkedhetnek azokkal a legújabb kutatási adatokkal, amelyek a hormonok molekuláris hatásait leírják a központi idegrendszerbe. Ezen felül áttekintést kapnak a molekuláris neuroendokrinológia legmodernebb eszköztáráról.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Reading material
- Obligatory literature
  Physiology textbooks
- Literature developed by the Department
  Lecture slides and videos
- Notes
  Notes taken by the student
- Recommended literature

Lectures
1  Functional anatomy and the role of the hypothalamus and pituitary gland I
   Dr. Ábrahám István Miklós
2  Functional anatomy and the role of the hypothalamus and pituitary gland II
   Dr. Ábrahám István Miklós
3  Major intracellular signalling pathways
   Dr. Ábrahám István Miklós
4  Methods in molecular neurendocrinology
   Dr. Ábrahám István Miklós
5  The neuroendocrine regulation of stress response I
   Dr. Ábrahám István Miklós
6  The neuroendocrine regulation of stress response II
   Dr. Ábrahám István Miklós
7  Action of glucocorticoids on neurons- role in neurodegenerative processes I
   Dr. Ábrahám István Miklós
8  Action of glucocorticoids on neurons- role in neurodegenerative processes II
   Dr. Ábrahám István Miklós
9  The neuronal regulation of fertility I
   Dr. Ábrahám István Miklós
10 The neuronal regulation of fertility II
    Dr. Ábrahám István Miklós
11 Genomic and non-genomic effect of estrogen on neurons I
    Dr. Ábrahám István Miklós
12 Genomic effect of estrogen on neurons II
    Dr. Ábrahám István Miklós
Practices
Seminars
Exam topics/questions
Test questions based on the lectures

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
OAF-MTS-T  Altered States of Consciousness in the Somatic Medicine

Course director: Dr. István TIRINGER, assistant professor
Department of Behavioural Sciences • istvan.tiringer@aok.pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 3
Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 15  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The aim of the course is to provide insight for the students about the possible types and causes of altered states of consciousness in the somatic medicine. The newest genetic and imaging studies bring medicine nearer to a deeper level understanding of consciousness, while the experiences gained from the medical practice gives us useful support in recognizing that the impact of illnesses, fears and hospital surroundings make the patients more sensitive to the statements of doctors. Utilizing these knowledge can provide optimization for the doctor-patient communication, thus creating more understanding and a better healing surrounding, which can lead to a greater satisfaction and faster rehabilitation between patients.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed. Active work and one presentation from the given topics is obligatory. Written exam at the end of the course.

Mid-term exams

Making up for missed classes

Should be discussed with the course tutor in each individual case.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

  Varga K. (ed.): Beyond the Words: Communication and Suggestion in Medical Practice, ELTE Eötvös Press, Budapest, 2011
  Kroger, W. S.: Clinical and Experimental Hypnosis in Medicine, Dentistry and Psychology, Lippincott Williams & Wilkins, Philadelphia, PA, 2008

Lectures
Practices
Seminars
1  Altered states of consciousness, types and definitions
2  Altered states of consciousness, types and definitions
3  Hypnosis and suggestions
4  Hypnosis and suggestions
5  Placebo and nocebo
6  Placebo and nocebo
7  Anxiety, fears and coping strategies
8  Anxiety, fears and coping strategies
9  Illness awareness and illness processing
10  Illness awareness and illness processing
11  The psychology of pain
12  The psychology of pain
13  Non-pharmacological pain therapy
14  Non-pharmacological pain therapy
15  Dissociation, definitions and adaptive forms
16  Dissociation, definitions and adaptive forms
17  Altered consciousness while suffering loss
18  Altered consciousness while suffering loss

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19 Rapport building situations in the medical praxis
20 Rapport building situations in the medical praxis
21 Involvement of the healer: empathy and burnout
22 Involvement of the healer: empathy and burnout
23 Summary
24 Summary

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Tiringer István (MSUBAC), Trixler Dániel (HM6QU5)
OAF-N37-T  ANATOMICAL TERMINOLOGY 2

Course director: GABRIELLA HÁBEL, language teacher
Department of Languages for Specific Purposes • gabriella.habel@aok.pte.hu

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
Anatomical Terminology concerning the internal organs.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Midterm test during week 11.
Retake test for those who happen to fail the midterm during week 12.

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

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  University script

Lectures
Practices
Seminars
1 Terminology pertaining to the maxilla, mandible, oral cavity, pharynx and teeth.
2 Terminology pertaining to the maxilla, mandible, oral cavity, pharynx and teeth.
3 Anatomical terms relating to the tongue and muscles of the tongue. Muscles of the soft palate.
4 Anatomical terms relating to the tongue and muscles of the tongue. Muscles of the soft palate.
5 Respiratory tract I. Anatomical terminology of the nasal cavity, paranasal sinuses and larynx.
6 Respiratory tract I. Anatomical terminology of the nasal cavity, paranasal sinuses and larynx.
7 Respiratory tract II. Terminology of the lungs.
8 Respiratory tract II. Terminology of the lungs.
9 Anatomical terminology pertaining to the heart and cardiovascular system.
10 Anatomical terminology pertaining to the heart and cardiovascular system.
11 Terminology of the digestive system, stomach and intestines.
12 Terminology of the digestive system, stomach and intestines.
13 Terminology of the peritoneum, liver, gallbladder and pancreas.
14 Terminology of the peritoneum, liver, gallbladder and pancreas.
15 Terminology of the urinary system.
16 Terminology of the urinary system.
17 Anatomical terminology of the male reproductive system.
18 Anatomical terminology of the male reproductive system.
19 Anatomical terminology of the female reproductive system.
20 Anatomical terminology of the female reproductive system.
21 Midterm test.
22 Midterm test.
23 Retake test for those who happen to fail the midterm.
24 Retake test for those who happen to fail the midterm.
Exam topics/questions

Anatomical terminology of internal organs.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Hábel Gabriella (CWD81H)
OAF-N67-T  HOW TO APPLY AND PREPARE FOR SCHOLARSHIPS AND INTERNSHIPS ABROAD

Course director: DR. TIMEA NÉMETH, assistant professor

Department of Languages for Specific Purposes • timea.nemeth@aok.pte.hu

2 credit • midterm grade • Optional subject • both semesters • recommended semester: 3

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 20
Prerequisites: none

Topic
The aim of the course is to prepare students, who are thinking of, have applied for, or have already won international scholarships or internships, to acquire those skills and competences deemed necessary for their study or practice abroad period. The course covers a variety of key topics including the development of their medical English language skills and addressing problems arising from cultural differences in medical settings.

Conditions for acceptance of the semester
Maximum of 15% absence allowed

Mid-term exams
As agreed with the tutor.

Making up for missed classes
As agreed with the tutor.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Győrffy Mária: English for Doctors, ISBN 963 04 7045 4

Lectures
Practices
Seminars
1 Choice of profession
2 Interview questions
3 Interview tips and tricks
4 Interview tips and tricks
5 How to write a cover letter and a CV
6 How to write an application and present a research topic
7 History taking, medication and case presentation
8 History taking, medication and case presentation
9 Physical examinations, giving instructions
10 Physical examinations, giving instructions
11 In the operating theatre, medical and hospital equipment
12 In the operating theatre, medical and hospital equipment
13 The structure of the health care system and medical education in the home and the target country
14 The structure of the health care system and medical education in the home and the target country
15 The structure of the health care system and medical education in the home and the target country
16 The structure of the health care system and medical education in the home and the target country
17 Culture shock and coping strategies
18 Culture shock and coping strategies
19 Stereotypes and prejudice
20 Stereotypes and prejudice
21 Interpreting body language
22 Interpreting body language
23 Test and evaluation
24 Test and evaluation
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Szántóné Dr. Csongor Alexandra (UDKY0J)
The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

To cope with the rapid evolution of medicine, physicians need to remain abreast of the many new therapies and diagnostic tools that affect their practices. This requires knowledge and skills that make physicians able to retrieve available scientific evidence and to use it as an important pillar of decisions in the daily practice.

Students participating in the course will acquire background knowledge necessary for effective information retrieval during their later work as a doctor. They will learn how to formulate clinically relevant questions and how to retrieve scientific literature to answer these questions. They will get an insight into how scientists can collect results of already available clinical studies before starting their research and how it is possible to identify research gaps in a specific scientific field.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

Knowledge and skills of students will be evaluated during the course.

**Making up for missed classes**

Missing not more than 3 hours may be amended by studying at home and answering specific questions of the tutor.

**Reading material**

- **Obligatory literature**
  - Literature developed by the Department
    The teaching material will be made available for students (handout).
  - **Notes**
  - **Recommended literature**

**Lectures**

1. Role of scientific literature in the daily medical practice. Sources of health care information
   Dr. Decsi Tamás
2. Basic searching: how to find scientific literature effectively for a focused question?
   Dr. Köhalminé Dr. Lohner Szimonetta Ivett
3. Formulating a clinically relevant question
   Dr. Köhalminé Dr. Lohner Szimonetta Ivett
4. Systematic reviews (definition, importance)
   Dr. Köhalminé Dr. Lohner Szimonetta Ivett
5. Methods of developing a search strategy
   Dr. Köhalminé Dr. Lohner Szimonetta Ivett
6. The MEDLINE database
   Dr. Köhalminé Dr. Lohner Szimonetta Ivett
7. Systematic literature searching in MEDLINE (via Pubmed)
   Dr. Köhalminé Dr. Lohner Szimonetta Ivett
8. Systematic literature searching in MEDLINE (via Ovid Medline)
   Dr. Köhalminé Dr. Lohner Szimonetta Ivett
   Dr. Köhalminé Dr. Lohner Szimonetta Ivett
10. Systematic literature searching in other databases. Searching clinical trial registers (clinicaltrials.gov, EU Clinical Trials Register)
    Dr. Köhalminé Dr. Lohner Szimonetta Ivett
11  Documentation of search steps. The PRISMA flow-chart  
    Dr. Kőhalminé Dr. Lohner Szimonetta Ivett  
12  Software that make systematic literature searching easier and faster  
    Dr. Kőhalminé Dr. Lohner Szimonetta Ivett

Practices

Seminars

Exam topics/questions
1. Role of scientific literature in the daily medical practice  
2. Definition and importance of systematic reviews  
3. Developing search strategies  
4. MEDLINE database  
5. The Cochrane Library  
6. PRISMA flow-chart

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-STH-T  ADVANCED HISTOLOGY**

**Course director:** DR. ANDREA TAMÁS, associate professor
Department of Anatomy • andreatamassz@gmail.com

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

**Number of hours/semester:** 12 lectures + 0 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 5 – 200  
**Prerequisites:** OAA-SF1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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 semester score (1 to 5) will be based on the quality of final written exam. To receive the credit, at least score 2 (satisfactory) should be received and the student must participate in more than 75% of the practices.

**Mid-term exams**

http://an-server.pote.hu

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
  
  http://an-server.pote.hu

- **Literature developed by the Department**
  
  http://an-server.pote.hu

- **Notes**
  
  http://an-server.pote.hu

- **Recommended literature**
  
  http://an-server.pote.hu

**Lectures**

1  
**Histology of oral cavity from clinical aspect**  
Dr. Sándor Balázs Attila

2  
**Histology of lymphoid system.**  
Dr. Gaszner Balázs

3  
**Histology of the heart from clinical aspect**  
Dr. Kónyi Attila

4  
**Respiratory system**  
Dr. Tamás Andrea

5  
**Characteristics of the gastrointestinal tract. Three-dimensional organization of the intestinal villi.**  
Dr. Tamás Andrea

6  
**Structures of the liver.**  
Dr. Kériné Dr. Józsa Rita

7  
**Structures of the urinary system**  
Dr. Tamás Andrea

8  
**The reproductive cycle: maturation of follicles. What determines the selection of the follicle during maturation**  
Dr. Horváth-Opper Gabriella

9  
**In vitro fertilization**  
Dr. Török Attila

10  
**Consultation and test**  
Dr. Tamás Andrea
Practices
Seminars

Exam topics/questions

Written test, questions are based on the materials of the lectures

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Technological disasters took part in the ever-growing environmental pollution. These exposures mean an acute and also a chronic exposure affecting our health. The aim of the course is to highlight the most memorable disasters from the 20th century. Risk of the toxic agents, the underlying failures that lead to disasters, acute and chronic health effects and prevention strategies are also discussed.

Conditions for acceptance of the semester

Absences should not exceed 15% of lectures and practicals (2x45 min). Otherwise signature of grade book is denied.

Mid-term exams

Examination: written test

Making up for missed classes

based on individual consideration

Reading material

- Obligatory literature
- Literature developed by the Department
  PPT-presentations (Neptun)
- Notes
- Recommended literature

Lectures

1  Introduction - Classification of technological disasters
   Dr. Szabó István
2  Toxicological aspects of disasters
   Dr. Szabó István
3  Toxicological aspects of disasters
   Dr. Szabó István
4  Air pollution - The Great London Smog
   Dr. Szabó István
5  Toxicological aspects of mineral oil
   Dr. Szabó István
6  Oil disasters
   Dr. Szabó István
7  Chemical industrial disasters
   Dr. Szabó István
8  Chemical industrial disasters
   Dr. Szabó István
9  Agricultural disasters
   Dr. Szabó István
10 Disasters in Hungary (River Tisza, Nagytétény, Red Sludge)
    Dr. Szabó István
11 Nuclear disasters
   Dr. Szabó István
12 Chernobyl nuclear power plant disaster
   Dr. Szabó István
Practices

Seminars

Exam topics/questions

Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Molecular Biology of Tumors

Course director: 

DR. EDINA PANDUR, assistant professor

Department of Pharmaceutical Biology • edina.pandur@aok.pte.hu

2 credit • midterm grade • Optional subject • autumn semester • recommended semester: 3

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

Course headcount limitations (min.-max.): 3 – 30

Prerequisites: OAA-MB1-T completed + OAA-MB2-T completed

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**Topic**

During the course we will discuss the molecular mechanisms of tumor development. We will deal with characteristic features of tumor cells, and cancers. The function of influencing factors, risk factors, causes, the underlying molecular mechanisms, e.g. mutations, the role of oncogenes and tumor-suppressor genes, DNA repair, epigenetics and the role of immune system will be discussed in detail. We will emphasize the function of cell signaling pathways and the failure of apoptosis in tumorigenesis. We will speak about the molecular mechanisms of invasion and metastasis of tumors, the genes and proteins which have a crucial role in these processes. The participants will get an insight into the molecular diagnosis, genetic aberrations, and molecular alterations of human cancers. We will discuss the possibilities for cancer therapies, the new approaches such as gene therapy and immunotherapy.

**Conditions for acceptance of the semester**

Max. 3 absences

Mid-term exams

One assay, one midterm exam.

Making up for missed classes

Personal consultation

Reading material

- **Obligatory literature**
  Educational materials will be uploaded to Neptune MeetStreet.

- **Recommended literature**
  Lauren Pecorino: Molecular Biology of Cancer
  Wolfgang Arthur Schulz: Molecular Biology of Human Cancers

**Lectures**

1. Introduction to cancers: classification and characterization of cancers, causes of cancer, properties of cancer cells, principles of therapies, targets of therapies
   Dr. Pandur Edina

2. Tumor genetics: mutations, carcinogenic agents, inheritance, tumor genes, defects in DNA repair and predispositions to cancer, cell protection mechanisms
   Dr. Pandur Edina

3. Tumor epigenetics: mechanisms of epigenetic inheritance, imprinting, DNA methylation, epigenetics of cell differentiation and tissue homeostasis
   Dr. Poór Viktor Soma

4. Oncogenes and tumor-suppressor genes
   Dr. Pandur Edina
9
The cell cycle, apoptosis and senescence: checkpoints, therapeutic targets and inhibitors, molecular mechanisms of apoptosis, replicative senescence and its disturbances in human cancers
Pap Ramóna

10
The cell cycle, apoptosis and senescence: checkpoints, therapeutic targets and inhibitors, molecular mechanisms of apoptosis, replicative senescence and its disturbances in human cancers
Pap Ramóna

11
Signaling pathways in tumors: MAPK, PI3K, TP53 network, NFkappaB, TGFbeta, STAT signaling
Dr. Pandur Edina

12
Signaling pathways in tumors: MAPK, PI3K, TP53 network, NFkappaB, TGFbeta, STAT signaling
Dr. Pandur Edina

13
Invasion and metastasis: genes and proteins involved in cell-to-cell, cell-matrix adhesion, in extracellular matrix remodeling during tumor invasion; angiogenesis.
Dr. Pandur Edina

14
Invasion and metastasis: genes and proteins involved in cell-to-cell, cell-matrix adhesion, in extracellular matrix remodeling during tumor invasion; angiogenesis.
Dr. Pandur Edina

15
The role of immune system in tumors: inflammation, infections, cancer vaccines, inhibition of the immune system
Pap Ramóna

16
The role of immune system in tumors: inflammation, infections, cancer vaccines, inhibition of the immune system
Pap Ramóna

17
Stem cells and cancer: Wnt signaling, Hh signaling, differentiation therapy
Dr. Pandur Edina

18
Stem cells and cancer: Wnt signaling, Hh signaling, differentiation therapy
Dr. Pandur Edina

19
Cancer prevention: nutrients, energy metabolism of tumors, hormones and gene interactions
Pap Ramóna

20
Cancer prevention: nutrients, energy metabolism of tumors, hormones and gene interactions
Pap Ramóna

21
Diagnosis of tumors: molecular diagnosis, molecular detection and classification
Jánosá Gergely

22
Diagnosis of tumors: molecular diagnosis, molecular detection and classification
Jánosá Gergely

23
Human cancers I: common properties, genetic aberrations, molecular alterations, histology and etiology of cancers
Dr. Tóth Dénes

24
Human cancers I: common properties, genetic aberrations, molecular alterations, histology and etiology of cancers
Dr. Tóth Dénes

25
Human cancers II: common properties, genetic aberrations, molecular alterations, histology and etiology of cancers
Dr. Tóth Dénes

26
Human cancers II: common properties, genetic aberrations, molecular alterations, histology and etiology of cancers
Dr. Tóth Dénes

27
Drugs in cancer therapy: molecular mechanisms of cancer chemotherapy, targeted drug therapy, immunotherapy, gene therapy
Dr. Poór Miklós

28
Drugs in cancer therapy: molecular mechanisms of cancer chemotherapy, targeted drug therapy, immunotherapy, gene therapy
Dr. Poór Miklós
### OAF-TSA-T Statistical Analysis of Thesis and Student Research Projects

**Course director:** DR. KORNÉLIA FARKAS-BORBÁS, assistant professor  
Institute of Bioanalysis  
nelli.farkas@aok.pte.hu

| 1 credit • midterm grade • Optional subject • both semesters • recommended semester: 3 | DR. KORNÉLIA FARKAS-BORBÁS, assistant professor  
Institute of Bioanalysis  
nelli.farkas@aok.pte.hu |
<table>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong></td>
<td>6 lectures + 6 practices + 0 seminars = total of 12 hours</td>
</tr>
<tr>
<td><strong>Course headcount limitations (min.-max.):</strong></td>
<td>3 – 20</td>
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<tr>
<td><strong>Prerequisites:</strong></td>
<td>none</td>
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#### Topic

This course is for those students who are working on a student research plan or working on their thesis. They can process their own data and learn the theory of the applied statistical methods as well.

#### Conditions for acceptance of the semester

Problem solving, oral report

#### Mid-term exams

Making up for missed classes

Consultation

#### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
  - Own database
- **Notes**
- **Recommended literature**
  - Douglas G. Altman: Practical Statistics for Medical Research, Chapman & Hall, 1994

#### Lectures

1. Set the data and complete the database for statistical processing  
   Borbásné Dr. Farkas Kornélia
2. Select the right statistical methods  
   Dr. Pótó László
3. Learn the theory of the selected methods  
   Dr. Pótó László
4. Interpret the results  
   Borbásné Dr. Farkas Kornélia
5. Interpret the results  
   Borbásné Dr. Farkas Kornélia
6. Conclusions  
   Borbásné Dr. Farkas Kornélia

#### Practices

1. Set the data and complete the database for statistical processing  
2. Select the right statistical methods
3. Learn the theory of the selected methods
4. Learn the theory of the selected methods
5. Interpret the results
6. Interpret the results
Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Borbásné Dr. Farkas Kornélia (IRWZKJ)
**OAF-TSS-T  MEDICAL APPLICATIONS OF MASS SPECTROMETRY**

**Course director:**

Dr. LÁSZLÓ MÁRK, associate professor

Department of Biochemistry and Medical Chemistry • laszlo.mark@aok.pte.hu

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 3

**Number of hours/semester:**

20 lectures + 0 practices + 0 seminars = total of 20 hours

**Course headcount limitations (min.-max.):**

3 – 50

**Prerequisites:** none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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**Topic**

In medical sciences, emphasis is increasingly placed on instrumental techniques and accurate, quantitative measurements. This course is 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%.

**Mid-term exams**

Not possible.

**Making up for missed classes**

Not possible.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  
  Lecture slides and notes.

- **Notes**

- **Recommended literature**
  
  

**Lectures**

1. Introduction to mass spectrometry
   
   Dr. Márk László

2. Introduction to mass spectrometry
   
   Dr. Márk László

3. Ionsources
   
   Dr. Márk László

4. Analyzers
   
   Dr. Márk László

5. The mass spectrum.
   
   Dr. Márk László

   
   Dr. Márk László

7. Sample pretreatment, separation techniques.
   
   Dr. Márk László

8. Sample pretreatment, separation techniques.
   
   Dr. Márk László

9. Proteomics

10. Proteomics

11. Metabolomics
   
   Dr. Márk László
12 Metabolomics  
Dr. Márk László

13 Investigation of endocrine system  
Dr. Márk László

14 Investigation of endocrine system  
Dr. Márk László

15 Pathological biomarker discovery  
Dr. Márk László

16 Pathological biomarker discovery  
Dr. Márk László

17 Lipidomics  
Dr. Márk László

18 Lipidomics  
Dr. Márk László

19 Imaging mass spectrometry  
Dr. Márk László

20 Imaging mass spectrometry  
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.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Course director: DR. BALÁZS GASZNER, associate professor
Department of Anatomy • balazs.b.gaszner@aok.pte.hu

1 credit • midsemester grade • Elective subject • spring semester • recommended semester: 4
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 60
Prerequisites: OAA-AA2-T completed + OAA-NEA-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
Demonstration of thoracic, abdominal, pelvic and the intra-cranial anatomy by computer tomography (CT), magnetic resonance imaging (MRI), ultrasound and radioactive isotope imaging techniques. The applications of these iconographic techniques in internal medicine, obstetrics, gynecology, neurology, urology, and neurosurgery will be presented. The aim of the course is to demonstrate the high 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 attendance at 75% of the lectures.

Mid-term exams
None.

Making up for missed classes
None.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Han/Kim: Sectional Human Anatomy, Ilchokak: Seoul; Igaku - Shoin: New York-Tokyo, 1989 or later editions
Visible Human (Web), http://an-server.pte.hu

Lectures
1  Topography of thoracic organs in horizontal, frontal and sagittal planes
   Dr. Gaszner Balázs
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. Gaszner Balázs
4  Diagnostic labyrinth of bodily cavities
   Dr. Battányi István
5  Topography of pelvic organs in horizontal, frontal and sagittal planes
   Dr. Gaszner Balázs
6  Imaging techniques in the urological practice
   Dr. Pytel Ákos
7  Use of ultrasound imaging techniques in obstetrics
   Dr. Farkas Bálint
8  Anatomy of the head and neck in CT and MRI images
   Dr. Gaszner Balázs
9  The anatomy of pain as seen by magnetic resonance imaging (fMRI)
   Dr. Komoly Samuel
10 In vivo neuroanatomical „dissection” of the human brain with the aid of MRI: functional morphology
    Dr. Schwarz Attila
11 Imaging of the central nervous system using techniques of nuclear medicine  
   Dr. Bódisné Dr. Zámbó Katalin

12 Modern imaging techniques in neurosurgery  
   Dr. Fehér Máté

Practices

Seminars

Exam topics/questions

No exam questions available.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-BSK-T  BIOINORGANIC CHEMISTRY

Course director: DR. ATILÁ AGÓCS, associate professor
Department of Biochemistry and Medical Chemistry • attila.agocs@aok.pte.hu

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 4
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 40
Prerequisites: OAA-ORK-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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.

Some previous knowledge of biochemistry (at least one semester) is highly recommended.

Conditions for acceptance of the semester
Successful written exam.

Mid-term exams
On the last week written exam about the topics of the lectures.

Making up for missed classes
None.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  P. Gergely (ed.): Introduction to Bioinorganic Chemistry for Medical Students, latest edition, Univ. Med. School of Debrecen
  Wolfgang Kaim, Brigitte Schwederski: Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life, latest edition, Wiley

Lectures
1  Introduction
   Dr. Agócs Attila
2  Introduction
   Dr. Agócs Attila
3  Structure of biocomplex compounds, chelates
   Dr. Takátsy Anikó
4  Structure of biocomplex compounds, chelates
   Dr. Takátsy Anikó
5  Biological importance of alkali metals and alkaline earth metals
   Dr. Takátsy Anikó
6  Biological importance of alkali metals and alkaline earth metals
   Dr. Takátsy Anikó
7  Bioinorganic chemistry of transition metals I.
   Dr. Berente Zoltán
8  Bioinorganic chemistry of transition metals I.
   Dr. Berente Zoltán
9  Bioinorganic chemistry of transition metals II.
   Dr. Berente Zoltán
10 Bioinorganic chemistry of transition metals II.
    Dr. Berente Zoltán
11 Bioinorganic chemistry of transition metals III.
    Dr. Berente Zoltán
12 Bioinorganic chemistry of transition metals III.
    Dr. Berente Zoltán
Aluminium group, complexes in the medicine  
Dr. Takátsy Anikó  

Non-metallic elements I  
Dr. Agócs Attila  

Non-metallic elements I  
Dr. Agócs Attila  

Non-metallic elements II  
Dr. Agócs Attila  

Non-metallic elements II  
Dr. Agócs Attila  

Non-metallic elements III  
Dr. Agócs Attila  

Non-metallic elements III  
Dr. Agócs Attila  

Non-metallic elements IV  
Dr. Agócs Attila  

Non-metallic elements IV  
Dr. Agócs Attila  

Test paper  
Dr. Agócs Attila  

Test paper  
Dr. Agócs Attila  

Practices  
Seminars  
Exam topics/questions  
Lecture slides will be uploaded to the homepage of the institute.  
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  
Participants
**OAE-DM2-T **

**DEMONSTRATOR ACTIVITY 2**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. LÁSZLÓ JÓZSEF CZOPF, associate professor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1st Department of Internal Medicine • <a href="mailto:laszlo.czopf@aok.pte.hu">laszlo.czopf@aok.pte.hu</a></td>
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</tbody>
</table>

**2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 4**

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<th>Number of hours/semester:</th>
<th>0 lectures + 24 practices + 0 seminars = total of 24 hours</th>
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<tbody>
<tr>
<td>Course headcount limitations (min.-max.):</td>
<td>1 – 300</td>
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</tbody>
</table>

**Prerequisites:** OAE-DM1-T completed

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**Topic**

This course gives support and acknowledgement for students performing documented and successful supervised teaching activities and taking an active part in organizing courses.

The subjects can be taken up in eight semesters (in a total value of 16 credits).

**Conditions for acceptance of the semester**

**Students have to register every semester as demonstrators,** should provide proof of previous demonstrator activity, and the semester will be signed on the basis of at least 24 hours of teaching or organizatory activity. The grades will be given according to the Code of Demonstrators with additional requirements, that you can reach using the following links: Code of Demonstrator Students:

https://docs.google.com/document/d/1xkkyeRdZzDphmqWEkpON05Qf34MpBBJqogG09fd8Rw/edit?usp=sharing

Faculty Home Page of the Circle of Demonstrator Students (DDK):


**Mid-term exams**

At least two midsemester tests should be successfully completed to pass.

**Making up for missed classes**

There are no absences accepted from the 24 hours demonstrator activity.

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**

- **Notes**

- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

The topics of the tests depend on the specific course of the demonstrator activity.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Czopf László József (BAVD1M), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Sebők Judit (GLM10L), Dr. Tamás Andrea (F7QM8G), Dr. Ujvári Balázs (EN1LY9)
OAE-EAH-T  PHYSIOLOGY OF THE ADAPTATION LIMITS OF THE HUMAN BODY

Course director: DR. JÓZSEF LÁSZLÓ KÖRNYEI, associate professor
Institute of Physiology • Jozsef.Kornyei@aok.pte.hu

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 4
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 220

Prerequisites: OAA-EL1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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, kinesiology, 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
Maximum of 25 % absence allowed

Mid-term exams
According to the university’s regulations.

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 Neptun Meet Street.

Reading material
- Obligatory literature
  Physiology textbooks
- Literature developed by the Department
  Figures of the lectures, edited movies
- Notes
  Short notes of the students
- Recommended literature
  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 III., 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 Thermal strain situations I.: total body and local cold effects  
    Dr. Környei József László
12 Thermal strain situations I.: total body and local cold effects  
    Dr. Környei József László
13 Thermal strain situations II.: total body and local warm effects  
    Dr. Környei József László
14 Thermal strain situations II.: total body and local warm effects  
    Dr. Környei József László
15 Mechanical resistance of the human body: passive limits (accidental traumas)  
    Dr. Környei József László
16 Sport and military strain situations, physiological limits of muscular work.  
    Dr. Környei József László
17 Reaction time, coordination of movements, physiology of active limits.  
    Dr. Környei József László
18 Causes of accidents, the human factor.  
    Dr. Környei József László
19 Electric current and radioactivity limits.  
    Dr. Környei József László
20 Weather fronts, physiology of orientation  
    Dr. Környei József László
21 Physiological limits of sensory organs in humans, vision and hearing.  
    Dr. Környei József László
22 Fear and overcoming it, adrenalin need, effects of sleep withdrawal, upper limits of concentration.  
    Dr. Környei József László
23 Physiology of time shift problems, "jet-leg".  
    Dr. Környei József László
24 Intellectual work, memory, will-power and survival skills.  
    Dr. Környei József László

Practices
Seminars
Exam topics/questions
Test questions based on the topics of the lectures.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-H4A-T  MEDICAL HUNGARIAN 4A - BASICS OF MEDICAL COMMUNICATION**

**Course director:** DR. VLIMOS WARTA, associate professor  
Department of Languages for Specific Purposes  
vilmos.warta@aok.pte.hu

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 4</th>
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**Number of hours/semester:** 0 lectures + 0 practices + 24 seminars = total of 24 hours

**Course headcount limitations (min.-max.):** 3 – 25  
**Prerequisites:** OAE-H3A-T completed + OAE-H4B-T parallel

**The subject can only be registered in case of a PASSED and valid health aptitude test!**

**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 25% 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.

**Mid-term exams**

Making up for missed classes

To be discussed with the course tutor.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**

- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

1. Paediatrics
2. Paediatrics
3. Dermatology
4. Dermatology
5. ENT
6. ENT
7. Ophthalmology
8. Ophthalmology
9. Dentistry
10. Dentistry
11. Consolidation (Final Exam Tickets 1-10)
12. Consolidation (Final Exam Tickets 1-10)
13. Consolidation (Final Exam Tickets 11-20)
14. Consolidation (Final Exam Tickets 11-20)
15. Consolidation (Final Exam Tickets 21-30)
16. Consolidation (Final Exam Tickets 21-30)
17. Consolidation (Final Exam Tickets 31-40)
18. Consolidation (Final Exam Tickets 31-40)
19. Consolidation (Final Exam Tickets 41-50)
20. Consolidation (Final Exam Tickets 41-50)
21. Final Exam
22. Final Exam
23. Final Exam
24. Final Exam
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SIYRAV), Egyed Csilla Klára (Z1BN90), Eklicsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

OAE-H4B-T  MEDICAL HUNGARIAN 4B - MEDICAL COMMUNICATION IN PRACTICE

Course director:  DR. VILMOS WARTA, associate professor
Department of Languages for Specific Purposes  vilmos.warta@aok.pte.hu

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 4
Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: OAE-H3B-T completed + OAE-H4A-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 25% 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.

Mid-term exams
Making up for missed classes
To be discussed with the course tutor.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures

Practices

Seminars
1 Listening Comprehension and Speaking Skills: Paediatrics
2 Listening Comprehension and Speaking Skills: Paediatrics
3 Listening Comprehension and Speaking Skills: Dermatology
4 Listening Comprehension and Speaking Skills: Dermatology
5 Listening Comprehension and Speaking Skills: ENT
6 Listening Comprehension and Speaking Skills: ENT
7 Listening Comprehension and Speaking Skills: Ophtalmology
8 Listening Comprehension and Speaking Skills: Ophtalmology
9 Written Test 1
10 Oral Test 1
11 Listening Comprehension and Speaking Skills: Dentistry
12 Listening Comprehension and Speaking Skills: Dentistry
13 Consolidation (Final Written Exam Tickets 1-5)
14 Consolidation (Final Written Exam Tickets 1-5)
15 Consolidation (Final Written Exam Tickets 6-10)
16 Consolidation (Final Written Exam Tickets 6-10)
17 Consolidation (Final Written Exam Tickets 11-15)
18 Consolidation (Final Written Exam Tickets 11-15)
19 Written Test 2
20 Oral Test 2
21 Final Exam
22 Final Exam
23 Final Exam
24 Final Exam
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SIYRAV), Egyed Csilla Klára (Z1BN90), Eklicsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántó Dr. Csongor Alexandra (UDKY0J)
OAE-MAF-T  |  RELATIONSHIP BETWEEN INTRAUTERINE DEVELOPMENT AND ANATOMICAL SITUS

Course director:  

Dr. Judit Horváth, associate professor
Department of Anatomy  judit.e.horvath@aok.pte.hu

1 credit • midterm grade • Elective subject • spring semester • recommended semester: 4

Number of hours/semester: 4 lectures + 0 practices + 8 seminars = total of 12 hours

Course headcount limitations (min.-max.): 5 – 30

Prerequisites: OAA-AA2-T completed + OAA-EL1-T completed + OAA-SF2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

Synthesis of previous anatomical and embryological knowledge, enlightening connections of embryological development, explaining the background of developmental malformations.

Conditions for acceptance of the semester

Maximum of absences: 2 hours.

Mid-term exams

Making up for missed classes

There is no possibility of making up the missed classes.

Reading material

- Obligatory literature
  
  Langman’s Medical Embryology

- Literature developed by the Department
  
  http://an-server.pote.hu/OKT/K_Emb/eK_Emb.htm

- Notes

- Recommended literature

Lectures

1  Intrauterine development in the first two months and the external body shape.
   Dr. Horváth Judit

2  Development of the organs of the thoracic cavity - the embryological basis of the anatomical situs.
   Dr. Horváth Judit

3  Development of the organs of the abdominal cavity - the embryological basis of the anatomical situs.
   Dr. Horváth Judit

4  Development of the nervous system - the embryological basis of the macroscopy of the brain.
   Dr. Horváth Judit

Practices

Seminars

1  Intrauterine development in the first two months and the external body shape.

2  Intrauterine development in the first two months and the external body shape.

3  Development of the organs of the thoracic cavity - the embryological basis of the anatomical situs.

4  Development of the organs of the thoracic cavity - the embryological basis of the anatomical situs.

5  Development of the organs of the abdominal cavity - the embryological basis of the anatomical situs.

6  Development of the organs of the abdominal cavity - the embryological basis of the anatomical situs.

7  Development of the nervous system - the embryological basis of the macroscopy of the brain.

8  Development of the nervous system - the embryological basis of the macroscopy of the brain.

Exam topics/questions

http://an-server.pote.hu/OKT/K_Emb/eK_Emb.htm

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Horváth Judit (NRU3IB)
**OAE-SY2-T  SELL YOURSELF! II. - PRESENTATION TECHNIQUES**

**Course director:**

DR. JÓZSEF LÁSZLÓ SZEINTPÉTERI, honorary professor

**Institute of Transdisciplinary Discoveries - Director of Innovation, Institute of Physiology • joepetersburger@gmail.com**

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 4

**Number of hours/semester:**

0 lectures + 24 practices + 0 seminars = total of 24 hours

**Course headcount limitations (min.-max.):**

4 – 15

**Prerequisites:** none

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**Topic**

Practical development of students’ verbal, non-verbal and visual presentation abilities.

- Structure of presentation
- Dynamics of presentation
- Basic presentation techniques
- Methods of effective persuasion
- Audience survey
- Questions, handling objections
- Verbal content
- Non-verbal communication / body language
- Raising awareness, maintaining the feedback rating
- The use of visual aids
- Slideshow planning and preparation
- Guidelines for charts, graphics preparation

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

Course based on the applied knowledge gained at ‘Sell Yourself! - presentation techniques’ (OAE-AEM-T) course. Each student MUST give verbal presentation at each class.

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
  
  Literature is not compulsory, but all books in recommended literature list (see below) contain very useful information to provide a more effective implementation of the objectives of the course.

- **Literature developed by the Department**
  
  .ppt files provided during the course, recommended literature and online materials.

- **Notes**
  
  .ppt files provided during the course, recommended literature and online materials.

- **Recommended literature**
  
  Stephen R. Covey: The 7 Habits of Highly Effective People, Simon & Schuster UK Ltd., 1999

**Lectures**

**Practices**

3. Basic techniques of the performance (understandable language, understandable volume, awareness-raising dynamism, open communication, free talk)
Effective communication and aids: avoidance of foreign words, simple sentences, intense words, rhetorical pause, stimulate debate, questioning; Metaphors, similes, dressing of numbers, repeating.

Packaging the content. Questions, handling objections. Tools for arousing attention.

Nonverbal tools of the presenter I.: Appearance. Stage presence. Movement in the available space.

Nonverbal tools of the presenter II.: the face, hands gestures, posture, and their interpretation.

Proper assessment of the audience reaction based on their non-verbal signals. Proper responses.

Using visual aids I.: How PSE (Picture Superiority Effect) can help to increase the effectiveness of the presentation?

Using visual aids II.: The design of the slide show, preparation.

Using visual aids III.: Composition guidelines. Acquisition of images, correct and lawful use. Using animations.


Using visual aids V.: Guidelines for the duration of each slide. The use of visual material, correct chronology.

Using visual aids VI.: videos, music and pictorial material. Overview of different presentation platforms (PowerPoint, Keynote, Prezi)

Preparation methods: Text writing, design, technology, the specific room regarding with the expected audience.

Tools to raise awareness I.: the first 30 seconds in different genres of performing arts

Tools to raise awareness II.: The use of enhancement in different genres of performing arts

Application of effective volume, articulation and facial gestures

Nonverbal gestures supporting effective communication

Recognizing audience’s nonverbal signals

Performance analysis I.: advertisements

Performance Analysis II.: TED lectures

Performance Analysis III.: Steve Jobs

Exam topics/questions

Each student give a final presentation at the end of the semester. Grade depend on the level of developement during the semester, not just the final presentation.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Szentpéteri József László (LFTMYS)
OAE-TD2-T  

**STUDENT PROJECT RESEARCH 2**

**Course director:**

**DR. TIBOR ERTL, professor**

Undergraduate Research • tibor.ertl@aok.pte.hu

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 4</th>
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</thead>
</table>

**Number of hours/semester:**

0 lectures + 20 practices + 0 seminars = total of 20 hours

**Course headcount limitations (min.-max.):**

1 – 300

**Prerequisites:**

OAE-TD1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

---

**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 enrol 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 enrol 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. For detailed requirements please read the following document: [http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng](http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng)

**Mid-term exams**

**Making up for missed classes**

Not applicable.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  
  Not applicable

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

Not applicable

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Balogh Péter (KVAPT7)
OAE-TIZ-T  CENTRAL REGULATION OF FEEDING AND METABOLISM. NEW APPROACHES

Course director: Dr. ZOLTÁN KARÁDI, professor
Institute of Physiology  •  zoltan.karadi@aok.pte.hu

1 credit  •  midterm grade  •  Elective subject  •  spring semester  •  recommended semester: 4

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 2 – 25

Prerequisites: OAA-MB2-T completed + OAA-BEB-T completed + OAA-AA2-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Mid-term exams

Individual oral mid-semester test.

Making up for missed classes

Individually discussed

Reading material

- Obligatory literature
  Guyton & Hall: Textbook of Medical Physiology, Saunders

- Literature developed by the Department

- Notes

- Recommended literature

  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. Homeostasis, motivation.
   Dr. Karádi Zoltán

2  Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. I
   Dr. Karádi Zoltán

3  Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. II
   Dr. Karádi Zoltán

4  Neuronal and humoral factors in the central regulation of homeostatic functions: brain centers, neurotransmitter pathways, neuropeptides. III
   Dr. Karádi Zoltán

5  Exogenous chemosensory modalities. Physiologic roles of gustation.
   Dr. Karádi Zoltán

6  Central taste pathways, „labeled lines”, neurons.
   Dr. Karádi Zoltán

7  Taste preference, taste aversion, palatability, flavour.
   Dr. Karádi Zoltán

8  The glucose-monitoring (GM) neural network. I
   Dr. Karádi Zoltán

9  The glucose-monitoring (GM) neural network. II
   Dr. Karádi Zoltán
10 Eating and metabolic disorders: obesity, anorexia nervosa, diabetes mellitus, metabolic syndrome. I
Dr. Karádi Zoltán

11 Eating and metabolic disorders: obesity, anorexia nervosa, diabetes mellitus, metabolic syndrome. II
Dr. Karádi Zoltán

12 Feeding and metabolic disorders: disturbance of the GM system?
Dr. Karádi Zoltán

Practices

Seminars

Exam topics/questions

1. Feeding (hunger) and satiety centers; feeding (hunger) and satiety neural pathways.
2. Orexigenic and anorexigenic neuromodulator factors (list up at least 3 of each).
3. The two major neuron types of the hypothalamic arcuate nucleus (with respect to feeding); their modulation by insulin, leptin, and ghrelin.
4. Key structures of the central glucose-monitoring neuronal network (list up at least 4 of them).
5. Consequences of selective destruction of central GM neurons (name of the toxic agent, and its effects).

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-ANC-T  MEDICAL ENGLISH 2/c - WRITING UP RESEARCH - HOW TO PREPARE AND READ MEDICAL JOURNAL ARTICLES

Course director: DR. GÁBOR RÉBÉK-NAGY, associate professor
Department of Languages for Specific Purposes • gabor.n.rebek@aok.pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 4
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 20  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 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.

Mid-term exams
1/ Four quizzes
2/ Essay on the theory of medical research article writing
3/ Annotating a medical research article

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

Reading material
- Obligatory literature
- Literature developed by the Department
  in-house hand-outs
- Notes
- Recommended literature

Lectures
  1  The genre of Medical Research Articles (MRAs)
     Dr. Rébék-Nagy Gábor
  2  The vocabulary and syntax of MRAs
     Dr. Rébék-Nagy Gábor
  3  Evidence based medicine in MRAs
     Dr. Rébék-Nagy Gábor
  4  Types of research papers compared to MRAs
     Dr. Rébék-Nagy Gábor
  5  An overview of the content of MRA subsections
     Dr. Rébék-Nagy Gábor
  6  Inductive enquiry as reflected in MRAs
     Dr. Rébék-Nagy Gábor
  7  The research process 1
     Dr. Rébék-Nagy Gábor
  8  The research process 2
     Dr. Rébék-Nagy Gábor
  9  Types of truth in MRAs
     Dr. Rébék-Nagy Gábor
 10  Interpreted truth in MRAs
     Dr. Rébék-Nagy Gábor
Hedging in MRAs 1
Dr. Rébék-Nagy Gábor

Hedging in MRAs 2
Dr. Rébék-Nagy Gábor

Politeness in MRAs 1
Dr. Rébék-Nagy Gábor

Politeness in MRAs 2
Dr. Rébék-Nagy Gábor

The Introduction section of MRAs 1
Dr. Rébék-Nagy Gábor

The Introduction section of MRAs 2
Dr. Rébék-Nagy Gábor

The method section of MRAs 1
Dr. Rébék-Nagy Gábor

The Methods section of MRAs 2
Dr. Rébék-Nagy Gábor

The Results section of MRAs 1
Dr. Rébék-Nagy Gábor

The Results section of MRAs 2
Dr. Rébék-Nagy Gábor

The Discussion section of MRAs 1
Dr. Rébék-Nagy Gábor

The Discussion section of MRAs 2
Dr. Rébék-Nagy Gábor

abstracts, summaries, titles of MRAs
Dr. Rébék-Nagy Gábor

Course summary, grades
Dr. Rébék-Nagy Gábor

Practices

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-BOT-T  THEORY AND PRACTICE OF EVIDENCE-BASED MEDICINE**

**Course director:**

DR. TAMÁS DECSI, professor
Department of Pediatrics • decsi.tamas@pte.hu

1 credit • midterm grade • optional subject • spring semester • recommended semester: 4

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 1 – 25

Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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**

Maximum of 25% absence allowed

**Mid-term exams**

The readiness of students to apply methods of evidence-based medicine in practical settings will be evaluated during the course.

**Making up for missed classes**

Missing not more than three hours may be amended by studying at home and answering specific questions of the tutor.

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**

  The teaching material will be made available for the students (handout).

- **Notes**

- **Recommended literature**


**Lectures**

1. Definition of evidence-based medicine. The role of evidence in medical praxis
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
2. Study designs. Hierarchy of evidence
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
3. Observational studies
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
4. Interventional studies. Randomised controlled trials
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
5. Planning and conducting a clinical trial - based on own experiences
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
6. How to search for scientific literature efficiently?
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
7. Systematic literature searching
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
8. Summarizing data. Meta-analysis
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
9. Critical appraisal of scientific literature
   Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
10. The international Cochrane collaboration and Cochrane in Hungary
    Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
11. Guideline development process
    Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
12. Role of guidelines in everyday clinical praxis
    Dr. Kőhalminé Dr. Lohner Szimonetta Ivett
Exercises

Seminars

Exam topics/questions

1. Definition of evidence-based medicine. The role of evidence in medical praxis.
2. Study designs. Hierarchy of evidence
3. Observational studies
4. Randomised controlled trials
5. How to formulate a clinically relevant question?
6. Searching in databases
7. Summarizing data
8. Systematic reviews
9. The Cochrane collaboration
10. Evidence-based medical guidelines

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

OAF-CSU-T MIRACLES OF LIVING MATERIALS ("REALISTIC" BIOCHEMISTRY)

Course director: DR. BALÁZS VERES, associate professor
Department of Biochemistry and Medical Chemistry • balazs.veres@aok.pte.hu

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 4

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 45 Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The aim of the course is to enlighten and uncover the biochemical background of those topics which are selected as recent „mainstream” natural science issues. The topic spectrum is wide enough to cover problems from synthetic biology through dopes in sport until toxins and poisons of plants, fungi and animals. There is a special session about the physical, chemical and medical Nobel prizes from the last decade to get insight to the hottest fields of natural sciences.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Making up for missed classes

There is no possibility to make up.

Reading material

- Obligatory literature
  - Literature developed by the Department
    Lecture slides (in pdf format) will be available for the students. WEB links and additional on line materials will be included as well.
- Notes
  Lecture slides (in pdf format) will be available for the students. WEB links and additional on line materials will be included as well.
- Recommended literature
  Lecture slides (in pdf format) will be available for the students. WEB links and additional on line materials will be included as well.

Lectures

1. Human genome project, gene therapy, epigenetics
   Dr. Veres Balázs
2. DNA sequencing, PCR, CSI
   Dr. Veres Balázs
3. Playing God: synthetic biology
   Dr. Veres Balázs
4. You are what you eat: GMO
   Dr. Veres Balázs
5. Superman: doping in sport and brain doping
   Dr. Veres Balázs
6. Dependence: biochemistry of alcohol and drugs
   Dr. Veres Balázs
7. Falling down: apoptosis, necrosis, autophagy
   Dr. Veres Balázs
   Dr. Veres Balázs
9. Biochemistry of neurodegenerative disorders
   Dr. Veres Balázs
10. Antibiotics: past, present, future
    Dr. Veres Balázs
11. Home delivery: nanoparticles, liposomes
    Dr. Veres Balázs
12. Nature strikes back: toxins of plants, fungi and animals
    Dr. Veres Balázs
Practices
Seminars

Exam topics/questions

Exam topics are the topics of the lectures during the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-EXT-T**  
**Extraction and Chromatographic Techniques in Medicinal Plant Analysis**

*Course director:*  
DR. TIMEA BENCSIK, assistant professor  
Department of Pharmacognosy  
timea.bencsik@aok.pte.hu

2 credit • midterm grade • Optional subject • spring semester • recommended semester: 4  
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours  
Course headcount limitations (min.-max.): 5 – 20  
Prerequisites: OAA-ORK-T completed + OAA-BEB-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

With the increasing demand for herbal medicinal products, nutraceuticals, and natural products for health care all over the world, medicinal plant extract manufacturers and essential oil producers have started using the most appropriate extraction and chromatographic technologies in order to produce and standardize extracts and essential oils of defined quality. The aim of this course is to introduce the most important extraction methods and chromatographic techniques used in the research of medicinal plants. Students should be able to apply the acquired knowledge in their medical or pharmaceutical practice.

Task: To introduce state-of-the-art extraction techniques (maceration, infusion, digestion, decoction, percolation, Soxhlet, ultrasound extraction, supercritical fluid extraction, water and steam distillation, enfleurage, expression) and chromatographic analyses (column chromatography, thin layer chromatography, high pressure liquid chromatography) of medicinal plants and their role in the production of herbal medicines. Some applications, relating to different classes of substances, are presented to demonstrate the versatility of various chromatographic techniques.

Requirements: students have to know the most frequent extraction and analytical techniques used in medicinal and aromatic plant research.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

One written exam during the semester, the acceptance level is 60%. One oral presentation by students.

**Making up for missed classes**

There is no possibility to make up for a missed lecture and practice.

**Reading material**

- **Obligatory literature**
- Literature developed by the Department  
  PowerPoint presentations prepared by lecturers.
- **Notes**
- **Recommended literature**

**Lectures**

1. Introduction of the course requirements. An Overview of Extraction Techniques for Medicinal and Aromatic Plants.  
   Dr. Bencsik Timea
2. Chromatographic seminar: TLC.  
   Dr. Benkő András Antal
2. Introduction of state-of-the-art extraction techniques: maceration, infusion, digestion, decoction, percolation, Soxhlet, ultrasound extraction, supercritical fluid extraction, water and steam distillation, enfleurage, expression.  
   Dr. Bencsik Timea
2. Chromatographic seminar: HPLC.  
   Dr. Bencsik Timea
Introduction to Analytical Separations.
Dr. Benkő András Antal

Techniques for the Purposes of Botanical Research.
Dr. Benkő András Antal

Planar Chromatography: TLC.
Dr. Benkő András Antal

Role of Different Procedures and Test Systems in the Knowledge of Herbal Substances.
Dr. Benkő András Antal

Column Chromatography Systems: GC.
Dr. Benkő András Antal

Column Chromatography Systems: HPLC.
Dr. Benkő András Antal

Detectors Used in Different Separation Techniques and their Role in Qualitative and Quantitative Analysis.
Dr. Benkő András Antal

Classification of Detectors Based on their Sensitivity and Selectivity.
Dr. Benkő András Antal

Role of thin layer chromatography (TLC) in detecting microbiological processes: TLC-Bioautography.
Dr. Horváth Györgyi

Antimicrobial activity of essential oils using TLC-Bioautography.
Dr. Horváth Györgyi

Isolation and identification of carotenoids from medicinal plants.
Dr. Molnár Péter

Role of column liquid chromatography (CLC) in carotenoid research.
Dr. Molnár Péter

Examination of honeys, sugars, polyphenols.
Dr. Farkas Ágnes

Examination of honeys, sugars, polyphenols.
Dr. Farkas Ágnes

Identification of specific metabolites in herbal products. Adulterated dietary supplements.
Dr. Bencsik Timea

Identification of specific metabolites in herbal products with TLC.
Dr. Bencsik Timea

Isolation and Identification of flavonoids in medicinal plants.
Dr. Papp Nóra

Isolation and Identification of flavonoids in medicinal plants.
Dr. Papp Nóra

Quality of herbal products; our experiences in the Department of Pharmacognosy.
Dr. Bencsik Timea

Quality of herbal products; our experiences in the Department of Pharmacognosy.
Dr. Bencsik Timea

Student’s lecture.
Dr. Bencsik Timea

Student’s lecture.
Dr. Bencsik Timea

Written test.
Dr. Bencsik Timea

Written test.
Dr. Bencsik Timea

Practices

Seminars

Exam topics/questions

The topics of the 1 written test are similar to the topics of the lectures.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Bencsik Timea (MIVXFC), Dr. Benkő András Antal (VF70AV)
### Advanced Physiology 2

**Course director:** Dr. Tamás Ollmann, assistant professor  
Institute of Physiology  
email: tamas.ollmann@aok.pte.hu

<table>
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<tr>
<th>1 credit</th>
<th>midterm grade</th>
<th>Optional subject</th>
<th>spring semester</th>
<th>recommended semester: 4</th>
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**Number of hours/semester:**  
0 lectures + 0 practices + 12 seminars = total of 12 hours

**Prerequisites:**  
OAA-BI2-T completed + OAA-BEB-T completed + OAA-MB2-T completed

### Topic

Discussion of physiological topics, that not belong to the core subject. Real examples and case studies. The aim of the subject is to understand the deep, advanced physiological knowledge and complete the core subject. It can help to understand another subjects based on physiology as well. Topics of the second semester: endocrinology, nervous system, muscle, sensory organs.

### Conditions for acceptance of the semester

Maximum of 25% absence allowed

### Mid-term exams

Written exam on the last seminar. If missed, oral exam until the end of the semester.

### Making up for missed classes

not necessary

### Reading material

<table>
<thead>
<tr>
<th>- Obligatory literature</th>
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</table>
| - Literature developed by the Department  
  the slides will be available |
| - Notes |
| - Recommended literature  
  Guyton & Hall: Textbook of Medical Physiology |

### Lectures

**Practices**

<table>
<thead>
<tr>
<th>Seminar</th>
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### Exam topics/questions

similar to seminar topics

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

### Participants

Dr. Ollmann Tamás (MP0EAP)
The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

The course is offered for all the interested participants who would like to learn Hungarian as a foreign language. The Hungarian for Foreigners 4 course focuses on further expansion of students’ vocabulary and oral skills. Students are introduced to more complex grammar. 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**

Maximum of 15% absence allowed

**Mid-term exams**

The course ends with an oral and written exam. You can take part in the exam, with a min. 85% attendance rate.

**Making up for missed classes**

Medical certificate is accepted.

**Reading material**

- **Obligatory literature**
  
  Szita Szilvia - Pelcz Katalin: MagyarOK 2.
  
  [www.magyar-ok.hu](http://www.magyar-ok.hu)

- **Literature developed by the Department**
  
  Szita Szilvia - Pelcz Katalin: MagyarOK 2.
  
  [www.magyar-ok.hu](http://www.magyar-ok.hu)

- **Notes**

- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

1. A középiskolában
2. A középiskolában
3. A középiskolában
4. Iskolarendszerek
5. Iskolarendszerek
6. Iskolarendszerek
7. Egyetemi tapasztalatok: a szemeszter
8. Egyetemi tapasztalatok: a szemeszter
9. Egyetemi tapasztalatok: a szemeszter
10. Egyetemi tapasztalatok: a vizsgaidőszak
11. Egyetemi tapasztalatok: a vizsgaidőszak
12. Egyetemi tapasztalatok: a vizsgaidőszak
13. Egyetemek a világban
14. Egyetemek a világban
15. Egyetemek a világban
16. Nyelvtanulás
17. Nyelvtanulás
18. Nyelvtanulás
19. Állásinterjú
20. Állásinterjú
Exam topics/questions
Successful oral and written exam at the end of the course.

Topics:
A középiskolában
Iskola rendszerek
Egyetemi tapasztalatok: a szemeszter
Egyetemi tapasztalatok: a vizsgaidőszak
Egyetemek a világban
Nyelvtanulás
Állásinterjú
Munkatársak
Munkahelyi telefonbeszélgetések
Szolgáltatások
A jövő munkahelye
Utazási szokások
Nyaralás Magyarországon és az Ön országában
Időjárás
Wellness-hétvége
Kirándulás Pécsre
Egészséges életmód
Segítség! Vendégek jönnek!

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Dr. Pelcz Katalin (HBH9IN)
**OAF-JAV-T  SIGNAL TRANSDUCTION**

**Course director:**

**DR. FERENC BOLDIZSÁR, associate professor**

Department of Immunology and Biotechnology • boldizsar.ferenc@pte.hu

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4</th>
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</thead>
<tbody>
<tr>
<td>Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours</td>
</tr>
<tr>
<td>Course headcount limitations (min.-max.): 5 – 20</td>
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<tr>
<td>Prerequisites: none</td>
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</table>

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Novel antibodies against receptors, protein kinase inhibitors, and antisense oligonucleotides targeting both signal transduction and gene expression will predominate the therapeutic approaches in the coming decades. The course focuses on the therapeutic potential for targeting cell signaling mechanisms with particular attention to cancer therapies and inflammatory signaling pathways as well as immunomodulation. General concepts of inter-and intracellular signal transduction: receptor-mediated signal transduction, cell surface receptors, steroid hormone and nuclear receptors and their cytoplasmic signal transduction and nuclear responses, apoptotic cell signaling will be discussed together with the novel approaches to drug discovery in signal transduction.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

**Making up for missed classes**

**Reading material**

- **Obligatory literature**
  2. Gutkind, J. Silvio (ed.): Signal Transduction and Human Disease, John Wiley & Sons, Inc.

- **Literature developed by the Department**
  www.immbio.hu

- **Notes**

- **Recommended literature**
  Frederick Marcus: Bioinformatics and Systems Biology: Collaborative Research and Resources, Springer, 2008

**Lectures**

1. Introduction, overlap with other disciplines.
   Dr. Boldizsár Ferenc
2. Overview of extracellular signaling.
   Dr. Boldizsár Ferenc
3. Families of extracellular receptors.
   Dr. Boldizsár Ferenc
4. Second messengers (cAMP).
   Dr. Boldizsár Ferenc
5. Receptor tyrosine kinases.
   Dr. Boldizsár Ferenc
6. The Ca2+ signal.
   Dr. Boldizsár Ferenc
7. Transcription factors.
   Dr. Boldizsár Ferenc
8. T cell activation and signaling.
   Dr. Boldizsár Ferenc
9. Signaling in the specific immune system: B cell signaling.
   Dr. Boldizsár Ferenc
10. Cytokine/chemokine signaling
    Dr. Boldizsár Ferenc
11. Receptors with intrinsic enzymatic activity (insulin, growth factors).
    Dr. Najbauer József
<table>
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<tr>
<th>#</th>
<th>Topic</th>
<th>Instructor</th>
</tr>
</thead>
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<tr>
<td>12</td>
<td>G-protein-linked receptors (epinephrine, serotonin, glucagon).</td>
<td>Dr. Najbauer József</td>
</tr>
<tr>
<td>13</td>
<td>Signaling in tumor cells (EGF-R, Her-2R, adhesion molecules).</td>
<td>Dr. Najbauer József</td>
</tr>
<tr>
<td>14</td>
<td>Intracellular/nuclear receptor signaling (steroid hormones and thyroxin).</td>
<td>Dr. Boldizsár Ferenc</td>
</tr>
<tr>
<td>15</td>
<td>Non-genomic steroid hormone signaling pathways. Receptor interactions, signaling cross-talk.</td>
<td>Dr. Boldizsár Ferenc</td>
</tr>
<tr>
<td>16</td>
<td>Apoptosis signaling.</td>
<td>Dr. Boldizsár Ferenc</td>
</tr>
<tr>
<td>17</td>
<td>Fc gamma Receptor signaling</td>
<td>Dr. Berki Timea</td>
</tr>
<tr>
<td>18</td>
<td>Fc epsilon Receptor signaling</td>
<td>Dr. Berki Timea</td>
</tr>
<tr>
<td>19</td>
<td>Signaling in the innate immune system: CR signaling.</td>
<td>Dr. Najbauer József</td>
</tr>
<tr>
<td>20</td>
<td>Signaling in the innate immune system: TLR signaling.</td>
<td>Dr. Najbauer József</td>
</tr>
<tr>
<td>21</td>
<td>Signaling in the nervous system (Neurotransmitters).</td>
<td>Dr. Najbauer József</td>
</tr>
<tr>
<td>22</td>
<td>Ion channels. (Acetylcholine)</td>
<td>Dr. Najbauer József</td>
</tr>
<tr>
<td>23</td>
<td>Wnt receptor signaling.</td>
<td>Dr. Boldizsár Ferenc</td>
</tr>
<tr>
<td>24</td>
<td>Pharmacological influence of the signaling.</td>
<td>Dr. Boldizsár Ferenc</td>
</tr>
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</table>

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
## POISONOUS AND VENOMOUS ANIMALS, ANIMAL POISONINGS

**Course director:** Dr. Gellért Gerencsér, assistant professor
Department of Public Health Medicine • gellert.gerencser@gmail.com

<table>
<thead>
<tr>
<th>2 credit • midterm grade • Optional subject • both semesters • recommended semester: 4</th>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong></td>
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<tr>
<td><strong>Course headcount limitations (min.-max.):</strong></td>
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<tr>
<td><strong>Prerequisites:</strong></td>
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### Topic

Worldwide more and more people keep those animals (with or without permission) which are capable to cause severe poisonings. Nevertheless more and more people traveling abroad which means high risk to get animal-related toxicity. The course tries to familiarize the students with the theoretical and practical background of poisoning caused by the most important animal groups, including the venom characteristics, pathophysiology and basic medical care actions.

### Conditions for acceptance of the semester

Maximum of 25 % absence allowed

### Mid-term exams

A simple choice test has to be done on the last lecture.

### Making up for missed classes

No possibility

### Reading material

- **Obligatory literature**
  - There isn’t.
- **Literature developed by the Department**
  - In Neptun.
- **Notes**
  - There isn’t.
- **Recommended literature**

### Lectures

1. Introduction and basic concepts
   - Bérczi Bálint Dániel
2. Statistical data on animal poisonings
   - Bérczi Bálint Dániel
3. Sponge related envenomations
   - Bérczi Bálint Dániel
4. Cnidaria caused envenomations, case-reports (the Portuguese Man-O-War and Box jellyfish related envenomations)
   - Bérczi Bálint Dániel
5. Molluscs poisonings I., Shellfishes, case reports (shellfish related poisonings)
   - Bérczi Bálint Dániel
6. Molluscs poisonings II., Snails, case reports (Cone shell related poisonings)
   - Bérczi Bálint Dániel
7. Molluscs poisonings III., Cephalopodes, case reports (Common blue-ringed octopus related poisonings)
   - Bérczi Bálint Dániel
8. Annelids and Echinoderms poisonings, case reports
   - Bérczi Bálint Dániel
9. Arthropods poisonings, Crustacea and Centipede related poisonings, case reports
   - Bérczi Bálint Dániel
10. Poisoning caused by insects (butterflies, diptera, ants, bees and wasps), case reports (butterflies, wasp and bee related envenomations)
    - Bérczi Bálint Dániel
<table>
<thead>
<tr>
<th>No.</th>
<th>Topic</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Arachnid poisoning I. (spiders), case reports (Black widow, Loxosceles sp.)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>12</td>
<td>Arachnid poisoning II. (scorpions, ticks and mites), case reports (american scorpions, ticks)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>13</td>
<td>Fish and Amphibians poisoning I. (active), case reports (rays, scorpion-, fire-, stonefish)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>14</td>
<td>Fish and Amphibians poisoning II. (passive), case reports (tetrodotoxin, ciguatera-, scombrototoxin)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>15</td>
<td>Amphibian poisonings, case reports (toads, newt related poisonings)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>16</td>
<td>Reptiles and lizards poisoning, case reports (lizard related envenomations)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>17</td>
<td>Snakebite poisoning I.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>18</td>
<td>Snakebite poisoning II.</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>19</td>
<td>Snakebite poisonings III., case reports</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>20</td>
<td>The mechanism of snake related venoms</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>21</td>
<td>Poisoning caused by Birds, case reports (pitohui and quail envenomations)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>22</td>
<td>Poisoning caused by Mammals, case reports (shrews and platypus related envenomations)</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>23</td>
<td>The general medical care of animal poisonings</td>
<td>Bérczi Bálint Dániel</td>
</tr>
<tr>
<td>24</td>
<td>Medical care and treatment of snakebite poisonings</td>
<td>Bérczi Bálint Dániel</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

**In Neptun**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
OAF-MHU-T  MEDICAL HUMANITIES WITH INTERNATIONAL PERSPECTIVE

Course director: DR. ATTILA GÁBOR SIK, senior research fellow
Institute of Transdisciplinary Discoveries - Director of Innovation, Institute of Physiology • sik.attila@pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 50  Prerequisites: none

Topic

The new course of Medical Humanities aims to promote creative thinking and new perspectives on the interactions between biomedical sciences and humanities using an interdisciplinary model. It intends to introduce the humanities (philosophy, ethics, history, literature, law and religion), social science (psychology, sociology, anthropology, cultural studies, health geography), arts (literature, theater, film, visual arts) in a biomedical context. It will provide, whenever necessary, humanities and social science skills and will introduce the participants to a range of creative approaches. The course is mainly designed for biomedical students who are interested in expanding their understanding of the medical world. The classes will be delivered by members of the Institute of Transdisciplinary Discoveries (ITD) and lecturers (domestic and international) from other academic disciplines.

Aims of the course are to:

- Provide an introduction to the main issues and themes in medical humanities, the study of medicine and healthcare using analytical methods drawn from across the humanities and social sciences, and creative exploration of these issues.
- Provide opportunities to study and creatively engage with particular topics of historical and contemporary significance in depth.
- Encourage and support the development of analytical and creative skills in understanding the changing forms and functions of medicine and healthcare in society.
- Encourage and support the development of transferable writing and presentational skills of the highest standard, and thereby prepare students for further academic study or employment.
- Provide an introduction to humanities and social science research methods, including use of libraries, archives, databases, and oral history, qualitative thematic analysis and ethnography.
- Prepare students for the completion of a major piece of individual research and writing in the form of a dissertation or a portfolio of creative work with scholarly commentary.

Conditions for acceptance of the semester

None

Mid-term exams

No mid-semester tests

Making up for missed classes

After 3 missed classes the semester signature is automatically denied, there is no possibility to make up for the missed classes.

Reading material

- **Obligatory literature**

- **Literature developed by the Department**
  Lecture materials by the teachers and their publications on this topic

- **Notes**
  none

- **Recommended literature**
Lectures

1. Introduction to the Course: What is Humanities and how it applies in Medicine?
   Emil Crisan Toescu, Dr. László Jankovits, Mate Deak
2. Introduction to the Course: What is Humanities and how it applies in Medicine?
   Emil Toescu Crisan, Dr. László Jankovits, Mate Deak
3. When it all begun: Greek, Roman, Arabic and the Human Values;
   Dr. László Jankovits, Mate Deak
4. When it all begun: Greek, Roman, Arabic and the Human Values;
   Dr. László Jankovits, Mate Deak
5. Theatre, Literature and Arts in Medicine: from Ancient to Modern;
   Dr. László Jankovits
6. Theatre, Literature and Arts in Medicine: from Ancient to Modern;
   Dr. László Jankovits
7. Medicine in the 18th Century and the birth of the Clinic;
   Dr. Tamás Molnár F., Daniel Bagi
8. Medicine in the 18th Century and the birth of the Clinic;
   Dr. Tamás Molnár F., Daniel Bagi
9. Birth of Modern Medicine - from Cells to Germs;
   Emil Crisan Toescu
10. Birth of Modern Medicine - from Cells to Germs;
    Emil Crisan Toescu
11. The Medical Model and the medicalization of the society;
    Emil Crisan Toescu, Dr. Attila Gábor Sik
12. The Medical Model and the medicalization of the society;
    Emil Toescu
    Emil Crisan Toescu, Dr. Attila Gábor Sik
    John Holmes
    John Holmes
15. The danger of Scientism: neuromania as an example;
    Emil Toescu, Attila Sik
    Emil Crisan Toescu, Dr. Attila Gábor Sik
16. The danger of Scientism: neuromania as an example;
    Emil Toescu, Attila Sik
    Emil Crisan Toescu, Dr. Attila Gábor Sik
17. Legal Questions in Medicine (AI, Intellectual Property);
    Dr. Judit Zeller, Noemi Liber
18. Legal Questions in Medicine (AI, Intellectual Property);
    Dr. Judit Zeller, Noemi Liber
19. Decision or Predestination? Ethics of Abortion and Euthanasia;
    Dr. Judit Zeller
20. Decision or Predestination? Ethics of Abortion and Euthanasia;
    Dr. Judit Zeller
21. The Ethics of Artificial Intelligence, Drones and Robots in Medicine;
    Dr. Géza György Várady
22. Clinician-patient communication to Enhance Health Outcomes;
    Dr. Ágnes Erika Csikós
23. What is value in healthcare?
    Dr. Antal Tamás Zemplényi
24. Exit to Eternity? Life and Death in Assisted Living;
    Dr. Katalin Judit Füzér, Dr. Judit Zeller

Practices

Seminars

Exam topics/questions

A submitted 2500-word long essay (the student will have the choice of one title out of an offer of 3-5 titles proposed, and the essay will be written, in English, by the student over a period of two weeks, and submitted for marking by academic staff). For example: Theater and medicine in the early modern ages, Healthcare for everyone or privilege of the rich?
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
## OAF-OBQ-T  MEDICAL BIOCHEMISTRY - QUESTIONS AND ANSWERS

**Course director:** Dr. Gyöngyi Nagyné Kiss, assistant professor

**Course director:** Gyöngyi Nagyné Kiss, assistant professor

### Course director:

- **Department:** Department of Biochemistry and Medical Chemistry
- **Email:** gyongyi.nagyny@aok.pte.hu

### Course Overview

- **Credit:** 2
- **Midsemester Grade:** Optional subject
- **Semester:** Spring semester
- **Recommended Semester:** 4

### Course Details

- **Number of Hours/semester:**
  - 24 lectures + 0 practices + 0 seminars = total of 24 hours
- **Course Headcount Limitations:**
  - Min. - Max.: 2 - 200
- **Prerequisites:**
  - OAA-BKA-T completed

### Topic

The course is aimed to support the successful accomplishment of the final exam „Medical Biochemistry“. In the classroom the brief summary of the theory related to the actual topic will be followed by discussing explicit questions (multiple choice and open questions as well) in order to deepen the understanding of the material along with the preparation for the written exam. In order to help preparation the topics of this course will discuss the lectures and practices of the main course, but shifted in time.

### Conditions for Acceptance of the Semester

- Maximum of 25% absence allowed

### Mid-term Exams

- Oral presentations must be held during the semester.
- Make-up opportunities are in accordance with the Code of Studies and Examinations.

### Making up for Missed Classes

- No opportunity to make-up missed classes.

### Reading Material

- **Obligatory Literature**
  - Literature developed by the Department
- **Notes**
- **Recommended Literature**

### Lectures

1. **Introduction**
   - Dr. Nagyné Dr. Kiss Gyöngyi
2. **Cellular signaling, Biochemistry of sensing**
   - Dr. Nagyné Dr. Kiss Gyöngyi
3. **Lipoproteins, Biochemistry of the plasma membrane**
   - Dr. Takátsy Anikó
4. **ER, golgi**
   - Dr. Takátsy Anikó
5. **Macronutrients, Biochemistry of digestion**
   - Köszegi Balázs
6. **Vitamines, trace elements**
   - Köszegi Balázs
7. **Iron metabolism, Liver functions**
   - Dr. Kovács Krisztiina
8. **Alcohol metabolism**
   - Dr. Kovács Krisztiina
9. **Oxidative stress induced signaling, Mitochondria**
   - Dr. Agócs Attila
10. **Biochemistry of inflammation, Biochemistry of the joints**
    - Dr. Agócs Attila
11. **Student presentations 1**
    - Dr. Nagyné Dr. Kiss Gyöngyi
12 Student presentations 2  
Dr. Nagyné Dr. Kiss Gyöngyi  
13 Regulation of blood pH, Molecular mechanisms of glucose uptake  
Dr. Jakus Péter  
14 Biochemistry of diabetes  
Dr. Jakus Péter  
15 Functions of the blood vessels, Regulation of blood pressure  
Dr. Berente Zoltán  
16 Biochemistry of cardiovascular damages  
Dr. Berente Zoltán  
17 Plasma proteins, Genetic disorders of hemoglobin  
Dr. Nagyné Dr. Kiss Gyöngyi  
18 Student presentations 3  
Dr. Nagyné Dr. Kiss Gyöngyi  
19 Cell cycle, Biochemistry of cell death  
Dr. Bognár Zita  
20 Oncogenes, tumorsupressor genes  
Dr. Bognár Zita  
21 Extracellular matrix, Matrix metalloproteinases  
Dr. Tapodi Antal  
22 Cytoskeleton  
Dr. Tapodi Antal  
23 Biochemistry of the central nervous system 1  
Dr. Nagyné Dr. Kiss Gyöngyi  
24 Biochemistry of the central nervous system 2  
Dr. Nagyné Dr. Kiss Gyöngyi  

Practices  
Seminars  
Exam topics/questions  

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  
Participants
OAF-PCS-T  Bone Pathology

Course director: 
DR. LÁSZLÓ MÁRK, associate professor
Department of Biochemistry and Medical Chemistry • laszlo.mark@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4
Number of hours/semester: 22 lectures + 0 practices + 0 seminars = total of 22 hours
Course headcount limitations (min.-max.): 3 – 50
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 pathogenes.
Evolution of Mycobacterium.

Conditions for acceptance of the semester

Written exam. Max. absences: 20%.

Mid-term exams
Not possible

Making up for missed classes
Not possible.

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture slides and notes.
- Notes
- Recommended literature
  A.C. Aufderheide: Cambridge Encyclopedia of Human Paleopathology, 1998
  Palfi et al: Tuberculosis Past and Present, 1999

Lectures
1 Introduction
   Dr. Márk László
2 The paleopathology, an interdisciplinary science
   Dr. Márk László
3 Chemical composition and biochemistry of the bone tissue
   Dr. Márk László
4 Chemical composition and biochemistry of the bone tissue
   Dr. Márk László
5   Sex determination techniques  
    Dr. Márk László

6   Lifetime determination  
    Dr. Márk László

7   Congenital alterations. Trauma  
    Dr. Márk László

8   Trepanations  
    Dr. Márk László

9   Tuberculosis  
    Dr. Márk László

10  Tuberculosis  
    Dr. Márk László

11  Lepra  
    Dr. Márk László

12  Lepra  
    Dr. Márk László

13  Syphilis  
    Dr. Márk László

14  Syphilis  
    Dr. Márk László

15  The Pest  
    Dr. Márk László

16  The Pest  
    Dr. Márk László

17  Osteo-necrotic alterations, dystrophies  
    Dr. Márk László

18  Osteocarcinoma, bone tumors  
    Dr. Márk László

19  Joint diseases  
    Dr. Márk László

20  Oral paleopathology  
    Dr. Márk László

21  Determination of molecular biomarkers  
    Dr. Márk László

22  Paleoproteomics. Evolution of the human pathogenes  
    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.
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-QBI-T Quantum Biology: Quantum Phenomena in Biological Processes

Course director: Dr. Krisztian Kvell, associate professor
Department of Pharmaceutical Biotechnology • kvell.krisztian@pte.hu

2 credit • midterm grade • Optional subject • spring semester • recommended semester: 4
Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 3 – 50
Prerequisites: OAA-MB2-T completed

Topic

Course description:
Based on common scientific approach quantum phenomena are not relevant in biological processes. The living cell has relatively large dimensions, is filled with hydrated vibrating macromolecules, and follows the rules thermodynamics rather than quantum mechanics. Yet, besides attractive theories, experimental data also accumulate suggesting that living cells readily exploit quantum phenomena. Several biological processes require quantum biology approach for full understanding. These include photosynthesis, various enzyme activities, DNA mutation accumulation, avian magnetoreception, mammalian olfaction etc. During the course students get familiar with the quantum biology explanation of these biological processes.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

There will be several occasions for the students to rewrite midterm tests.

Making up for missed classes

Students will get e-learning material to cope to follow the course at home.

Reading material

- Obligatory literature

- Literature developed by the Department
  Topics:
  - Quantum phenomena and basics terms
  - Thermodynamics vs quantum mechanics
  - Structural characteristics of biological macromolecules
  - Quantum biology approach of the living cell
  - Quantum biology approach of cell death
  - Quantum biology approach of molecular energy transport
  - Quantum biology approach of genetic mutation accumulation
  - Quantum biology approach of photosynthesis
  - Quantum biology approach of enzyme activity
  - Quantum biology approach of avian magnetoreception
  - Quantum biology approach of mammalian olfaction
  - Quantum biology approach of the conscious mind
  - Basic principles of quantum computers and quantum biology analogies
  - Written exam

- Notes

- Recommended literature

Lectures

1. Quantum phenomena and basics terms I.
   Dr. Lukács András Szilárd

2. Quantum phenomena and basics terms II.
   Dr. Lukács András Szilárd
3 Thermodynamics vs quantum mechanics I.
   Dr. Lukács András Szilárd
4 Thermodynamics vs quantum mechanics II.
   Dr. Lukács András Szilárd
5 Structural characteristics of biological macromolecules I.
   Dr. Kvell Krisztián
6 Structural characteristics of biological macromolecules II.
   Dr. Kvell Krisztián
7 Quantum biology approach of the living cell I.
   Dr. Ábrahám István Miklós
8 Quantum biology approach of the living cell II.
   Dr. Ábrahám István Miklós
9 Quantum biology approach of cell death I.
   Dr. Ábrahám István Miklós
10 Quantum biology approach of cell death II.
    Dr. Ábrahám István Miklós
11 Quantum biology approach of molecular energy transport I.
    Dr. Pál Szilárd
12 Quantum biology approach of molecular energy transport II.
    Dr. Pál Szilárd
13 Quantum biology approach of genetic mutation accumulation I.
    Dr. Kvell Krisztián
14 Quantum biology approach of genetic mutation accumulation II.
    Dr. Kvell Krisztián
15 Written exam
    Dr. Kvell Krisztián
16 Quantum biology approach of photosynthesis I.
    Dr. Hoffmann Gyula
17 Quantum biology approach of photosynthesis II.
    Dr. Hoffmann Gyula
18 Quantum biology approach of enzyme activity I.
    Dr. Pál Szilárd
19 Quantum biology approach of enzyme activity II.
    Dr. Pál Szilárd
20 Quantum biology approach of avian magnetoreception I.
    Dr. Hoffmann Gyula
21 Quantum biology approach of avian magnetoreception II.
    Dr. Hoffmann Gyula
22 Quantum biology approach of mammalian olfaction I.
    Dr. Hoffmann Gyula
23 Quantum biology approach of mammalian olfaction II.
    Dr. Hoffmann Gyula
24 Quantum biology approach of the conscious mind I.
    Dr. Sik Attila Gábor
25 Quantum biology approach of the conscious mind II.
    Dr. Sik Attila Gábor
26 Basic principles of quantum computers and quantum biology analogies I.
    Dr. Kvell Krisztián
27 Basic principles of quantum computers and quantum biology analogies II.
    Dr. Kvell Krisztián
28 Written exam
    Dr. Kvell Krisztián

Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Ábrahám István Miklós (HQ9FH), Dr. Hoffmann Gyula (JB4TQB), Dr. Kvell Krisztián (Y0GLOV), Dr. Lukács András Szilárd (LZ2I4Q), Dr. Miskei György Zsolt (PTAG3C), Dr. Pál Szilárd (FYF5E9), Dr. Sik Attila Gábor (A12OXW)
OAF-SMG-T  **PRACTICE-ORIENTED SPORTS MEDICINE**

**Course director:**
DR. TIBOR MINTÁL, assistant professor
Sports Medicine Center • mintal.tibor@pte.hu

| 1 credit • midterm grade • Optional subject • spring semester • recommended semester: 4 |
| Number of hours/semester: 8 lectures + 4 practices + 0 seminars = total of 12 hours |
| Course headcount limitations (min.-max.): 5 – 20 |
| Prerequisites: none |

**Topic**
During the past couple of decades sports medicine has evolved from being an area of medical practice concerned with the treatment of sports injuries to becoming an interdisciplinary subspecialty that integrates and implements scientific discoveries into everyday practice dedicated to comprehensive athlete health management. We believe that with the support and effort from our multidisciplinary team we can provide complete care to athletes as individuals thus enabling them to perform at their very best with minimal health risk. Our course aims to outline the basic theoretical, practical aspects and our holistic approach of sports medicine. Besides clinical care we focus on possible applications of basic and applied research.

**Conditions for acceptance of the semester**
Maximum of 25 % absence allowed

**Mid-term exams**
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**Making up for missed classes**
Depending on individual agreement with the course director

**Reading material**
- **Obligatory literature**
  ---
- **Literature developed by the Department**
  Materials will be uploaded to the Department's website
- **Notes**
  saját jegyzet
- **Recommended literature**
  ---

**Lectures**
1 Basic Research in Sports Medicine
   Dr. Patczainé Dr. Göcze Katalin Réka
2 Sports selection, anthropometry
   Szabó Dorottya
3 Sports psychology
   Dr. Birkás Béla
4 Effects of sports nutrition, doping
   Dr. Patczainé Dr. Göcze Katalin Réka
5 Overload syndromes, typical sports injuries
   Case reports
   Dr. Váncsodi József
6 Sports cardiology, sudden heart death
   Dr. Sárszegi Zsolt
7 Disability sport
   Dr. Dömse Eszter
8 Manual therapy, sport physiotherapy
   Szabó Dorottya

**Practices**
1 Practice: physical and functional tests, monitoring on the field
2 Radiological imaging of sport injuries, US practice
3 Meniscus injuries, meniscal repair manual practice
4 Manual practice: arthroscopy
Seminars

Exam topics/questions

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Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Birkás Béla (S7SEOS), Dr. Dömse Eszter (IDEBMG), Dr. Patczainé Dr. Göcze Katalin Réka (YS4QMI), Dr. Sárszegi Zsolt (O4X5WW), Dr. Váncsodi József (HW4DB2), Ecet Géza István (GGYS9E), Szabó Dorottya (LMHCHS)
OAF-TKE-T  THE ETHICS OF SCIENTIFIC RESEARCH

Course director: Tibor Szolcsányi, assistant professor
Department of Behavioural Sciences • tibor.szolcsanyi@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 25  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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
Maximum of 25% absence allowed

Mid-term exams
Written test taking place in the last class. To improve the grade, the test can be repeated two times in the first two weeks of the exam period. Oral exam is also an option for that purpose.

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

Reading material

- Obligatory literature
  --

- Literature developed by the Department
  Additional materials: Neptun MeetStreet

- Notes
  --

- Recommended literature

Lectures
Practices
Seminars
1 Introduction
2 Introduction
3 Rationality and ethics
4 Rationality and ethics
5 The methodology of scientific research in natural sciences, and its ethical implications
6 The methodology of scientific research in natural sciences, and its ethical implications
7 The ethical concerns of clinical trials
8 The ethical concerns of clinical trials
9 The ethical concerns of clinical trials
10 The ethical concerns of clinical trials
11 Ethical problems raised by animal experimentation
12 Ethical problems raised by animal experimentation
13 The placebo effect
14 The placebo effect
15 Ethics and scientific achievement
16 Ethics and scientific achievement
17 Gene-ethics
18 Gene-ethics II.
19 The ethics of stem cell research
20 The ethics of stem cell research II.
21 Neuroethical examples of the social impact of medical research
22 Summarizing discussion
23 Test
24 Test

Exam topics/questions

---

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Szolcsányi Tibor (HNQ526)
OAF-VAA-T  **IRON METABOLISM: FROM MOLECULAR MECHANISMS TO CLINICAL CONSEQUENCES**

**Course director:**  
DR. EDINA PANDUR, assistant professor  
Department of Pharmaceutical Biology • edina.pandur@aok.pte.hu

<table>
<thead>
<tr>
<th>1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 4</th>
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| Number of hours/semester: | 0 lectures + 0 practices + 14 seminars = total of 14 hours |
|---|

| Course headcount limitations (min.-max.): | 4 – 30 |
|---|

| Prerequisites: | none |

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**Topic**

During the course we will discuss the role of iron in the metabolism. We will deal with the iron demand of microorganisms and with the role of iron in the protective mechanisms against bacterial infections. The function of influencing factors of iron metabolism, their effects and crosstalk between them will be discussed in detail. The roles of iron containing proteins and their functions will be talked over. During the course we will emphasize the disorders of iron metabolism (iron deficiency, iron overload), their genetic backgrounds and their therapies. Based on the most actual findings the role of iron in the development of neurodegenerative diseases (Parkinson’s disease, Alzheimer’s disease and Huntington’s disease) will be also discussed.

**Conditions for acceptance of the semester**

Max. 3 absences

**Mid-term exams**

One assay and one midterm exam.

**Making up for missed classes**

Personal consultation

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - The educational materials will be uploaded to Neptune MeetStreet
- **Notes**
- **Recommended literature**
  - Robert Crichton: Iron Metabolism - From Molecular Mechanisms to Clinical Consequences

**Lectures**

**Practices**

**Seminars**

1. Solution chemistry of iron, interactions with other metal ions.
2. The Importance of Iron for Biological Systems: haemoproteins, iron-sulfur proteins, other iron containing proteins
3. Microbial Iron Transport and Metabolism
4. Iron uptake by yeasts
5. Cellular Iron Uptake and Export in Mammals: iron transporters
6. Intracellular Iron Storage and Bimineralisation: ferritin, haemosiderin
7. Intracellular Iron Metabolism and Cellular Iron Homeostasis I: Labile iron pool, mitochondrial iron uptake and metabolism haem biosynthesis
8. Intracellular Iron Metabolism and Cellular Iron Homeostasis II: synthesis of iron-sulfur clasters, functions of iron responsive elements and iron regulatory proteins
11. Iron disorders and Laboratory parameters
12. Iron and oxidative stress: cytoprotective enzymes, antioxidants, aging, role of the immune system
13. Brain iron metabolism, the role of iron in neurodegenerative diseases
14. Assay, exam

**Exam topics/questions**

Simple choice test based on the seminars.
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Nagy Tamás II (CAILG1), Dr. Pandur Edina (ZP0077), Dr. Poór Viktor Soma (SA17J1), János Gergely (U3SEOW), Pap Ramóna (OGEM0W)
OAF-VFM-T  BUSINESS DEVELOPMENT AND MANAGEMENT

Course director: DR. RITA BOGNÁR, research associate professor
Department of Biochemistry and Medical Chemistry • rita.bognar@aok.pte.hu

| Number of hours/semester: | 24 lectures + 0 practices + 0 seminars = total of 24 hours |
| Course headcount limitations (min.-max.): | 1 – 30 |
| Prerequisites: | none |

Topic
The main objective of the course is to develop the business orientation skills of the students, while deepening their knowledge in business models, business plans, innovative business strategies, time-, product-, process- and human resource management. Participants will have the capability how to develop healthcare businesses in international environment and how to plan better their time.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
TVSZ szerint

Making up for missed classes
TVSZ szerint

Reading material
- Obligatory literature
- Literature developed by the Department
  Neptun
- Notes
- Recommended literature
  1. Baum Neil, Thomas Raju : The Basics of Business of Medicine, 2015

Lectures
1. Global healthcare
   Dr. Bognár Rita
2. Different healthcare systems
   Dr. Bognár Rita
3. Regional healthcare
   Dr. Bognár Rita
4. Different types of business organisations
   Dr. Bognár Rita
5. Innovation, Innovative businesses
   Dr. Bognár Rita
6. Business Model Generation
   Dr. Bognár Rita
7. Business plan
   Dr. Bognár Rita
8. Business plan development
   Dr. Bognár Rita
9. Intercultural business communication
   Dr. Bognár Rita
10. Basics of Marketing in healthcare business
    Dr. Bognár Rita
11. Production
    Dr. Bognár Rita
12. Product and process management
    Dr. Bognár Rita
13. Quality management
    Dr. Bognár Rita
14 Time planning, Time management  
   Dr. Bognár Rita  
15 Human resource management  
   Dr. Bognár Rita  
16 Team building, Team work  
   Dr. Bognár Rita  
17 Strategic management  
   Dr. Bognár Rita  
18 Risk management  
   Dr. Bognár Rita  
19 Healthcare finance  
   Dr. Bognár Rita  
20 Introduction to accounting and financial management  
   Dr. Bognár Rita  
21 Sustainable healthcare  
   Dr. Bognár Rita  
22 Presentation methods and techniques  
   Dr. Bognár Rita  
23 Administration, Documentation, Reports  
   Dr. Bognár Rita  
24 Summary for written test  
   Dr. Bognár Rita  

 Practices  
 Seminars  
 Exam topics/questions  
 Neptun  

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  

Participants
URINARY STEROID PROFILES

Course director: DR. ANITA BUFA, assistant professor
Institute of Bioanalysis • anita.bufa@aok.pte.hu

1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 4

Number of hours/semester: 6 lectures + 6 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 15 Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The participants are going to be familiarised theoretically and practically with:
- pre-treatment of urine sample
- qualitative and quantitative analysis of 24 androgen, progesterone and corticoid metabolites by gas chromatography using mass selective detector
- evaluation of urinary steroid profiles

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
After the course a written summary.

Making up for missed classes
Consultation with course director is required. The necessary information is going to be presented on the course.

Reading material
- Obligatory literature
- Literature developed by the Department
  It is going to be available on the website.
- Notes
- Recommended literature

Lectures
1 Urinary steroid metabolites
   Dr. Bufa Anita
2 Sample pre-treatment of urine
   Dr. Bufa Anita
3 Gas chromatography-Mass spectrometry
   Dr. Bufa Anita
4 Qualitative analysis of urinary steroid metabolites
   Dr. Bufa Anita
5 Quantitative analysis of urinary steroid metabolites
   Dr. Bufa Anita
6 Evaluation of urinary steroid profile
   Dr. Bufa Anita

Practices
1 Solid-phase extraction of urinary steroid metabolites
2 Enzymatic hydrolysis of urinary steroid metabolites
3 Derivatization of urinary steroid metabolites
4 Chromatographic cleaning
5 Determination of urinary steroid profiles by GC-MS technic
6 Qualitative and quantitative analysis of urinary steroid metabolites

Seminars
Exam topics/questions
The necessary information is going to be presented on the course.
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Bufa Anita (OJC1T8)
ATT5-T  PHYSICAL EDUCATION 5

Course director: TAMÁS TÉCZELY, physical education teacher
UP MS Sports Facilities • tamas.teczely@aok.pte.hu

0 credit • signature • Optional subject • both semesters • recommended semester: 5-6-7-8-9-10-11-12

Number of hours/semester: 0 lectures + 28 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 2 – 50  Prerequisites: ATT4-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
This subject provides theoretical and practical information for the students to maintain and improve their physical condition and helps to deepen the knowledge in the field of healthy lifestyle.
Theoretical and practical knowledge during different types of exercises e.g. how to improve endurance, muscle force, motor skills and how to prevent the body from injuries.

Conditions for acceptance of the semester
Active participation at least 20 practical lessons provided by the Institute of Human Movement Sciences or regular participation of the trainings of the Medikus Sport Club or PEAC.

Mid-term exams
Making up for missed classes
We provide opportunities to attend extra lessons in the first week of the exam period in that case the requirements are not fulfilled till the end of the teaching weeks with agreement of the PE Teacher.

Reading material
- Obligatory literature
- Literature developed by the Department
  Not available.
- Notes
- Recommended literature

Lectures
Practices
1-28  For the list of actual courses please turn to the end of the Basic Module booklet

Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Farkas György (CL1MIY), Lipcsik Zoltán (EGE1AE), Németh Attila Miklós (EXB7TD), Téczely Tamás (P0OP8M)
OAE-ABE-T  INBORN ERRORS OF METABOLISM

Course director: DR. TAMÁS DECSI, professor
Department of Paediatrics • decsi.tamas@pte.hu

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

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 24  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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.

Mid-term exams

The performance of the students will be continually 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

- Obligatory literature
- Literature developed by the Department
  The teaching material will be handed out at the course.
- Notes
- Recommended literature

Lectures

1  Clinical signs and symptoms of inborn errors of metabolism
   Dr. Decsi Tamás
2  Importance of inborn errors of metabolism in paediatrics
   Dr. Decsi Tamás
3  General considerations in disturbances of amino acid metabolism
   Dr. Decsi Tamás
4  Hyperphenylalaninaemia
   Dr. Decsi Tamás
5  General considerations in disturbances of carbohydrate metabolism
   Dr. Decsi Tamás
6  Galactosaemia
   Dr. Decsi Tamás
7  Fructose intolerance
   Dr. Decsi Tamás
8  Glycogenoses
   Dr. Decsi Tamás
9  General considerations in disturbances of lipid metabolism
   Dr. Decsi Tamás
10 Fatty acid oxidation disorders
    Dr. Decsi Tamás
11 Urea cycle disorders
    Dr. Decsi Tamás
12 Future of diagnosing and treating inborn errors of metabolism
    Dr. Decsi Tamás
Practices

Exam topics/questions
Clinical signs and symptoms of inborn errors of metabolism
General considerations in disturbances of amino acid metabolism
Hyperphenylalaninaemia
General considerations in disturbances of carbohydrate metabolism
Galactosaemia
Fructose intolerance
Glycogenoses
General considerations in disturbances of lipid metabolism
Fatty acid oxidation disorders
Urea cycle disorders

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Decsi Tamás (RX95KM)
Pathophysiology of Chronic Obstructive Lung Diseases (COPD)

Course director: 
DR. MÁRTA BALASKÓ, associate professor
Institute for Translational Medicine • marta.balasko@aok.pte.hu

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

Number of hours/semester: 
12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 
3 – 100

Prerequisites: 
OAA-OBA-T completed + OAA-EL2-T completed + OAP-KO1-T 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
Maximum of 25 % absence allowed

Mid-term exams
None.

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

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture slides are uploaded to Neptun.
- Notes
- Recommended literature

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
3  Case history. Chronic bronchitis: etiology, pathogenesis, and complications. I
   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  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
12 Pathophysiological concepts of asthma treatment II. New directions of drug development. Case history.
    Dr. Balaskó Márta
Practices

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 final test score.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-DM3-T  DEMONSTRATOR ACTIVITY 3**

**Course director:**

DR. LÁSZLÓ JÓZSEF CZOPF, associate professor
1st Department of Internal Medicine • laszlo.czopf@aok.pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 5

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**Number of hours/semester:**

0 lectures + 24 practices + 0 seminars = total of 24 hours

**Course headcount limitations (min.-max.):**

1 – 300

**Prerequisites:**

OAE-DM2-T completed

---

**Topic**

This course gives support and acknowledgement for students performing documented and successful supervised teaching activities and taking an active part in organizing courses.

The subjects can be taken up in eight semesters (in a total value of 16 credits).

**Conditions for acceptance of the semester**

Students have to register every semester as demonstrators, should provide proof of previous demonstrator activity, and the semester will be signed on the basis of at least 24 hours of teaching or organizational activity. The grades will be given according to the Code of Demonstrators with additional requirements, that you can reach using the following links: Code of Demonstrator Students:

https://docs.google.com/document/d/1xkkyeRdZcDphmqWEkpoN0SQf34MpbBqogG09fd8Rrw/edit?usp=sharing

Faculty Home Page of the Circle of Demonstrator Students (DDK):


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**Mid-term exams**

At least two midsemester tests should be successfully completed to pass.

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**Making up for missed classes**

There are no absences accepted from the 24 hours demonstrator activity.

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**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

---

**Lectures**

**Practices**

**Seminars**

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**Exam topics/questions**

The topics of the tests depend on the specific course of the demonstrator activity.

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**Information** — The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

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**Participants**

Dr. Czopf László József (BAVD1M), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Sebők Judit (GLM10L), Dr. Tamás Andrea (F7QM8G), Dr. Ujvári Balázs (EN1LY9)
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

OAE-GMK-T QUALITATIVE AND QUANTITATIVE ANALYSIS OF DRUGS FROM HUMAN TISSUE

Course director: DR. ÁGNES FARKAS, associate professor

Department of Pharmacognosy • agnes.farkas@aok.pte.hu

2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 5

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

Course headcount limitations (min.-max.): 3 – 50

Prerequisites: none

Topic

The course provides knowledge about the traceability of active pharmaceutical ingredients in various biological matrices. It discusses sampling of biological matrices, sample preparation (extraction) methods [LLE, SPE, SPEC, SPME, MEPS], and various chromatographic techniques [TLC, GC, LC] as well.

The course intends to present the CNS effects of active pharmaceutical ingredients, as well as drugs in the official investigation. The sampling procedures and techniques are presented, as well as their official confidence circumstances. The appearance of drug compounds and drugs in biological matrices, and their pharmacokinetic properties are discussed, as well as traceability of live and corpse biological matrices (blood, urine, hair, nails, saliva, or liver, kidney, brain, or cerebrospinal fluid). After proper selection of analytical tests, the requirements set for a variety of measuring instruments will be discussed. Standard evaluation and communication, as well as the laws and regulations in force in the analytical results complete the course topics.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

Students have to prove their knowledge of the course material by presenting a selected topic in a short (10 min) talk. The topic should be related to one of the topics of the course, and students should rely on their knowledge acquired in previous classes.

Making up for missed classes

According to the Code of Studies and Examinations

Reading material

- Obligatory literature

- Literature developed by the Department
  - The Lecturer’s presentations (ppt files) will be available from the website of the Department of Pharmacognosy.

- Notes

- Recommended literature

Lectures

1 Introduction to Toxicology. Categorization of Toxins I
   Dr. Benkő András Antal
2 Introduction to Toxicology. Categorization of Toxins II
   Dr. Benkő András Antal
3 Effect of Poisons on the Living Body I
   Dr. Benkő András Antal
4 Effect of Poisons on the Living Body II
   Dr. Benkő András Antal
5 Investigation in Forensic Laboratories. Sampling rules. I
   Dr. Benkő András Antal
6 Investigation in Forensic Laboratories. Sampling rules. II
   Dr. Benkő András Antal
7 Investigation of Non-standard Human Tissues I
   Dr. Benkő András Antal
8 Investigation of Non-standard Human Tissues II
   Dr. Benkő András Antal
9 Biological Materials Preparation. Extraction Procedures I
   Dr. Benkő András Antal
10  Biological Materials Preparation. Extraction Procedures II
   Dr. Benkő András Antal

11  Forensic Toxicological Investigation of Human Samples by Chromatography I
   Dr. Benkő András Antal

12  Forensic Toxicological Investigation of Human Samples by Chromatography II
   Dr. Benkő András Antal

13  Criteria and Evaluation. Expert Opinion in Forensic Toxicology I
   Dr. Benkő András Antal

14  Criteria and Evaluation. Expert Opinion in Forensic Toxicology II
   Dr. Benkő András Antal

15  Natural Cannabinoids (marihuana, hashish, and hashish oil) I
   Dr. Benkő András Antal

16  Natural Cannabinoids (marihuana, hashish, and hashish oil) II
   Dr. Benkő András Antal

17  Synthetic Cannabino-mimetics (spice, pot-puri, herbal, bio-grass, K2) I
   Dr. Benkő András Antal

18  Synthetic Cannabino-mimetics (spice, pot-puri, herbal, bio-grass, K2) II
   Dr. Benkő András Antal

19  First Generation of Amphetamines (ecstasy, speed)
   Dr. Benkő András Antal

20  Second generation of disco drugs (catinon and derivatives)
   Dr. Benkő András Antal

21  Opiates (morphine, codeine, heroin) I
   Dr. Benkő András Antal

22  Opiates (morphine, codeine, heroin) II
   Dr. Benkő András Antal

23  Cocaine
   Dr. Benkő András Antal

24  Body-pack Syndrome.
   Dr. Benkő András Antal

25  Final Student ppt Presentation I
   Dr. Benkő András Antal

26  Final Student ppt Presentation II
   Dr. Benkő András Antal

27  Final Student ppt Presentation III
   Dr. Benkő András Antal

28  Final Student ppt Presentation IV
   Dr. Benkő András Antal

Practices

Seminars

Exam topics/questions

10 min ppt presentation based on an international forensic science article

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Benkő András Antal (VF70AV)
**OAE-IM1-T  IMMUNOPATHOLOGY 1**

Course director: **DR. PÉTER NÉMETH**, professor  
Department of Immunology and Biotechnology • nemeth.peter@pte.hu

<table>
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<th>2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 5</th>
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<td>Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours</td>
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<td>Course headcount limitations (min.-max.): 5 – 300</td>
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<tr>
<td>Prerequisites: OAA-IMM-T completed + OAP-PA1-T parallel</td>
</tr>
</tbody>
</table>

**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. Clinicopathological 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.

**Mid-term exams**

nincs

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
  - nincs
- **Literature developed by the Department**
  - nincs
- **Notes**
  See the [www.immbio.hu](http://www.immbio.hu) web site during the semester.

- **Recommended literature**
  - Abul K. Abbas: Cellular and Molecular Immunology
  - Janis Kuby: Immunology
  - Jan Klein: Immunology

**Lectures**

1. Introduction  
   Dr. Németh Péter
2. Basic immunopathological mechanisms  
   Dr. Németh Péter
3. Allergy  
   Dr. Németh Péter
4. Immune mechanisms in allergy  
   Dr. Németh Péter
5. Therapeutic possibilities in allergy  
   Dr. Németh Péter
6. Immunological aspects of EBOLA infection  
   Dr. Németh Péter
7. Immunology of EBOLA infection  
   Dr. Németh Péter
8. Immunity against viruses  
   Dr. Najbauer József
9. Immunological mechanisms of viral infections  
   Dr. Najbauer József
10. Tumor immunology  
    Dr. Németh Péter
11. Tumor immunology  
    Dr. Németh Péter
12 Immunotherapy of malignant tumors  
   Dr. Németh Péter  
13 Immunotherapy of malignant tumors  
   Dr. Németh Péter  
14 Oncolytic viruses  
   Dr. Najbauer József  
15 Therapeutic application of oncolytic viruses  
   Dr. Najbauer József  
16 Immunological aspects of organ transplantation  
   Dr. Németh Péter  
17 Immunological aspects of organ transplantation  
   Dr. Németh Péter  
18 Immunopathology of the post-transplant cancers  
   Dr. Németh Péter  
19 Immunopathology of the post-transplant cancers  
   Dr. Németh Péter  
20 Inherited immunodeficiency  
   Dr. Najbauer József  
21 Inherited immunodeficiency  
   Dr. Najbauer József  
22 Acquired immunodeficiency  
   Dr. Najbauer József  
23 Immunology of vaccination  
   Dr. Németh Péter  
24 Questions of immunomodulation  
   Dr. Németh Péter  

Practices  

Seminars  

Exam topics/questions  

See the www.immbio.hu web site before 4 weeks of exam period.  

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  

Participants
OAE-IMG-T IMMUNODIAGNOSTICAL METHODS

Course director: DR. TIMEA BERKI, professor
Department of Immunology and Biotechnology • berki.timea@pte.hu

1 credit • midterm grade • Elective subject • autumn semester • recommended semester: 5

Number of hours/semester: 8 lectures + 4 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 4 – 20
Prerequisites: OAA-IMG-T completed

Topic

Demonstration of the general and specific characteristics of immunological methods used in routine clinical laboratory practice and research highlighting their indications and limitations. Practical demonstration of the most important immunoserological and cellular immunological techniques. Role of the immunological methods in research, diagnostics and therapy. Establishment of theoretical and practical laboratory diagnostic background for preclinical and clinical courses.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Making up for missed classes
Individual preparation.

Reading material

- Obligatory literature
- Literature developed by the Department
  www.immbio.hu
- Notes
- Recommended literature
  Abul K. Abbas: Cellular and Molecular Immunology

Lectures

1 Introduction into the laboratory diagnostic methods
   Dr. Berki Timea
2 Immunchemistry, immunserology
   Dr. Berki Timea
3 Cellular immunological methods, flow cytometry
   Dr. Berki Timea
4 Detection of autoantibodies in systemic autoimmune diseases
   Dr. Simon Diána
5 Autoantibodies in organ specific autoimmune diseases
   Dr. Simon Diána
6 Immune mediated neurological disorders diagnostic
   Dr. Berki Timea
7 Disease associated HLA typing
   Dr. Berki Timea
8 Multiplex detection methods
   Dr. Simon Diána

Practices

1 Immunserology, ELISA
2 Immunoblot, indirect immunfluorescence for autoantibody detection
3 Phenotyping with flow cytometry
4 Cytokine detection methods, functional test
Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Berki Timea (JSDYPW), Dr. Simon Diána (F7PLEH)
OAE-KK1-T  CLINICAL PATHOPHYSIOLOGY 1

Course director:  DR. ANDRÁS GARÁMI, associate professor
Institute for Translational Medicine  andras.garami@aok.pte.hu

1 credit • midterm grade • elective subject • autumn semester • recommended semester: 5

Number of hours/semester:  12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 30  Prerequisites:  OAP-KO1-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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
Maximum of 15 % absence allowed

Mid-term exams
Test-exam
Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Székely Miklós: Principles of Pathophysiology.

Lectures
1  Systemic inflammation in the clinical praxis
   Dr. Garami András
2  Chronic heart failure, basic ways of therapy
   Dr. Halmosi Róbert
3  Clinical interpretation of ECG
   Dr. Czopf László József
4  Angina pectoris, basic forms of therapy
   Dr. Czopf László József
5  Endothel, renin-angiotensin, blood pressure
   Dr. Kovács Tibor József
6  Pulmonary embolism
   Dr. Kiss Tamás
7  Respiratory failure
   Dr. Ruzsics István
8  From hypertension to end-stage renal failure
   Dr. Kovács Tibor József
9  Sleep-apnea syndrome
   Dr. Faludi Béla
10  Electrolyte- and pH-disorders in the intensive care
    Dr. Bogár Lajos
11  Proteinuria and its interpretation
    Dr. Kelényi Gáborné (Dr. Nagy Judit)
12  Granulocyte disorders, test exam
    Dr. Rumbus Zoltán
Practices
Seminars
Exam topics/questions
Same as the topics of the lectures.
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
OAE-N65-T  TAKING MEDICAL HISTORY WITH ACTORS; SIMULATION PRACTICES IN THE MEDI SKILLS LAB 1

Course director: DR. KATALIN EKLICS-LEPENYE, assistant professor
Department of Languages for Specific Purposes • kata.eklics@aok.pte.hu

2 credit • midterm grade • Elective subject • both semesters • recommended semester: 5
Number of hours/semester:  0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 15
Prerequisites: none

Topic

"Taking medical history with actors - simulation practices in the MediSkillsLab" is an interdisciplinary course, where history taking is approached from linguistic, communicative and professional perspectives. Our professional actors - artists of the Pécs National Theatre - are trained for the patient’s role previously.

The scope of the course is detailed and structured internal medical history taking. Simulated patient interviews may be observed, recorded and analyzed during the sessions. Afterwards assessment of the interviews takes place with involvement of medical specialists to provide the authentic professional evaluation.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

The seminar is practice-based thus assessment of students includes individual history taking scenarios with actor-patients in the simulation lab that are video-recorded, analyzed and finally evaluated. Students are informed about the assessment criteria in the beginning of the semester.

Making up for missed classes

Due to the character of the seminar make-up work for legitimate absences is not feasible.

Reading material

- Obligatory literature
- Literature developed by the Department
  Self-made digital educational materials: video-recorded doctor-patient conversations, history-taking interviews.
  Eklics-Koppán: Language and Communication Specific Attributes of Medical History
- Notes
  Eklics-Koppán: Language and Communication Specific Attributes of Medical History
- Recommended literature

Lectures
Practices
Seminars
1 Structure of history taking, parts of the doctor-patient interview.
2 Analysis of video-recorded patient interviews highlighting structural elements.
3 Linguistic characteristics of the history.
4 Politeness tools: greetings, addressing, formal communication.
5 Paraverbal politeness tools: clinical behavioural code.
   Simulated patient interview, history taking in internal medicine 1.
6 Assessment guidelines for observation and evaluation of the interview: language and communicative perspectives.
7 Assessment guidelines for observation and evaluation of the interview: professional perspectives (involving specialists).
8 Interviewing techniques: open and closed questions. Simulated patient interview, history taking in internal medicine 2.
9 Interviewing techniques: repetition and paraphrasing.
11 Typical and atypical patient reactions.
12 Simulated patient interview, history taking in internal medicine 4.
13 Note taking techniques.
14 Simulated patient interview, history taking in internal medicine 5.
15 In class evaluation of the interviews.
16 Simulated patient interview, history taking in internal medicine 6.
17 In class evaluation of the interviews.
Exam topics/questions

The seminar is practice-based thus assessment of students includes individual history taking scenarios with actor-patients in the simulation lab that are video-recorded, analyzed and finally evaluated. Students are informed about the assessment criteria in the beginning of the semester.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

(), Dr. Fekete Sándor (SLBJBN), Dr. Kittka Bálint Pál (JVKFX), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Laczy Boglárka (E0GYMS), Dr. Molnár Gergő Attila (GH1COA), Dr. Sebők Judit (GLM10L), Dr. Sélley Eszter (CCBDJN), Dr. Szántó Viktória (BLYSZV), Dr. Szemán Eszter (HIUD95), Eklicsné Dr. Lepenye Katalin (JMXXSC)
**OAE-TD3-T  STUDENT PROJECT RESEARCH 4**

**Course director:**

**DR. TIBOR ERTL, professor**

Undergraduate Research • tibor.ertl@aok.pte.hu

**2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 5**

**Number of hours/semester:**

- 0 lectures + 20 practices + 0 seminars = total of 20 hours

**Course headcount limitations (min.-max.):**

1 – 300

Prerequisites: OAE-TD2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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 enrol 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 enrol 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. For detailed requirements please read the following document: [http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng](http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng)

**Mid-term exams**

Making up for missed classes

Not applicable.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

Not applicable

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

Not applicable

**Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject**

**Participants**

Dr. Balogh Péter (KVAPT7)
OAE-TME-T  TRANSLATIONAL MEDICINE: BACK TO THE FUTURE (Lecture)

Course director: DR. PÉTER HEGYI, professor
Institute for Translational Medicine • hegyi.peter@pte.hu

2 credit • midterm grade • Elective subject • autumn semester • recommended semester: 5

Number of hours/semester: 22 lectures + 0 practices + 0 seminars = total of 22 hours
Course headcount limitations (min.-max.): 5 – 300

Prerequisites: OAA-EL2-T completed + OAA-NEA-T completed

Topic

„You can be a good scientist without medicine, but you cannot be a good physician without science”

The biggest challenge of modern medicine is the separation of basic and clinical sciences from each other. In most cases the two fields do not understand each other. Consequently, in many cases there are lack of knowledge considering the onset of diseases, the pathomechanisms, also the shortcomings of prevention and our limited interventional, operative and pharmacological treatment options. Despite the excessive fundings of the development of pharmaceuticals, the number of drugs or new interventions used in clinical practise remains almost the same. Clinical research is far behind Basic Science in activity and clinical practice is in opposition to the latest findings of basic research in many countries. Considering all this, it is clear that succesful research is only possible through the co-operation of basic researchers and clinicians, which is Translational Medicine. The main role for Translational Medicine has to be the „interpreteur” for the two fields, by bringing their knowledge and research closer together.

One of the greatest advantages of this system is that the findings of basic research can be used in clinical practice almost immediately, therefore even in the short run the quality of health care can be increased.

This course is produced for those students who completed at least four semester. Who opt for this subject we kindly ask to take it into consideration.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

At the end of the course students need to pass a written test-exam.

Making up for missed classes

There is no possibility for replacement of absence.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures

1  Introduction to Translational Medicine
   Dr. Hegyi Péter
2  Three pillars of Translational Medicine
   Dr. Hegyi Péter
3  Measuring scientific performance
   Dr. Erőss Bálint Mihály
4  Systems and organizations in science
   Dr. Erőss Bálint Mihály
5  The interdisciplinary core facility in Translational Medicine
   Dr. Erőss Bálint Mihály
6  From bedside to data management
   Dr. Erőss Bálint Mihály
7  Clinical questions at the bedside
   Dr. Erőss Bálint Mihály
8  A comprehensive search in databases
   Dr. Erőss Bálint Mihály
9  Clinical research methodology I: Meta-analyses I.
   Dr. Szakács Zsolt
10 Clinical research methodology I: Meta-analyses II.
   Dr. Szakács Zsolt
11 Clinical research methodology I: Meta-analyses III.  
Dr. Szakács Zsolt
12 Clinical research methodology I: Meta-analyses IV.  
Dr. Szakács Zsolt
13 Clinical research methodology II: Analyses from databases I  
Dr. Erőss Bálint Mihály
14 Clinical research methodology II: Analyses from databases II Statistician’s point of view  
Borbásné Dr. Farkas Kornélia
15 Clinical research methodology III: Clinical trials I  
Dr. Erőss Bálint Mihály
16 Clinical research methodology III: Clinical trials II  
Dr. Erőss Bálint Mihály
17 Clinical research methodology III: Clinical trials III  
Dr. Erőss Bálint Mihály
18 Clinical research methodology III: Clinical trials IV  
Dr. Erőss Bálint Mihály
19 Clinical research methodology IV: Retrospective data analyses, cross-sectional and cohort studies  
Dr. Szakács Zsolt
20 Clinical research methodology IV: Clinical pharmacological trials  
Dr. Szakács Zsolt
21 Assessment of the evidence (EBM, GRADE)  
Dr. Erőss Bálint Mihály
22 Practicing EBM in the daily routine  
Dr. Erőss Bálint Mihály

Practices

Seminars

Exam topics/questions

Exam topics are based on lectures.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-TMG-T  TRANSLATIONAL MEDICINE: BACK TO THE FUTURE (PRACTICE)**

**Course director:** Dr. Péter Hegyi, professor

**Institute for Translational Medicine • hegyi.peter@pte.hu**

- **2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 5**
- **Number of hours/semester:** 0 lectures + 20 practices + 0 seminars = total of 20 hours
- **Course headcount limitations (min.-max.):** 5 – 100
- **Prerequisites:** OAA-EL2-T completed + OAA-NEA-T completed + OAA-NEA-T parallel

**Topic**

„You can be a good scientist without medicine, but you cannot be a good physician without science.”

The biggest challenge of modern medicine is the separation of basic and clinical sciences from each other. In most cases the two fields don’t understand each other. Consequently, in many cases there are lack of knowledge considering the onset of diseases, the pathomechanisms, also the shortcomings of prevention and our limited interventional, operative and pharmacological treatment options. Despite the excessive fundings of the development of pharmaceuticals, the number of drugs or new interventions used in clinical practise remains almost the same. Clinical research is far behind Basic Science in activity and clinical practice is in opposition to the latest findings of basic research in many countries. Considering all this, it’s clear that successful research is only possible through the cooperation of basic researchers and clinicians, which is Translational Medicine. The main role for Translational Medicine has to be the „interpreteur” for the two fields, by bringing their knowledge and research closer together.

One of the greatest advantages of this system is that the findings of basic research can be used in clinical practice almost immediately, therefore even in the short run the quality of health care can be increased.

This course is produced for those students who completed at least four semester. Who opt for this subject we kindly ask to take it into consideration.

**Conditions for acceptance of the semester**

- Maximum of 15 % absence allowed
- **Mid-term exams**
  At the end of the course students need to pass a written test-exam.
- **Making up for missed classes**
  There is no possibility for replacement of absence.

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

Exam topics are based on the practices and seminars.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Hegyi Péter (YFWHVM)
OAF-AEU-T  **DATA SCIENCE IN MEDICINE AND HEALTHCARE**

**Course director:**  
DR. ÁDÁM FELDMANN, assistant professor  
Department of Behavioural Sciences • adam.feldmann@aok.pte.hu

<table>
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</thead>
<tbody>
<tr>
<td><strong>Number of hours/semester:</strong></td>
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<td><strong>Course headcount limitations (min.-max.):</strong></td>
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<tr>
<td><strong>Prerequisites:</strong></td>
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**Topic**

**Summary**

Healthcare is one of the largest data generator in our civilization. Rapid digitization can help us to create fruitful analyses extracting novel information and relations among datasets using Big Data related technologies. Healthcare data refers so large and complex datasets from various sources. For processing and analyzing near zettabyte and complex data needs new analytical methods and data representation forms. Nor can be easily managed traditional softwares and data storage methods. This course provides a broad overview of big data analytics for healthcare researchers and also practitioners.

I. Enter to data science:

- Data specificity in Healthcare.
- Data types and representation in Healthcare: from medical imaging to receipt.
- Handling data from different sources.
- Short summary of theoretical background.
- Using real world data in healthcare (4 x 45 min)
  - Principles and definition of real world evidence in healthcare
  - Identifying relevant sources of data and their limitations
  - New methods of data analysis to develop real world evidence (RWE) from real world data (RWD)
  - Use of RWE in making decisions in healthcare

II. Practise based examples:

- Create new healthcare analytics and service using Microsoft Azure service based on free medical datasets.
- Try to your ideas!

III. Data science based business model in medicine and healthcare

- What is the meaning of the term startup? How can we make sure our product will be attractive on the market? What is the process of product development?
  - Problem & solution fit
  - Product & market fit
  - Design thinking
  - Business model generation, validation and efficient pitch.
  - Value proposition canvas
  - Business model canvas
  - Lean business model canvas
  - Persona
  - Validation
  - Pitch

**Conditions for acceptance of the semester**

**Mid-term exams**

Essay and individual work

**Making up for missed classes**

Essay

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
Lectures

Practices

Seminars
1. Data specificity in Healthcare.
2. Data types and representation in Healthcare: from medical imaging to receipt.
3. Handling data from different sources.
6. Short summary of theoretical background.
7. Principles and definition of real world evidence in healthcare.
8. Identifying relevant sources of data and their limitations.
9. New methods of data analysis to develop real world evidence (RWE) from real world data (RWD).
10. Use of RWE in making decisions in healthcare.
11. Introduction to Microsoft AZURE.
12. Registration and uploading sample datasets.
13. Result planning.
14. Create a new data related healthcare device (create and deploy).
15. Preparing new app.
16. Product testing.
17. Problem & solution fit.
18. Product & market fit.
19. Design thinking.
22. Persona.
23. Validation.

Exam topics/questions

Essay and individual work, practice and attendance.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject.

Participants

Dr. Feldmann Ádám (GLNQKN), Dr. Zemplényi Antal Tamás (U2UUXC), Felkért előadó (FELKERTELOADO).
A medical doctor often encounters a pair of breastfeeding mother and breastfed baby in various ways during his carrier, since, apart from pediatricians and obstetricians, other surgeons or medical doctors also operate on or pharmacologically treat breastfeeding mothers. Moreover, they sometimes visit the family’s General Practitioner with a breast inflammation, for example. The aim of the course is on one hand to provide information about the theoretical background of lactation, and on the other hand to review the development of the healthy baby/infant, and to demonstrate the relationship between delivery/puerperal stage and breastfeeding. During the talks we will consider the pathological conditions that most often affect breastfeeding and infant nutrition, from the point of view of both the mother and the infant, based on the latest recommendations/lactation protocols. The talks will be enriched with communication situation plays, case presentations, literature reviews, MediSkillsLab demonstrations that also play an essential role in understanding the psychological changes and the process of becoming a mother.

Conditions for acceptance of the semester

Maximum of 15% absence allowed

Mid-term exams
Personal consultation

Making up for missed classes
Personal consultation

Reading material
- **Obligatory literature**
  Lecture material
- **Literature developed by the Department**
  Lectures will appear on MeetStreet by the end of the semester
- **Notes**
- **Recommended literature**

Lectures

1. The meaning of mothermilk nutrition. Definitions related to breastfeeding.  
   Dr. Ráczné Dr. Mikó-Baráth Eszter
2. Biological basics of lactation, the development and the anatomy of the breast  
   Dr. Tamás Andrea
3. The physiology of lactation, practical approach of breastfeeding  
   Dr. Cziger-Nemes Vanda Ágnes
4. Natural and pathological birth, cesarean section and their effect on breastfeeding  
   Dr. Rácz Sándor Attila
5. The development and biological needs of healthy newborn and infant.  
   Dr. Ráczné Dr. Mikó-Baráth Eszter
6. The support of breastfeeding in obstetrical practice  
   Dr. Ráczné Dr. Mikó-Baráth Eszter
7. The most frequent breastfeeding problems in early postpartum period  
   Dr. Ráczné Dr. Mikó-Baráth Eszter
8. Difficulties in breastfeeding on the side of the infant  
   Dr. Ráczné Dr. Mikó-Baráth Eszter
9. The acceptable indications of supplementation with mothermilk or formula  
   Dr. Ráczné Dr. Mikó-Baráth Eszter
10 Difficulties in breastfeeding on the side of the mother  
   Dr. Ráczné Dr. Mikó-Baráth Eszter  
11 Examination of the breast (MediSkillsLab- demonstration)  
   Dr. Ráczné Dr. Mikó-Baráth Eszter  
12 Up-to-date informations related to breastfeeding to mothers and professionals, pharmacological databases. Oral exam.  
   Dr. Ráczné Dr. Mikó-Baráth Eszter

Practices
Seminars
Exam topics/questions
Lecture topics

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Course director: DR. TAMÁS MOLNÁR F., professor  
Department of Operational Medicine • tfmolnar@gmail.com

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 5

Number of hours/semester: 18 lectures + 6 practices + 0 seminars = total of 24 hours

Course headcount limitations (min.-max.): 5 – 20

Prerequisites: OAA-EL2-T completed

Topic
The importance of the defense against CBRN (Chemical, Biological, Radiological and Nuclear) agents has grown significantly in the last few years. The specialists in the field of defense technologies are challenged by sharpening international conflicts, swift changes in demography, rapidly developing biotechnology/engineering sciences and also by growing industrial activities.

As part of the concept of Operational Medicine the participants can have access to the medical aspects of CBRN defense and the casualty care regarding CBRN incidents. With a special emphasis on the practical training the course’s important goal to present innovative technologies and equipment.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
In accordance with Code of Studies and Examinations.

Reading material
- Obligatory literature
- Literature developed by the Department
  Teaching materials of the course (from the instructors).
- Notes
- Recommended literature

Lectures
1  Introduction. Medical aspects of CBRN  
   Dr. Molnár F. Tamás
2  Introduction. Medical aspects of CBRN  
   Marosné Berta Beáta
3  CBRN agents and their terminology, classification, concerning international regulations  
   Marosné Berta Beáta
4  CBRN agents and their terminology, classification, concerning international regulations  
   Marosné Berta Beáta
5  Introduction of the harmful effects caused by chemical materials  
   Marosné Berta Beáta
6  Introduction of the harmful effects caused by chemical materials  
   Marosné Berta Beáta
7  Introduction of the harmful effects caused by biological materials  
   Marosné Berta Beáta
8  Introduction of the harmful effects caused by biological materials  
   Marosné Berta Beáta
9  Introduction of harmful radiological effects.  
   Marosné Berta Beáta
10 Introduction of harmful radiological effects  
    Marosné Berta Beáta
11 Introduction of harmful nuclear effects  
    Marosné Berta Beáta
12 Introduction of harmful nuclear effects  
    Marosné Berta Beáta
13 Basics of radiation protection. Definitions  
    Dr. Rendeki Szilárd
14 Basics of radiation protection. Definitions
   Dr. Rendeki Szilárd
15 Complex CBRN detection
   Marosné Berta Beáta
16 Complex CBRN detection
   Marosné Berta Beáta
17 Acute Care
   Dr. Rendeki Szilárd
18 Acute Care
   Dr. Rendeki Szilárd

Practices
1 Training, field practice
2 Training, field practice
3 Training, field practice
4 Training, field practice
5 Training, field practice
6 Training, field practice + TEST

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Farkas József (TA5T02), Dr. Molnár F. Tamás (AY4XHG), Dr. Nagy Bálint János (B8MX1K), Dr. Rendeki Szilárd (S70CCV), Dr. Woth Gábor László (IRFDPF), Marosné Berta Beáta (ZMKRFH)
OAF-CTD-T  LAB-ON-A-CHIP TECHNICS IN LABORATORY DIAGNOSTICS

Course director:  DR. LILLA MAKSZIN, assistant professor
Institute of Bioanalysis • lilla.makszin@aok.pte.hu

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5
Number of hours/semester: 10 lectures + 12 practices + 0 seminars = total of 22 hours
Course headcount limitations (min.-max.): 5 – 15
Prerequisites: none

Topic
Microchip capillary electrophoresis is an interesting approach for an increasing number of analytical problems in environmental applications and health science. The determination of size, quality and concentration of biomolecules such as DNA, RNA and proteins is one of the fundamental steps in life science research. Traditional methods for this type of analysis, such as gel electrophoresis or capillary electrophoresis, can now be complemented by an analytical technique, Lab-on-A-Chip technology. This technology enables downsizing and integration of several experimental steps (injection, labeling, dilution, separation, detection) into one process, in combination with automated data analysis. Lab-on-A-Chip technology has several advantages compared with conventional techniques, such as minimal sample requirement, rapid analysis times, ease-of-use, minimized exposure to hazardous materials and reduced waste generation.

The course deals with the theoretical background and application of the microfluidic methods, such as electrophoresis for detection of proteins, endotoxins, DNA, RNA and flow cytometry for detection of cells (bacteria, fungi, cancer cells, etc.).

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
During the semester students have to accomplish the preparative works. They have to document the experiments in their laboratory notebook.

Making up for missed classes
By personal consultation.

Reading material
- Obligatory literature
  - Literature developed by the Department
    It is going to be available on the website and in Neptun.
- Notes
- Recommended literature
  Instrumental analysis lecture and practise; microchip electrophoresis

Lectures
1 The principle and practice of capillary zone electrophoresis, theory of electrophoretic migration
   Dr. Makszin Lilla
2 The principle and practice of gel electrophoresis, polyacrylamide gel electrophoresis (2-D PAGE, SDS-PAGE) methods
   Dr. Makszin Lilla
3 The principle and practice of microchip electrophoresis
   Dr. Makszin Lilla
4 The principle and practice of flow cytometry on microchip
   Dr. Makszin Lilla
5 The structure and function of microchip electrophoresis device (Agilent Bioanalyzer 2100) (different types of detectors, injection methods)
   Dr. Makszin Lilla
6 Preparation of microfluidic chips, properties and advantages
   Dr. Makszin Lilla
7 Laboratory diagnostic applications of microfluidic chips 1. (electrophoretic separation of proteins, DNA, RNA)
   Dr. Makszin Lilla
8 Laboratory diagnostic applications of microfluidic chips 2: (flow cytometry analysis of bacteria, fungi, cancer cells)
   Dr. Makszin Lilla

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9 Qualitative evaluation of „lab-on-a-chip” methods by help of Agilent 2100 Expert software
   Dr. Makszin Lilla
10 Quantitative evaluation of „lab-on-a-chip” methods by help of Agilent 2100 Expert software
   Dr. Makszin Lilla

Practices
1 Preparation of samples (serum proteins, bacterial proteins, endotoxins, etc.)
2 Preparation of samples; covalent labeling with fluorescent dye
3 Preparation of samples; denaturation
4 Microchip electrophoretic measurement, separation with Agilent 2100 Bioanalyzer
5 Qualitative analysis of samples
6 Quantitative analysis of samples, evaluation by help of 2100 Expert software
7 Preparation of cell samples (bacteria, fungi, HeLa cells, etc.)
8 Purification of cells
9 Preparation of samples; labeling with fluorescent dyes
10 Purification of labeled cells
11 Microfluidic measurement, cell counting and evaluation with Agilent 2100 Bioanalyzer
12 Final evaluation, mark

Seminars

Exam topics/questions
The required information for the report will be explained in the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Makszin Lilla (GWR9T4)
OAF-DIM-T  IMMUNOLOGY OF THE SKIN

Course director:  DR. DIANA SIMON, assistant professor
Department of Immunology and Biotechnology  simon.diana@pte.hu

1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 5

Number of hours/semester:  12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  3 – 100

Prerequisites:  OAA-IMM-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

S.A.L.T. Skin associated lymphatic tissue. Tight networks of cells and diverse pathways of signaling molecules regulating this system. In the recent years new findings, concepts and applications raised the need and importance of a course which is discussing the immune system of the skin. During this course, cellular and molecular organization together with the dissection of the molecular pathways and epigenetic elements regulating the homeostasis and the development of the S.A.L.T. will be presented. Demonstrating the activatory and tolerogenic functions - in the case of inflammation and microbiota - and the discussion of autoimmune skin diseases will also be incorporated. Introduction of hypoxia, allergy and tumor immunology related to the skin and the representation of up to date in vitro experimental techniques, results and biotechnological applications in the field of skin related research will be demonstrated as well.

Topics:
1. Skin associated lymphatic tissue; hypersensitive reactions
2. Immunological relevance of the microbial community of the skin
3. Langerhans cell network in the skin
4. Immunological mechanisms behind wound healing
5. Atopic dermatitis, bullous skin diseases, psoriasis
6. Atopic dermatitis, bullous skin diseases, psoriasis
7. Signal transduction; epigenetics
8. Hypoxia
9. In vitro experimental techniques; autologous tissue transplantation; artificial skin
10. Allergy
11. Skin tumors, melanoma, new treatment strategies
12. Skin tumors, melanoma, new treatment strategies
13. Scleroderma
14. Scleroderma

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

Making up for missed classes

Individual preparation.

Reading material

- Obligatory literature
- Literature developed by the Department
  www.immbio.hu
- Notes
- Recommended literature

Lectures

1  Skin associated lymphatic tissue; hypersensitive reactions
   Dr. Berki Timea
2  Immunological relevance of the microbial community of the skin
   Dr. Simon Diána
3  Langerhans cell network in the skin
   Dr. Simon Diána
4  Immunological mechanisms behind wound healing
   Dr. Simon Diána
5  Atopic dermatitis, bullous skin diseases, psoriasis
   Dr. Gyulai Rolland Péter

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<table>
<thead>
<tr>
<th></th>
<th>Course Description</th>
<th>Instructor</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Atopic dermatitis, bullous skin diseases, psoriasis</td>
<td>Dr. Gyulai Rolland Péter</td>
</tr>
<tr>
<td>7</td>
<td>Signal transduction; epigenetics. Hypoxia. In vitro experimental techniques; autologous tissue transplantation; artificial skin</td>
<td>Dr. Najbauer József</td>
</tr>
<tr>
<td>8</td>
<td>Allergy</td>
<td>Dr. Berki Timea</td>
</tr>
<tr>
<td>9</td>
<td>Skin tumors, melanoma, new treatment strategies</td>
<td>Dr. Lengyel Zsuzsanna</td>
</tr>
<tr>
<td>10</td>
<td>Skin tumors, melanoma, new treatment strategies</td>
<td>Dr. Lengyel Zsuzsanna</td>
</tr>
<tr>
<td>11</td>
<td>Scleroderma</td>
<td>Dr. Czirják László István</td>
</tr>
<tr>
<td>12</td>
<td>Scleroderma</td>
<td>Dr. Czirják László István</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
## Development and Malformations of the Human Cerebral Cortex

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. HAJNALKA GABRIELLA ÁBRAHÁM, associate professor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department:</td>
<td>Medical Biology and Central Electron Microscope Laboratory</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:hajnalka.abraham@aok.pte.hu">hajnalka.abraham@aok.pte.hu</a>; <a href="mailto:hajnalka.abraham@yahoo.com">hajnalka.abraham@yahoo.com</a></td>
</tr>
</tbody>
</table>

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 5

### Course description:

- **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, genetical 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

- Maximum of 15 % absence allowed
- Mid-term exams
- Nincs lehetőség pótlásra
- Making up for missed classes

Uncertified absences must not exceed 2 hours. There is no possibility for making up of missed lectures.

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  
  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 Gabriella
2.  Phases of the human cortical development. Structure of the developing cortex.  
   Dr. Ábrahám Hajnalka Gabriella
   Dr. Seress László Antal
4.  Forms of neuronal migration.  
   Dr. Ábrahám Hajnalka Gabriella
5.  Factors guiding neuronal migration.  
   Dr. Ábrahám Hajnalka Gabriella
   Dr. Seress László Antal
   Dr. Seress László Antal
8.  Postnatal cell proliferation and differentiation in prematurely born infants.  
   Dr. Ábrahám Hajnalka Gabriella
   Dr. Ábrahám Hajnalka Gabriella
10. Cortical developmental malformations in polymicrogyria, epilepsy, schizophrenia.  
    Dr. Ábrahám Hajnalka Gabriella
    Dr. Ábrahám Hajnalka Gabriella
12. Exam  
    Dr. Ábrahám Hajnalka Gabriella
Practices

Seminars

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.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-EMV-T  MICROBIOLOGICAL ASPECTS OF FOOD SAFETY

Course director: DR. ISTVÁNÉ BÁTAI (DR. MÓNICA KERÉNYI), associate professor
Department of Medical Microbiology and Immunology • kerényi.monika@pte.hu

2 credit • midterm grade • Optional subject • autumn semester • recommended semester: 5

Number of hours/semester: 20 lectures + 0 practices + 0 seminars = total of 20 hours
Course headcount limitations (min.-max.): 1 – 35  Prerequisites: OAA-OBA-T completed + OAA-EL2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

Topic gives knowledge of foodborne diseases and useful probiotics. Advantages and disadvantages of probiotics in different diseases, dangers of imported contaminated food, and information of newest methods in food safety are discussed.

The students get knowledge of
- advantages and disadvantages of microorganisms in food for health
- role of probiotics in therapy, probiotic products
- dangers of imported food contaminated by pathogens and their toxins
- epidemiology and prevention of foodborne diseases
- antibiotics in food
- detection methods

Conditions for acceptance of the semester

Active participation
Mid-term exams
One exam
Making up for missed classes
Consultation

Reading material
- Obligatory literature
- Literature developed by the Department
  Lectures on the MeetStreet
- Notes
  Handout on the Neptun
- Recommended literature
  Jay JM: Modern Food Microbiology, research papers and review articles

Lectures

1 History of food microbiology
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
2 Importance of food safety and food security
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
3 Factors influencing the growth of microorganisms in food and their application
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
4 The impact of food environmental and internal factors on microorganism multiplication
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
5 Probiotics in the food. Probiotics, and their therapeutic role
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
6 Probiotics and prebiotics. Their role in the treatment of different diseases
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
7 Microorganisms in food production, starter cultures. The role of microorganisms in fermented food
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
8 Bacterial food poisonings (case reports)
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
9 Food-borne infections caused by bacteria (case reports) 1.
   Dr. Bátaí Istvánné (Dr. Kerényi Mónika)
<table>
<thead>
<tr>
<th>Course</th>
<th>Lecturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Food-borne infections caused by bacteria (case reports) 2.</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>11 Mycotoxins and their effects</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>12 Mycotoxins in the foods. Detection of the mycotoxins in the food.</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>13 Food-borne infection caused by viruses (case report)</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>14 Food-borne infections caused by parasite (case report)</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>15 Epidemiology of foodborne diseases</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>16 Major outbreaks of food-poisoning and food-borne infection</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>17 Antibiotics and antimicrobial compounds in food of animal origin</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>18 Antibiotics and antimicrobial compounds in food of plant origin</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>19 Microbiological methods of food investigation (New and quick microbiological methods in food investigation). Monitoring microbiological food safety.</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
<tr>
<td>20 Summary of the topics and exam</td>
<td>Dr. Bátaí Istvánné (Dr. Kerényi Mónika)</td>
</tr>
</tbody>
</table>

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Bátaí Istvánné (Dr. Kerényi Mónika) (A6M8OA)
**Course director:** DR. PÉTER ANDRÁS ENGELMANN, associate professor
Department of Immunology and Biotechnology • engelmann.peter@pte.hu

**Course description:**

**OAF-EVO-T  EVOLUTIONARY IMMUNOBIOLOGY**

- **Number of hours/semester:** 0 lectures + 0 practices + 12 seminars = total of 12 hours
- **Recommended semester:** 5
- **Course headcount limitations (min.-max.):** 3 – 30
- **Prerequisites:** OAA-MB2-T completed + OAA-IMM-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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

Mid-term exams

Making up for missed classes

Individual preparation

**Reading material**

- Obligatory literature
- Literature developed by the Department
  
  www.immbio.hu

- Notes
- Recommended literature
  

**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: RAG-time: immunoglobulin, TCR development in the context of phylogenesis
12. Phylogenetical development of vertebrate immune organs, host-pathogen co-evolution

**Exam topics/questions**

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Engelmann Péter András (B9Y1R8)
OAF-GED-T  Genomics and Epigenomics in Development and Disease

Course director: DR. ATTLA GÁBOR SIK, senior research fellow
Institute of Transdisciplinary Discoveries - Director of Innovation, Institute of Physiology • sik.attila@pte.hu

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5
Number of hours/semester: 20 lectures + 4 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 20
Prerequisites: OAA-HUG-T completed

Topic

Epigenetics is the study of heritable changes in phenotype that do not involve alterations in the genom. Environmental effects or normal developmental program can result in epigenetic changes. During the course an international team (University of Birmingham, UK, University of Pecs, Hungary) will explain both in a lecture format and in practical session the fundamentals of epigenetics.

In the first part of the course the concept of genomics, genome structure, and techniques of genome data harvesting are established, then the principles and levels of gene regulation, the concept of epigenetic gene regulation, as a paradigm are highlighted, and integrated into the network-based approach of genetic regulation. In the further lectures, the general principles of animal development, and developmental genetic and genomics-based studies will be presented in evolutionary developmental biology (EVO-DEVO) context, and medical aspects considered.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

No mid-semester tests. Essay.

Making up for missed classes

After 3 missed classes the semester signature is automatically denied, there is no possibility to make up for the missed classes.

Reading material

- Obligatory literature
- Literature developed by the Department
  - Lecture materials by the teachers and their publications on this topic
- Notes
- Recommended literature

Lectures

1  Vertebrate genomics, introduction
   Müller Ferenc
2  Epigenetic means of gene regulation. DNA methylation in gene regulation
   Müller Ferenc
3  Epigenetic means of gene regulation. Histone postranslational modifications, histone code
   Müller Ferenc
4  Mechanisms of epigenetic inheritance, intra and intergenerational inheritance
   Müller Ferenc
5  Non-coding genome function, gene regulation mechanisms. Cis regulatory elements, chromatin function and structure
   Müller Ferenc
6  Enhancers promoter structure function and interactions
   Müller Ferenc
7  Non-coding genome function, annotation technologies. Genome annotation by comparative genomic analysis
   Müller Ferenc
8  Genomics applications in medical research
   Müller Ferenc
9  100K genome project in cancer and rare diseases
   Müller Ferenc
10 Recent genome manipulation technologies
    Müller Ferenc
11 The principles of genomic equivalence, some examptions and extensions of epigenetic regulation in animal development
    Dr. Hoffmann Gyula
12 General principles of pattern formation, the control of axis formation and body organisation
    Dr. Hoffmann Gyula
Asymmetry between maternal and paternal genomes, genomic imprinting, gynogenones and adrogenons. Medical implications
Rauch Tibor Attila

Dosage compensation, classical examples of epigenetic regulations in mammal development including X-chromosome inactivation
Rauch Tibor Attila

Dosage compensation, classical examples of epigenetic regulations in mammal development including X-chromosome inactivation
Rauch Tibor Attila

Stem cells, regeneration and epigenetical aspects of human development, medical implications
Dr. Hoffmann Gyula

Evolutionary genomics, genetic background for special characteristics of animals
Dr. Hoffmann Gyula

Evo-devo, evolutionary innovations, homeosis, homeotic mutations in mammals
Dr. Hoffmann Gyula

Practices
1. How to use and mine genomics data in a Genome browser (UCSC)
   Müller Ferenc
2. How to use and mine genomics data in a Genome browser (UCSC)
   Müller Ferenc
3. How to use and mine genomics data in a Genome browser (UCSC)
   Müller Ferenc
4. How to use and mine genomics data in a Genome browser (UCSC)
   Müller Ferenc

Seminars

Exam topics/questions
A submitted 2500-word long essay (the student will have the choice of one title out of an offer of 3-5 titles proposed, and the essay will be written, in English, by the student over a period of two weeks, and submitted for marking by academic staff).

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-HF5-T  Hungarian for Foreigners 5

Course director:  DR. KATALIN PELCZ, language teacher
International Studies Center • pelcz.kata@pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 5

Topic
The course is offered for all the interested participants who would like to learn Hungarian as a foreign language.
The Hungarian for Foreigners 5 focuses on

Conditions for acceptance of the semester
Maximum of 15% absence allowed

Mid-term exams
The course ends with an oral and written exam. You can take part in the exam, with a min. 85% attendance rate.

Making up for missed classes
Medical certificate is accepted.

Reading material
- Obligatory literature
  Szita Szilvia - Pelcz Katalin: MagyarOK 3.
  www.magyar-ok.hu
- Literature developed by the Department
  Szita Szilvia - Pelcz Katalin: MagyarOK 3.
  www.magyar-ok.hu
- Notes
- Recommended literature

Lectures
Practices
Seminars
1  Egészség, betegség kórházak és szanatóriumok
2  Egészség, betegség kórházak és szanatóriumok
3  Egészség, betegség kórházak és szanatóriumok
4  Egészség, betegség kórházak és szanatóriumok
5  Egészség, betegség kórházak és szanatóriumok
6  Egészség, betegség kórházak és szanatóriumok
7  Sport, sportszabályok
8  Sport, sportszabályok
9  Sport, sportszabályok
10  Sport, sportszabályok
11  Sport, sportszabályok
12  Sport, sportszabályok
13  Az egyén és a társas kapcsolatok
14  Az egyén és a társas kapcsolatok
15  Az egyén és a társas kapcsolatok
16  Az egyén és a társas kapcsolatok
17  Az egyén és a társas kapcsolatok
18  Az egyén és a társas kapcsolatok
19  Család, családi ünnepek a világon
20  Család, családi ünnepek a világon
21  Család, családi ünnepek a világon
22  Család, családi ünnepek a világon
Exam topics/questions

Successful oral and written exam at the end of the course.

MagyarOK B1+ 1-6. fejezet:
http://magyar-ok.hu/docs/MOK_B1_tartalom.pdf

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pelcz Katalin (HBH91N)
OAF-IE1-T  FORENSIC MEDICAL GENETICS 1
Course director:  Dr. ZSOLT KOZMA, assistant professor
Department of Forensic Medicine  zsolt.kozma@aok.pte.hu

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 5
Number of hours/semester:  0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 100  Prerequisites:  OAA-MB2-T completed

Topic
The course of Forensic Medical Genetics compresses the up-todate knowledge of forensic biology and DNA profiling. Topics include also the legal and ethical impacts of recent genetic advances. We will focus on current techniques of DNA fingerprinting, also the criminal, civil and even the non-human or military applications as well. We invite those students who attend both at the autumn and spring courses to the third (last) part of the education focusing on practical laboratory works in the hemaogenetic laboratory of the Dept. of Forensic Medicine. During this course, with the above mentioned three semesters together, the student could practically collect 4 credits at the end. Except the third, the student could choose the first two modules separately for 1 or for 2 credits. The sessions will be pooled, the course will last 6 weeks.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed
Mid-term exams
Written exam at the end of the course
Making up for missed classes
No chance
Reading material
- Obligatory literature
  none
- Literature developed by the Department
  Uploaded to Neptun
- Notes
  none
- Recommended literature
  Uploaded to Neptun.

Lectures
Practices
Seminars
1  Introduction, history
2  Introduction, history
3  Crime scene investigation, biological traces, microscopic traces
4  Crime scene investigation, biological traces, microscopic traces
5  Genetic background - polymorphisms (VNTR, STR, SNP, RNA, proteins)
6  Genetic background - polymorphisms (VNTR, STR, SNP, RNA, proteins)
7  Genetic background - polymorphisms (VNTR, STR, SNP, RNA, proteins)
8  Genetic background - polymorphisms (VNTR, STR, SNP, RNA, proteins)
9  Methodical background - Sample preparation, DNA isolation, PCR, separation, detection
10 Methodical background - Sample preparation, DNA isolation, PCR, separation, detection
11 Methodical background - Sample preparation, DNA isolation, PCR, separation, detection
12 Methodical background - Sample preparation, DNA isolation, PCR, separation, detection

Exam topics/questions
Uploaded to Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Kozma Zsolt (LRQ66X), Dr. Pádár Zsolt (FWE8VH), Dr. Poór Viktor Soma (SA17J1)
OAF-JOE-T  THE PHYSIOLOGY OF YOGA

Course director:  DR. VANDA ÁGNES CZIGER-NEMES, assistant professor
Institute of Physiology  vanda.nemes@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5
Number of hours/semester:  12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 30  Prerequisites:  OAA-EL2-T completed

Topic
The physical, mental and psychological stability of healthcare professionals is essential in maintaining health and managing daily stress, as well as being empathetic towards patients on the long term. Regular practice of yoga balances and strengthens our body and mind; it stretches tense muscles and strengthens weak ones, and also helps to acknowledge bodily sensations. Yoga quiets the breathing and the mind, thus we can stay aware and in the present, coping in situations with greater self-confidence and less anxiety. The complex system of yoga could be used as a preventive healthcare method and therefore deserves special attention, complementing traditional, western medicine. During the course, we systematically explore the yoga system, and its proven physiological effects in view of the available literature (there are at present 4304 hits for the keyword ‘yoga’ in PubMed). We compare the western, evidence based methods with the ancient eastern knowledge. We get an insight into the different types of yoga traditions, and the blossoming modern yoga schools, which helps to decide which of them suits us, depending on our life cycle, energy level or present needs. On every occasion, we will try a new type of breathing exercise and meditation, and the last two sessions will involve yogic poses (asanas) as well. Thus, students attending this course will get hands on experience regarding the beneficial effects of yoga, and later can guide their patients and acquaintances as a reliable source in the world of yoga and relaxation, recognizing its significance as a preventive medicine.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Oral examination during the last lecture, which, if missed can be compensated on the given week.

Making up for missed classes
Based on individual arrangement.

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture material will be handed out.
- Notes
- Recommended literature
  B.K.S. Iyengar: The path to holistic health.
  B.K.S. Iyengar: Light on yoga.

Lectures
1  The history and philosophy of yoga. The eight limbs of yoga. Modern schools and ancient traditions.
   Dr. Cziger-Nemes Vanda Ágnes
2  Physiology of Asana, Pranayama, Mantra, Meditation, Bandha and Mudra.
   Dr. Cziger-Nemes Vanda Ágnes
3  Yoga as a complementary medicine, a method of primary prevention. Eastern and Western approach to health and disease. Published research.
   Dr. Cziger-Nemes Vanda Ágnes
4  Physiology of asanas, their role in health, published research.
   Dr. Cziger-Nemes Vanda Ágnes
5  Physiology of pranayama, the breath regulation and its Eastern interpretation. Published research.
   Dr. Cziger-Nemes Vanda Ágnes
6  Ayurveda.
   Dr. Cziger-Nemes Vanda Ágnes
7  The yogic diet, role of diet in health and primary prevention in view of the scientific literature.
   Dr. Ráczné Dr. Mikó-Baráth Eszter
8  Eastern and Western concepts of the mind. Meditation and yoga nidra - the yogic sleep.
   Dr. Cziger-Nemes Vanda Ágnes
9  Diseases of modern age: stress and chronic fatigue. Maintaining mental health with yoga, a practical approach.
   Dr. Cziger-Nemes Vanda Ágnes
<table>
<thead>
<tr>
<th></th>
<th>Role of yoga in different life cycles, from prenatal to senior yoga.</th>
<th>Dr. Cziger-Nemes Vanda Ágnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Injury prevention and rehabilitation with yoga for athletes.</td>
<td>Dr. Cziger-Nemes Vanda Ágnes</td>
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<td>12</td>
<td>Demonstration: asana, pranayama, meditation, home practice. Oral exam.</td>
<td>Dr. Cziger-Nemes Vanda Ágnes</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

Oral questions from the lecture material.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

OAF-KUO-T  MEDICAL HUMANITIES

Course director: DR. TAMÁS MOLNÁR F., professor
Department of Operational Medicine • tfmolnar@gmail.com

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 100

Prerequisites: OAA-AA2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

This interactive course is created to III.-IV. graders who has General Medicine, Dentistry or Pharmacy Major. Its lecturers are medical practitioners, who are all well-known and respected in their fields of medical practice. They all believe that the humanities play an important role in becoming a better doctor. The emphasis is, of course, on the medical aspects of the subjects, the arts and humanities parts are complementary information.

The subject is a balanced combination of the applied history of medicine, cultural history, art history and philosophy - with the admitted intention to create strong basis for students in critical and human-focused approaching of modern, evidence-based medicine.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

**Making up for missed classes**

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - Teaching materials of the course (from the instructors).
- **Notes**
- **Recommended literature**

**Lectures**

1. The summary of the subject and its relevance in the medical curriculum. C P Snow: The Two Cultures - theory
   Dr. Molnár F. Tamás

2. The benefits, the usage and the risks of the History of Medicine and the Medical Humanities
   Dr. Molnár F. Tamás

3. Diseases, therapy and literature. Tuberculosis - the white death
   Dr. Molnár F. Tamás

4. Diseases and therapy - reflections. Asthma and allergy
   Dr. Molnár F. Tamás

5. COPD and pathographies of cardiopulmonary
   Dr. Molnár F. Tamás

6. Neuroendocrine tumors: Cushing to Kulchitsky
   Dr. Molnár F. Tamás

7. Medical Humanistic approach of Surgery
   Dr. Molnár F. Tamás

8. Forensics Medicine: literature, film and the modern media - the history behind the stories
   Dr. Molnár F. Tamás

9. Infectious diseases and epidemics - their historical aspects and literary reflections (D. Defoe: A Journal of the Plague Year)
   Dr. Molnár F. Tamás

10. Cultural aspects of addictology - alcohol, nicotine, drugs and addicts
    Dr. Molnár F. Tamás

11. Surgery of Penetrating Trauma of Chest Cavities - it’s past, present and the arts (St. Sebastian)
    Dr. Molnár F. Tamás

    Dr. Molnár F. Tamás

    Dr. Molnár F. Tamás
The metamorphosis of the concept of health and illness: from the Ten Plaques of Egypt to the Purification through Suffering.
Dr. Molnár F. Tamás

Saints, the Christian Church and diseases - Patron Saints
Dr. Molnár F. Tamás

Graeco-Roman mythology and medicine - the frame of the mythology
Dr. Molnár F. Tamás

Syndromes: names, stories and medicine (from Münchausen to Pickwick)
Dr. Molnár F. Tamás

Social traumatology: the Trianon Syndrome
Dr. Molnár F. Tamás

Anaesthesia, Intensive therapy - lessons learnt from history
Dr. Molnár F. Tamás

The relation of literature to illnesses (Susan Sonntag: Illness as a Metaphore)
Dr. Molnár F. Tamás

Visual Arts and Anatomy
Dr. Molnár F. Tamás

Visual Arts and Clinical Medicine
Dr. Molnár F. Tamás

„How can I tell you?“ - the communicative strategies of an educated MD about diagnose and prognosis. The acceptance of the unacceptable - and the bearer of bad news
Dr. Molnár F. Tamás

Patient and Doctor. Inside out
Dr. Molnár F. Tamás

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-MME-T  MOLECULAR MEDICINE

Course director: DR. JUDIT ERZSEBET PONGRÁCZ, professor
Department of Pharmaceutical Biotechnology • pongracz.e.judit@pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 150  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
Introduction into molecular medicine

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

Mid-term exams
Writing test
Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
  www.medbiotech.com
- Recommended literature

Lectures
1  Introduction into molecular medicine
   Dr. Pongrácz Judit Erzsébet
2  The genome
   Dr. Pongrácz Judit Erzsébet
3  Sequencing of the genome
   Dr. Pongrácz Judit Erzsébet
4  Investigation of the human genome with microarrays
   Dr. Pongrácz Judit Erzsébet
5  Genes and diseases
   Dr. Pongrácz Judit Erzsébet
6  Nuclear receptors
   Dr. Pongrácz Judit Erzsébet
7  Personalized genetics
   Dr. Pongrácz Judit Erzsébet
8  Immunodeficiencies
   Dr. Pongrácz Judit Erzsébet
9  Cancers (introduction)
   Dr. Pongrácz Judit Erzsébet
10 Molecular mechanisms of cancer development
   Dr. Pongrácz Judit Erzsébet
11 Obesity: introduction
   Dr. Pongrácz Judit Erzsébet
12 Genomics of obesity
   Dr. Pongrácz Judit Erzsébet
13 Genes involved in development of obesity
   Dr. Pongrácz Judit Erzsébet
14 Therapeutic approaches to obesity. Interconnected mechanisms in lipid metabolism
   Dr. Pongrácz Judit Erzsébet
Practices
Seminars
Exam topics/questions

www.medbiotech.com

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
CERVICAL CANCER: NEW PERSPECTIVES IN PREVENTION AND THERAPY

Course director: DR. KATALIN RÉKA PÁTCZAI-GŐCZE, assistant professor
Sports Medicine Center • katalin.gocze@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 20 Prerequisites: none

Topic
Cervical cancer is the fourth most common cancer in women. The majority of cervical cancers are associated with human papilloma viruses (HPV). However, most women with HPV do not develop cervical cancer. Besides high risk HPV infection several factors influence the process of cervical carcinogenesis. Molecular profiling and bioanalysis, enable us to develop new biomarkers and opens up new perspectives in risk evaluation and decision making including spectrums of prevention and therapy. This course gives you an insight on the latest developments, regimens and research topics concerning the prevention and clinical management of cervical cancer. As for the future, personalized medicine will be based on personal risk assessment that includes the complex analysis of genomic biomarkers.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed
Mid-term exams test
Making up for missed classes
Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
1 Cervical cancer: global challenges
   Dr. Patczai D. Göcze Katalin Réka
2 Cervical cancer: global challenges
   Dr. Patczai D. Göcze Katalin Réka
3 Vaccination and screening: guidelines, trends
   Dr. Stefanovits Ágnes
4 Vaccination and screening: guidelines, trends
   Dr. Stefanovits Ágnes
5 HPV genotyping
   Dr. Gombos Katalin
6 HPV genotyping
   Dr. Gombos Katalin
7 Clinical care
   Dr. Stefanovits Ágnes
8 Clinical care
   Dr. Stefanovits Ágnes
9 Molecular biomarkers and their current and future applications
   Dr. Gombos Katalin
10 Molecular biomarkers and their current and future applications
   Dr. Gombos Katalin
11 Personalized medicine
   Dr. Patczai D. Göcze Katalin Réka
12 Personalized medicine
   Dr. Patczai D. Göcze Katalin Réka
Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Dr. Gombos Katalin (O840HO), Dr. Patczainé Dr. Gőcze Katalin Réka (YS4QMI), Dr. Stefanovits Ágnes (W19FKI)
OAF-MOD-T  MOLECULAR DIAGNOSTICS

Course director: DR. JUDIT ERZSEBET PONGRACZ, professor
Department of Pharmaceutical Biotechnology  pongracz.e.judit@pte.hu

1 credit  •  midterm grade  •  Optional subject  •  autumn semester  •  recommended semester: 5

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 5 – 150  Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
Structure of a molecular genetic laboratory, working areas, special devices and instrumentation. Biological information.

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

Mid-term exams
Writing test

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

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
  www.medbiotech.com
- Recommended literature

Lectures
1  Structure of a molecular genetic laboratory, working areas, special devices and instrumentation. Biological information.
   Dr. Pongrácz Judit Erzsébet
2  Mutations, polymorphisms. The genetic code.
   Dr. Pongrácz Judit Erzsébet
3  Mutations, polymorphisms. The genetic code.
   Dr. Pongrácz Judit Erzsébet
4  Special mutation consequences.
   Dr. Pongrácz Judit Erzsébet
5  Dynamic mutations.
   Dr. Pongrácz Judit Erzsébet
6  Mendelian inheritance.
   Dr. Pongrácz Judit Erzsébet
7  Multifactorial diseases.
   Dr. Pongrácz Judit Erzsébet
8  Examples for monogenic diseases.
   Dr. Pongrácz Judit Erzsébet
9  Examples for monogenic diseases.
   Dr. Pongrácz Judit Erzsébet
10 Examples for monogenic diseases.
   Dr. Pongrácz Judit Erzsébet
11 Pharmacogenetics.
   Dr. Pongrácz Judit Erzsébet
12 Molecular testing in oncology.
   Dr. Pongrácz Judit Erzsébet
13 Methodology of the molecular diagnostic procedures.
   Dr. Pongrácz Judit Erzsébet
14 Methodology of the molecular diagnostic procedures.
   Dr. Pongrácz Judit Erzsébet
Practices
Seminars
Exam topics/questions
www.medbiotech.com

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
## OAF-MOT-T  Molecular Therapies

**Course director:** DR. JUDIT ERZSÉBET PONGRÁCZ, professor  
Department of Pharmaceutical Biotechnology • pongracz.e.judit@pte.hu

| 1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5 |
|---|---|---|

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

**Course headcount limitations (min.-max.):** 5 – 150  
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

### Topic
Gene therapy, in vivo gene therapy

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

### Mid-term exams
Writing test

### Making up for missed classes
None

### Reading material
- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**  
  [www.medbiotech.com](http://www.medbiotech.com)
- **Recommended literature**

### Lectures

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<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>2</td>
<td>Functional genomics II</td>
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<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>3</td>
<td>Recombinant protein expression</td>
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<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>4</td>
<td>Gene therapy, in vivo gene therapy</td>
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<td></td>
<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>5</td>
<td>Ex vivo gene therapy, Therapies based on protein replacement I</td>
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<td></td>
<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>6</td>
<td>Therapies based on protein replacement II</td>
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<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>7</td>
<td>Recombinant antibodies and phage phage display technique</td>
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<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>8</td>
<td>Anti-cytokine therapy (Sepsis)</td>
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<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>9</td>
<td>Transgene technology and mouse models in modern biological research</td>
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<td>Dr. Pongrácz Judit Erzsébet</td>
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<td>10</td>
<td>Embryonic and adult stem cells for regenerative medicine I</td>
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<td>11</td>
<td>Embryonic and adult stem cells for regenerative medicine II</td>
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<td>12</td>
<td>Cell cycle and cancer therapy, p53 I</td>
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<td>Cell cycle and cancer therapy, p53 II</td>
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<td>14</td>
<td>Gene silencing technologies</td>
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<td>Dr. Pongrácz Judit Erzsébet</td>
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www.medbiotech.com

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-N27-T  CLINICAL HUNGARIAN 1

Course director: DR. TIMEA NÉMETH, assistant professor
Department of Languages for Specific Purposes • timea.nemeth@aok.pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 5

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 15  Prerequisites: OAE-H4A-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The aim of the course is to help international students during their clinical studies to develop appropriate Medical Hungarian language competencies and also widen the scope of existing competencies in the field of doctor-patient communication.

Conditions for acceptance of the semester

Participation in classes 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.

Mid-term exams

2 oral tests

Making up for missed classes

To be discussed with the course tutor in each individual case.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures

Practices

Seminars

1  Bodyparts, internal organs
2  Bodyparts, internal organs
3  Diseases, medication
4  Diseases, medication
5  Time expressions
6  Time expressions
7  Questions and answers related to pain
8  Questions and answers related to pain
9  History taking, giving instructions
10 History taking, giving instructions
11 Improving listening comprehension skills
12 Improving listening comprehension skills
13 Improving listening comprehension skills
14 Improving listening comprehension skills
15 Clinical visits to practice history taking in Hungarian
16 Clinical visits to practice history taking in Hungarian
17 Clinical visits to practice history taking in Hungarian
18 Clinical visits to practice history taking in Hungarian
19 Clinical visits to practice history taking in Hungarian
20 Clinical visits to practice history taking in Hungarian
21 Clinical visits to practice history taking in Hungarian
22 Clinical visits to practice history taking in Hungarian
23 Bedside presentation and evaluation
24 Bedside presentation and evaluation
Exam topics/questions

Bedside presentation at various clinical departments.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SJYRAV), Egyed Csilla Klára (Z1BN90), Eklecsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Roncezykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
OAF-N70-T  CLINICAL HUNGARIAN 3

Course director:  DR. TIMEA NÉMETH, assistant professor
Department of Languages for Specific Purposes • timea.nemeth@aok.pte.hu

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 5
Number of hours/semester:  0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 15  Prerequisites:  OAE-H4A-T completed

Topic
The aim of the course is to help international students during their clinical studies to develop appropriate Medical Hungarian language competencies and also widen the scope of existing competencies in the field of doctor-patient communication.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

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

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
Practices

Seminars
1  Symptoms of dermatological diseases in Hungarian
2  Symptoms of dermatological diseases in Hungarian
3  Dermatological history taking
4  Dermatological history taking
5  Symptoms of ENT diseases in Hungarian
6  Symptoms of ENT diseases in Hungarian
7  ENT history taking
8  ENT history taking
9  Symptoms of haematological diseases in Hungarian
10 Symptoms of haematological diseases in Hungarian
11 Improving listening comprehension skills
12 Improving listening comprehension skills
13 Improving listening comprehension skills
14 Improving listening comprehension skills
15 Clinical visits to practice history taking in Hungarian
16 Clinical visits to practice history taking in Hungarian
17 Clinical visits to practice history taking in Hungarian
18 Clinical visits to practice history taking in Hungarian
19 Clinical visits to practice history taking in Hungarian
20 Clinical visits to practice history taking in Hungarian
21 Clinical visits to practice history taking in Hungarian
22 Clinical visits to practice history taking in Hungarian
23 Bedside presentation and evaluation
24 Bedside presentation and evaluation

Exam topics/questions
Bedside presentation at various clinical wards.
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZGI), Dr. Warta Vilmos (SIYRAV), Egyed Csilla Klára (Z1BN90), Ekliicsné Dr. Lepenye Katalin (JMXSC), Krommer Zoltán (MQSHNA), Kurdirné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Ronczykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
**OAF-N71-T CLINICAL HUNGARIAN 4**

**Course director:** DR. TIMEA NÉMETH, assistant professor  
Department of Languages for Specific Purposes • tinea.nemeth@aok.pte.hu

<table>
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<td><strong>Prerequisites:</strong> OAE-H4A-T completed</td>
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**Topic**

The aim of the course is to help international students during their clinical studies to develop appropriate Medical Hungarian language competencies and also widen the scope of existing competencies in the field of doctor-patient communication.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

Making up for missed classes

To be discussed with the course tutor in each individual case.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  

**Lectures**

**Practices**

**Seminars**

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<td>Orthopedic history taking</td>
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<td>4</td>
<td>Orthopedic medical history</td>
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<td>5</td>
<td>Symptoms of cardiological diseases in Hungarian</td>
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<td>7</td>
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<td>Symptoms of urological and OBGYN diseases in Hungarian</td>
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<td>Symptoms of urological and OBGYN diseases in Hungarian</td>
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<td>Improving listening comprehension skills</td>
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<td>Clinical visits to practice history taking in Hungarian</td>
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<td>23</td>
<td>Bedside presentation and evaluation</td>
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<td>24</td>
<td>Bedside presentation and evaluation</td>
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</table>

**Exam topics/questions**

Bedside presentation at various clinical wards.
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedüs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébék-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SJYRAV), Egyed Csilla Klára (Z1BN90), Eklicsné Dr. Lepenye Katalin (JMXSC), Krommer Zoltán (M5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta (), Roncezkné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szántóné Dr. Csongor Alexandra (UDKY0J)
OAF-NMN-T  NEUROIMAGING METHODS IN NEUROPSYCHOLOGICAL RESEARCH

Course director: Dr. ÁDÁM FELDMANN, assistant professor
Department of Behavioural Sciences • adam.feldmann@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5

Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 10
Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

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
Maximum of 25 % absence allowed

Mid-term exams
Making up for missed classes
Should be discussed with the course tutor in each individual case.

Reading material
- Obligatory literature
- Literature developed by the Department
  Materials are available on Neptun MeetStreet
- Notes
- Recommended literature

Lectures
Practices
Seminars
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 History of neuroimaging, elements.
8 fMRI and sMRI basics.
9 Experimental design (block design).
10 Advanced experimental design (event-related fMRI).
11 Preprocessing steps and statistical analysis (hypothesis and data-driven methods).
12 Mapping cognitive functional networks and complex studies

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Feldmann Ádám (GLNQKN)
**OAF-PPV-T**  
**PRECLINICAL EXAMINATION OF PSYCHIATRIC DISEASES**

Course director: **DR. DÓRA ZELENA**, associate professor  
Institute of Physiology  
**dora.zelena@aok.pte.hu**

**Course**

- **Credit:** 2  
- **Midsemester Grade:** Optional subject  
- **Semester:** Autumn  
- **Recommended Semester:** 5

**Number of hours/semester:** 26 lectures + 0 practices + 0 seminars = total of 26 hours

**Course headcount limitations (min.-max.):** 5 – 20  
**Prerequisites:** OAA-AA2-T completed + OAA-EL2-T completed

**Topic**

Nowadays, psychiatric illnesses are becoming more common, partly due to increasing stress (eg anxiety, depression) and partly due to an aging society (eg dementia). Unfortunately, their therapy is not solved. A better understanding of the underlying mechanisms can bring us closer to discovering new drug targets. To do this, as well as testing new drugs, appropriate animal models and tests are required. Students will be able to get acquainted with the classification of psychiatric diseases, their main symptoms, and get a comprehensive picture of possible preclinical models and available as well as new methods under development. Special focus will be given to new research areas such as viral vectors, opto- and pharmacogenetics, epigenetics and „big data” and we will present their potential role in diagnosis and therapy.

**Conditions for acceptance of the semester**

- Maximum of 25 % absence allowed

**Mid-term exams**

- At the end of the course, students write a written test.

**Making up for missed classes**

- Make-up classes are possible if needed upon consultation.

**Reading material**

- **Obligatory literature**

- **Literature developed by the Department**
  
  Hand-outs will be given.

- **Notes**

- **Recommended literature**

**Lectures**

1. Introduction: Categorization of psychiatric diseases, validity of animal models  
   Dr. Zelena Dóra

2. Introduction: Categorization of psychiatric diseases, validity of animal models  
   Dr. Zelena Dóra

3. The role of motion in preclinical studies, the Parkinson and Huntington’s disease, viral vectors in therapy  
   Dr. Zelena Dóra

4. The role of motion in preclinical studies, the Parkinson and Huntington’s disease, viral vectors in therapy  
   Dr. Zelena Dóra

5. Circadian rhythm, major regulators and role in the development and research of psychiatric diseases  
   Dr. Zelena Dóra

6. Circadian rhythm, major regulators and role in the development and research of psychiatric diseases  
   Dr. Zelena Dóra

7. Controlling sleep and wakefulness, pathological EEG signs of psychiatric diseases  
   Dr. Zelena Dóra

8. Controlling sleep and wakefulness, pathological EEG signs of psychiatric diseases  
   Dr. Zelena Dóra

9. Effect of anxiety, early life events through epigenetic changes  
   Dr. Zelena Dóra

10. Effect of anxiety, early life events through epigenetic changes  
    Dr. Zelena Dóra

11. Post-traumatic stress disorder as a great challenge of our time  
    Dr. Zelena Dóra

12. Post-traumatic stress disorder as a great challenge of our time  
    Dr. Zelena Dóra

13. Mania and depression: Can it be positive?  
    Dr. Zelena Dóra
Mania and depression: Can it be positive?
Dr. Zelena Dóra

Learning and memory, from elementary processes till complex tests
Dr. Zelena Dóra

Dementia, Alzheimer’s Disease, an important problem of our aging society, „big data” data collection (proteomica, lipidomica, etc.) and possibilities their usefulness in psychiatry
Dr. Zelena Dóra

Dementia, Alzheimer’s Disease, an important problem of our aging society, „big data” data collection (proteomica, lipidomica, etc.) and possibilities their usefulness in psychiatry
Dr. Zelena Dóra

Social behavior, friendship and aggression in animals and sick people from mechanisms to therapeutic options. Opto- and pharmacogenetic methods in research.
Dr. Zelena Dóra

Social behavior, friendship and aggression in animals and sick people from mechanisms to therapeutic options. Opto- and pharmacogenetic methods in research.
Dr. Zelena Dóra

Drugs and addiction. Everyone is addicted?
Dr. Zelena Dóra

Drugs and addiction. Everyone is addicted?
Dr. Zelena Dóra

The relationship of psychiatric diseases with metabolism, the brain-gut axis and the vagus in the development and therapy of diseases
Dr. Zelena Dóra

The relationship of psychiatric diseases with metabolism, the brain-gut axis and the vagus in the development and therapy of diseases
Dr. Zelena Dóra

Examination
Dr. Zelena Dóra

Examination
Dr. Zelena Dóra

Practices
Seminars
Exam topics/questions
Will be announced during the semester.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject Participants
OAF-SSP-T  SPORT-SPECIFIC INJURY PREVENTION

Course director:  Dr. Katalin Réka Patczai-Gőcze, assistant professor
Sports Medicine Center • katalin.gocze@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 5

Number of hours/semester:  10 lectures + 0 practices + 0 seminars = total of 10 hours
Course headcount limitations (min.-max.):  5 – 20  Prerequisites: none

Topic
Over the past years the world has seen marvelous sport performances from athletes above 35. Just think about Tom Brady, Roger Federer, Serena Williams, Zlatan Ibrahimovic or Gianluigi Buffon. Not only genetics determine the possibilities, the success, the boundaries and the future of elite athletes. Being among top competitors for decades needs conscious planning, monitoring, evaluation and continuous adjustments. In order to maximize and prolong success by utilizing their capabilities to their highest potential interdisciplinary team works behind the scenes using up-to-date knowledge and scientifically proven, tested methods on a daily basis.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
félévközi jegy

Making up for missed classes

Reading material
- Obligatory literature
- Literature developed by the Department
  jegyzet
- Notes
- Recommended literature

Lectures

1 Overuse injuries
   Dr. Váncsodi József
2 Physical and functional tests, monitoring in the lab
   Dr. Váncsodi József
3 Biomechanics, postural analysis, preventive core training
   Szabó Dorottya
4 Sportspecific proprioceptive training
   Szabó Dorottya
5 Sportspecific yoga I.
   Dr. Cziger-Nemes Vanda Ágnes
6 Sportspecific yoga II.
   Dr. Cziger-Nemes Vanda Ágnes
7 Recovery techniques for athletes
   Szabó Dorottya
8 Proactive sport coaching
   Dr. Váncsodi József
9 Injury prevention for young athletes. Long term athlete development (LTAD)
   Dr. Patczainé Dr. Gőcze Katalin Réka
10 Test
   Dr. Patczainé Dr. Gőcze Katalin Réka

Practices

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Cziger-Nemes Vanda Ágnes (GDPPF3), Dr. Patczainé Dr. Gőcze Katalin Réka (YS4QMI), Dr. Váncsodi József (HW4DB2), Szabó Dorottya (LMHCCHS)
INTRODUCTION TO THE USMLE STEP 1 - CLINICAL CASE SCENARIOS

Course director: DR. KATALIN NORA LÖRINCZ, Ph.D. student
Department of Neurology • lorinczkati@gmail.com

2 credit • midterm grade • Optional subject • both semesters • recommended semester: 5

| Number of hours/semester: | 0 lectures + 0 practices + 24 seminars = total of 24 hours |
| Course headcount limitations (min.-max.): | 2 – 30 |
| Prerequisites: | none |

Topic
The Up to Date course intends to bridge basic and preclinical science facts to clinical applications, theoretical knowledge to practical decisions in clinical case scenarios.

While the current educational System in medicine supports horizontal teaching of basic science subjects, following preclinical and finally clinical subjects, there is little encouragement for students to think vertically, in organ systems, appreciating the anatomy, physiology, pathology and pharmacology of the given organ System as one and whole.

Our course aims to motivate students to rethink the theoretical facts studied and apply them in clinical cases examining the students ’ understanding in the anatomy, physiology, pathophysiology, pathology and pharmacology of the given organ system.

The curriculum of the course consists of 10 organ Systems: Cardiology, Endocrinology, Gastrointestinal System, Hematology and Oncology, Nervous System and special senses, Connective tissue and skin, Musculoskeletal System, Reproductive System, Renal System and Respiratory System.

The seminars start with theoretical introduction dwelling on basic principles emphasizing high yield facts including explanation of basic science mechanisms introduction of promising preclinical stage drug trials followed by interactive case interpretation - question and answer sessions.

The clinical cases interpreted include labor parameters, tissue specimens, histological slides, different tissue stains and diagnostic scans representing the variety of information a physician needs to assess to diagnose a disease and find the best treatment option available based on evidences to date for the individual patient.

The course follows the United States Medical Licensing Examination’s Step 1 curriculum for Organ Systems providing valuable learning experience for students interested in taking the exam as well.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
The exam will be held at the closing session of the course.
The test consists of 40 USMLE style questions, test duration: 60 minutes.
The questions - describing clinical situations assessing the examinee’s ability to apply basic science, preclinical science, and clinical science knowledge, concepts and principles - are multiple choice questions.
The questions will be chosen from the cases discussed on the seminars, 4 questions from each organ System.

Making up for missed classes
Personal consultation

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  First Aid for the USMLE Step 1 2018, 28th Edition [Tao Le, Vikas Bhushan]
  Fundamentals of Pathology: http://www.pathoma.com/
  UWorld Step 1 kérdéshank: https://www.uworld.com/
  Step-Up to USMLE Step 1 2015 Seventh Edition, Michael McInnis

Lectures
Practices
1 Kardiológia -embriólogiájai anatómiai élettani vonatkozások. Az elméleti bevezetésben a fetális keringés,a szív pitvar és kamrai tagolódása, a billentyűk fejlődése, a szív anatómája: vérérellátás variációi, pericardium felépítése, élettani
2 Kardiológia-patológiai vonatkozások.esetmegbeszélés Patológiai elméleti ismertetés: Congenitális fejlődési rendellenességek,Hypertonia,Atherosclerosis,Aorta aneurysma, dissectio,LSZ manifestációi, Acut myocardialis infarctus, Szívelégtelenség, Esetmegbeszélés
3 Kardiológia-gyógyzsantai alapok-esetelmélezm Elmeleti bevezetés: Hypertonia kezelése, Antianginás terápia, Antiarrhythmiás szerz esetelmélezm
5 Endokrinológia-patológiai gyógyzsantai vonatkozások-esetelmélezméssz Hypadrenia, Cushing syndrôma differenciál-diagnózisa, Hyperaldoszteronizmus, Pheochromocytoma, Hyper-hypothyreosis, Diabetes mellitus terápiája Esetelmélezm
6 Gasztroenterológia-embriólogiájai és anatómiai háttér Elmeleti összefoglaló: Tracheoesophagealis fistula, Pylorus stenosis, Pancreas annulare, intestinal atresia, Portosystemás sőtők, Külső és belső aranyeres csonékos, direkt, indirekt és femorális sérv anatómája, Esetelmélezm
7 Gasztroenterológia-körlelettani és patológiai vonatkozások esetelmélezzel A bilirubin metabolizmus rendellenességei, leuker differenciált-diagnózisa, Használomirigy gyulladás, Alcohol okozta májbetegségek, Non-alcohololy fatty liver, Cirrhosis körlelettani vonatkozásai, Gasztroenterológia-patológiai és gyógyzsantai vonatkozások Reflux esophagitis, Peptikus fekéli, Esophagus carcinoma, Gastritis, Gyulladásos bélbetegségek, Cholecystitis, Epektövek fajtái, Reflux terápiája, Laxatívumok, hányássolalépik, - Esetelmélezm
8 Hematológia-anatómiai, élettani vonatkozások Elmeleti összefoglaló: A koagulációs kaszkad komponensei, Thrombogenizis, Hb elektroforézis, Vércsatornok, Fetalis Hátlajdonságai Esetelmélezm
10 Neurologiánanatomiai és élettani háttér Esetelmélezm A gerincvelői pályák anatómiaja és funkciója, Az agyidegek anatómiai és funkciósan. A Circle of Willis anatómája, Motoros és senzoros homlocus, Thalamus, cerebellum felépítése és funkciója - Esetelmélezm
11 Neurologiá-anatómiai és élettani vonatkozások Elmeleti összefoglaló: A koagulációs kaszkad komponensei, Thrombogenizis-, Hb elektroforézis, Vércsatornok, Fetalis Hátlajdonságai Esetelmélezm
12 Neurologiá és Börgyógyászati bevezető, esetelmélezm Basalscjetes carcinoma, Laphámrák, Melanoma, Atópiás dermatitis, Psoriasis, Systemas lupus erythematosus, Esetelmélezm
13 Patológiai és gyógyszertani alapok Esetelmélezm
14 Patológiai és gyógyszertani alapok Esetelmélezm
15 Patológiai és gyógyszertani alapok Esetelmélezm
16 Patológiai és gyógyszertani alapok Esetelmélezm
17 Patológiai és gyógyszertani alapok Esetelmélezm
18 Patológiai és gyógyszertani alapok Esetelmélezm
Exam topics/questions

Exam question topics:

1. Cardiology
   Ventricular Septal Defect
   Acut myocardial infarct
   Atherosclerosis
   Hypertonia

2. Endocrionology
   Hyperthyreosis
   Cushing syndrome
   Diabetes mellitus
   Hypadrenia

3. Gastroenterology
   Pylorus stenosis
   Reflux esophagitis
   Peptic ulcer
   Panreatitis

4. Hematology and Oncology
   Fetal hemogobin
   Anemia differential diagnosis
   Follicular lymphoma
   Polycytemia

5. Nervous sytem and special senses
   Stroke
   Alzheimer’s disease
   Glioblastoma multiforme
   Glaucoma

6. Connective tissue and Dermatology
   Basal cell carcinoma,
   Atopic dermatitis
   Rheumatoid arthritis
   Systemic lupus eryhematus

7. Musculoskeletal System
   Carpal tunnel syndrome
   Unhappy triad
   Osteoporosis
   Osteosarcoma

8. Reproductive System
   Fetal alcohol syndrome,
   Dermoid cyst
   Human Papilloma Virus
   Benign Prostatic Hyperplasia

9. Renal System
   Horseshoe kidney
   Chronic renal failure
   Renal stones
   Diuretics
10. Respiratory system
   - Neonatal Respiratory Distress Syndrome
   - Pulmonary embolus
   - Adenocarcinoma of the lung
   - Asthma

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Lőrincz Katalin Nóra (B86B32)
OAF-VK1-T  HOW TO PASS PATHOPHYSIOLOGY 1 SUCCESSFULLY?

Course director: DR. MÁRTA BALASKÓ, associate professor
Institute for Translational Medicine • marta.balasko@aok.pte.hu

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<td>Prerequisites: OAA-EL2-T completed</td>
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Topic

The objective of this course is to present pathophysiological topics in a problem-based approach based on clinical cases. This approach will allow ambitious students to deepen their knowledge of the given topic. It also facilitates the understanding of interrelated mechanisms. Examiners of the Department will be involved. The aim of the course is to make students familiar with the complex approach to pathophysiology characterizing the oral exams.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

Oral exam based on the discussed topics.

Making up for missed classes

None

Reading material

- Obligatory literature
  None
- Literature developed by the Department
  Lecture presentations will be uploaded to NEPTUN.
- Notes
  None
- Recommended literature
  Harrison’s Principles of Internal Medicine, 19th edition, Mcgraw-Hill Education Ltd. 2015

Lectures

1  Problem-based discussion of heart failure.
   Dr. Balaskó Márta
2  Problem-based discussion of acute myocardial infarction.
   Dr. Balaskó Márta
3  Problem-based discussion of circulatory shock I.
   Dr. Szekeres-Solymár Margit
4  Problem-based discussion of circulatory shock II.
   Dr. Szekeres-Solymár Margit
5  Problem-based discussion of hypertension and its complications I.
   Dr. Szekeres-Solymár Margit
6  Problem-based discussion of hypertension and its complications II.
   Dr. Szekeres-Solymár Margit
7  Problem-based discussion of stroke and its background I.
   Dr. Balaskó Márta
8  Problem-based discussion of stroke and its background II.
   Dr. Balaskó Márta
9  Problem-based discussion of disorders of lung functions I.
   Dr. Szekeres-Solymár Margit
10 Problem-based discussion of disorders of lung functions II.
    Dr. Szekeres-Solymár Margit
11 Problem-based discussion of disorders of oxygen transport I.
    Dr. Balaskó Márta
12 Problem-based discussion of disorders of oxygen transport II.
    Dr. Balaskó Márta
13 Problem-based discussion of disorders of red blood cells I.
   Dr. Balaskó Márta
14 Problem-based discussion of disorders of red blood cells II.
   Dr. Balaskó Márta
15 Problem-based discussion of platelet disorders.
   Dr. Balaskó Márta
16 Problem-based discussion of thrombotic disorders.
   Dr. Balaskó Márta
17 Problem-based discussion of the abnormal ECG I.
   Dr. Szekeres-Solymár Margit
18 Problem-based discussion of the abnormal ECG II.
   Dr. Szekeres-Solymár Margit
19 Problem-based discussion of the abnormal ECG III.
   Dr. Szekeres-Solymár Margit
20 Problem-based discussion of the abnormal ECG IV.
   Dr. Szekeres-Solymár Margit
21 Problem-based discussion of renal disorders I.
   Dr. Szekeres-Solymár Margit
22 Problem-based discussion of renal disorders II.
   Dr. Szekeres-Solymár Margit
23 Problem-based discussion of salt and water disorders I.
   Dr. Szekeres-Solymár Margit
24 Problem-based discussion of salt and water disorders II.
   Dr. Szekeres-Solymár Margit

Practices
Seminars
Exam topics/questions
Pathophysiologival analysis of clinical case histories based on the topics discussed during the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-ALL-T  ALLERGOLOGY

Course director: Dr. Timea BERKI, professor
Department of Immunology and Biotechnology • berki.timea@pte.hu

1 credit • midterm grade • Elective subject • spring semester • recommended semester: 6

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 100
Prerequisites: OAA-IMM-T completed

Topic
The goal of the course is an introduction into the pathomechanism of the allergies based on the previous Basic Immunology knowledges. Parallel to this the basic clinical knowledges, the diagnostic possibilities, and the basis of therapeutical approaches will be discussed. Invited clinicians will present lectures about the airway allergies, nutritive allergies, and dermatological diseases.

In the developed countries the prevalence of Allergic diseases is continuously growing, affecting all segment of the population. Therefore the understanding of the immunological background, the epidemiology and the knowledges of modern diagnostic and therapeutic possibilities are expected from the MDs. Doctors are responsible for providing general information's about these common diseases for the public to prevent the false knowledges and adverse therapeutic interventions.

Conditions for acceptance of the semester
Maximum of 25% absence allowed

Mid-term exams

Making up for missed classes

Reading material
- Obligatory literature
  Abbas: Cellular and Molecular Immunology
- Literature developed by the Department
  www.immbio.hu • The web site of the department will show the actual lecture materials.
- Notes
- Recommended literature

Lectures
1 Mechanism of allergy development
   Dr. Berki Timea
2 IgE mediated allergic reactions
   Dr. Berki Timea
3 Epidemiology of allergies
   Dr. Berki Timea
4 Laboratory diagnostics of allergy
   Dr. Berki Timea
5 MALT, SALT, microbiota
   Dr. Berki Timea
6 Gastrointestinal allergies
   Dr. Süli Gábor
7 Skin allergies
   Dr. Gyulai Rolland Péter
8 Childhood allergies
   Dr. Mosdósi Bernadett
9 Asthma bronchiale
   Dr. Mosdósi Bernadett
10 Drug allergies
   Dr. Kinyő Ágnes
11 Upper airway allergies
   Dr. Piski Zalán Szabolcs
12 Therapeutic possibilities
   Sánticsné Dr. Pintér Erika
Practices
Seminars
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**The Antimicrobial Drugs and their Clinical Use**

**Course director:** Dr. Béla KOCSIS, associate professor

<table>
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<tr>
<th>Course code</th>
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<td>OAE-ASZ-T</td>
<td>The Antimicrobial Drugs and their Clinical Use</td>
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</table>

**Department of Medical Microbiology and Immunology • kocsis.bela@pte.hu**

**2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 6**

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

**Course headcount limitations (min.-max.):** 5 – 100

**Prerequisites:** OAP-MO1-T completed

**The subject can only be registered in case of a PASSED and valid health aptitude test!**

**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**

Maximum of 25 % absence allowed

**Mid-term exams**

In the first 2 weeks of the exam period we give three times possibilities to write tests

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
  - Jawetz et al.: Medical Microbiology

- **Literature developed by the Department**

- **Notes**

- **Recommended literature**

**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. Pharmacokinetics and pharmacodynamics of anti-infective drugs
   Dr. Kocsis Béla

5. The antibiotic prophylaxis.
   Dr. Kocsis Béla

6. The empiric antimicrobial therapy
   Dr. Kocsis Béla

7. The antimicrobial therapy based on microbiologic result
   Dr. Kocsis Béla

8. The choice of best antimicrobial drug
   Dr. Kocsis Béla

9. The reasons of an unsuccessful antimicrobial therapy
   Dr. Kocsis Béla

10. The antimicrobial drugs in details. The inhibitors of the cell wall biosynthesis Beta-lactams Penicillins
    Dr. Kocsis Béla

11. Cephalosporins, carbapenems, monobactams, glicopeptides
    Dr. Kocsis Béla

12. The inhibitors of the protein biosynthesis Aminoglicosides
    Dr. Kocsis Béla

13. Tetracyclines Chloramphenicol Macrolides
    Dr. Kocsis Béla

14. The inhibitors of the nucleic acid biosynthesis Rifampins Sulfonamides
    Dr. Kocsis Béla
15 Kinolons Fluorokinolons  
   Dr. Kocsis Béla  
16 The antimycotic drugs  
   Dr. Kocsis Béla  
17 The antiviral drugs HIV - AIDS  
   Dr. Kocsis Béla  
18 The antiparasitic therapy. The chemoprophylaxis of malaria  
   Dr. Kocsis Béla  
19 The antimicrobial therapy of respiratory and urinary tract infections  
   Dr. Kocsis Béla  
20 Cardiovascular and wound infections, sepsis  
   Dr. Kocsis Béla  
21 Central nervous system, abdominal and enteric infections  
   Dr. Kocsis Béla  
22 Antimicrobial therapy of patients under immunosuppression, pregnancy....  
   Dr. Kocsis Béla  
23 The pharmacological aspects of antimicrobial therapy  
   Dr. Kocsis Béla  
24 The future of antimicrobial therapy  
   Dr. Kocsis Béla  

Practices
Seminars
Exam topics/questions
None

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
### OAE-DM4-T  DEMONSTRATOR ACTIVITY 4

**Course director:**  
**DR. LÁSZLÓ JÓZSEF CZOPF**, associate professor  
1st Department of Internal Medicine • laszlo.czopf@aok.pte.hu

<table>
<thead>
<tr>
<th>2 credit • midterm grade • Elective subject • both semesters • recommended semester: 6</th>
<th>Dr. Laszlo József Czopf, associate prof. 1st Department of Internal Medicine • <a href="mailto:laszlo.czopf@aok.pte.hu">laszlo.czopf@aok.pte.hu</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hours/semester:</td>
<td>0 lectures + 24 practices + 0 seminars = total of 24 hours</td>
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<tr>
<td>Course headcount limitations (min.-max.):</td>
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<tr>
<td>Prerequisites:</td>
<td>OAE-DM3-T completed</td>
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</tbody>
</table>

**Topic**

This course gives support and acknowledgement for students performing documented and successful supervised teaching activities and taking an active part in organizing courses.

The subjects can be taken up in eight semesters (in a total value of 16 credits).

**Conditions for acceptance of the semester**

Students have to register every semester as demonstrators, should provide proof of previous demonstrator activity, and the semester will be signed on the basis of at least 24 hours of teaching or organizational activity. The grades will be given according to the Code of Demonstrators with additional requirements, that you can reach using the following links: Code of Demonstrator Students: [https://docs.google.com/document/d/1xkkyeRdZzCdphmqWEkpON0SQI34MpBBJqogG09fo18Rw/edit?usp=sharing](https://docs.google.com/document/d/1xkkyeRdZzCdphmqWEkpON0SQI34MpBBJqogG09fo18Rw/edit?usp=sharing)


**Mid-term exams**

At least two midterm tests should be successfully completed to pass.

**Making up for missed classes**

There are no absences accepted from the 24 hours demonstrator activity.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  
- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

The topics of the tests depend on the specific course of the demonstrator activity.

**Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject**

**Participants**

Dr. Czopf László József (BAVD1M), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Sebők Judit (GLM10L), Dr. Tamás Andrea (F7QM8G), Dr. Ujvári Balázs (EN1LY9)
Course: Causes of Expansion and Preventive Methods in Infectious Diseases

Course director: Dr. ZOLTÁN TIGYI, assistant professor
Department of Medical Microbiology and Immunology • tigyi.zoltan@pte.hu

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 6

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

Course headcount limitations (min.-max.): 2 – 22

Prerequisites: OAA-MB2-T completed + OAP-MO1-T completed + OAP-PA1-T completed

Topic

- factors contributing to the spread of infectious diseases, both within and outside the hospital,
- procedures for preventing and controlling the spread of infections,
- the classical and new methods used in epidemiology, the possible use of the results obtained by these methods to stop the spread of infectious diseases,
- the factors that human activity has caused in the Earth’s ecological system and which have an impact on the spread of infectious diseases, and the emerging (new) infectious diseases,
- the role of the human microbiota in the development of infectious and non-infectious diseases,
- emerging and re-emerging infectious diseases,
- possible ways of bioterrorist attacks and their early detection
- epidemiology and prevention of nosocomial infections,
- what are the possibilities for slowing down and stopping the spread of multi-resistant pathogens in a hospital environment
- Principles for the correct use of antimicrobial agents to reduce the risk of developing antimicrobial resistance
- effective method of vaccination to prevent certain infectious diseases

Conditions for acceptance of the semester

Presentation of the sub-topic chosen by the students, which belongs to the main topic. The 10-15 minute duration lecture is shown with help of the PowerPoint or other presentation software, and it follows lecturer’s introductory lecture about the main topic.

- A further expectations: student gives essential answers to the questions raised during the lectures and discussion.
- Student share his or her opinion about the topic is discussed.
- Evaluation: mid-year activity ~ 10%, lecture held in the subject: ~ 90%
- If performance is not sufficient, the student must answer 3 essay questions orally or in writing.

Mid-term exams

The opportunity of the personal appointment is assured and the tutor is open for the negotiation on how to make up the missed lessons or presentation.

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

- Obligatory literature
- Literature developed by the Department
  The slides of the seminars in PDF-file format.
- Notes
- Recommended literature
  Jawetz, Melnick & Adelberg’s Medical Microbiology; Geo. F. Brooks, Karen C. Carroll, Janet S. Butel, Stephen A. Morse, Timothy A. Mietzner; McGraw-Hill Education (Medical)), Ed. th
  Molecular Tools and Infectious Disease Epidemiology; Betsy Foxman; Academic Press is an imprint of Elsevier, 2012
  Diseases of Poverty: Epidemiology, Infectious Diseases, and Modern Plagues; Lisa V. Adams, John R. Butterly; Dartmouth; 2015
  New Frontiers of Molecular Epidemiology of Infectious Diseases; Serge Morand, François Beadeau, Jacques Cabaret; Springer 2012
  Infectious Disease Epidemiology: Theory and Practice; Kenrad E. Nelson, Carolyn Masters Williams; Jones & Bartlett Learning, 2012
  American Centre for Disease Prevention and Control; https://www.cdc.gov/
  www.who.int/en/
Lectures

1. Basic concepts, aims and tools, short historical introduction.
   Dr. Tigyi Zoltán

   Dr. Tigyi Zoltán

3. The transmission of infections (vectors, reservoirs). Reservoirs, source of infections, mode of transmission and port of entry for infections.
   Dr. Tigyi Zoltán

4. The transmission of infections (vectors, reservoirs) Reservoirs, source of infections, mode of transmission and port of entry for infections.
   Dr. Tigyi Zoltán

5. The traditional epidemiologic methods biostatistics, Viewpoints of statistical analysis, choosing of the right methods for statistical analysis, type of the studies: cohort (follow-up study), case-control, cross-sectional study, the limitations of the studies; the types of the bias/errors.
   Dr. Tigyi Zoltán

6. The traditional epidemiologic methods; the laboratory identification of pathogens, classic and new non-nucleic acid based methods, MALDI-TOF MS.
   Dr. Tigyi Zoltán

7. Molecular epidemiologic methods of infectious diseases. Plasmid profile analysis, ribotyping, macro-restrictions endonuclease mapping by pulsed field gel electrophoresis, types of PCR, isothermal reactions: loop-mediated isothermal amplification (LAMP), helicase-dependent amplification (HDA), transcription-mediated amplification (TMA), and nucleotide hybridizing methods.
   Dr. Tigyi Zoltán

8. Molecular epidemiologic methods of infectious diseases. Nucleotide sequencing based methods; Multi Locus Sequence Typing (MLST), core genome Sequence Typing, (cgMLST), whole genome sequencing (WGS).
   Dr. Tigyi Zoltán

9. How do environmental factors like climate, society, nutrition, human behaviour affect the spread of infectious diseases?
   Dr. Tigyi Zoltán

10. How do environmental factors affect the spread of infectious diseases? International travels, international trading, industry, agriculture and lands use etc.
    Dr. Tigyi Zoltán

11. How do environmental factors affect the spread of infectious diseases? The role of the humane microbiome in communicable and non-communicable diseases.
    Dr. Tigyi Zoltán

12. Emerging and re-emerging Infections
    Dr. Tigyi Zoltán

    Dr. Tigyi Zoltán

    Dr. Tigyi Zoltán

15. The risk of bioterrorism and its epidemiologic background; short historical overview. International treaties.
    Dr. Tigyi Zoltán

    Dr. Tigyi Zoltán

17. Epidemiology of the nosocomial (hospital acquired) infections, the major types: Catheter associated urinary tract infection, ventilation associated pneumonia.
    Dr. Tigyi Zoltán

18. Epidemiology of the nosocomial (hospital acquired) infections : surgical wound infections, catheter-related bloodstream infections, surgical wound infections. Possible ways to prevent the spread of multi-resistant pathogens.
    Dr. Tigyi Zoltán

19. The aims and methods of the infectious disease surveillance. Local and regional systems.
    Dr. Tigyi Zoltán

    Dr. Tigyi Zoltán

21. Factors and measures helping and inhibiting the development of antimicrobial resistance. Prevent infection, Diagnose and treat, infection effectively.
    Dr. Tigyi Zoltán
Factors and measures helping and inhibiting the development of antimicrobial resistance. Use antimicrobials wisely; Prevent transmission.
Dr. Tígyi Zoltán

The possibilities of the prevention of infectious diseases specific methods; vaccination;
Dr. Tígyi Zoltán

The possibilities of the prevention of infectious diseases aspecific methods....
Dr. Tígyi Zoltán

Practices
Seminars
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.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Tígyi Zoltán (IMRVFK)
# Basics of Gerontology

**Course director:**
**DR. ERIKA BURZÁNNÉ PÉTERVÁRI, associate professor**
Institute for Translational Medicine • erika.petervari@aok.pte.hu

<table>
<thead>
<tr>
<th>OAE-GER-T</th>
<th>Basics of Gerontology</th>
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</thead>
<tbody>
<tr>
<td><strong>Number of hours/semester:</strong></td>
<td>24 lectures + 0 practices + 0 seminars = total of 24 hours</td>
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<tr>
<td><strong>Course headcount limitations (min.-max.):</strong></td>
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<tr>
<td><strong>Prerequisites:</strong></td>
<td>OAP-BPR-T completed + OAP-KO1-T completed</td>
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</table>

**2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 6**

### 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

Maximum of 15% absence allowed

### Mid-term exams

Written account (test) from the topics of the course.

### Making up for missed classes

Writing an essay from the topic of the omitted lecture.

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
  - Lecture slides will be uploaded to Neptun.
- **Notes**
- **Recommended literature**

### Lectures

   Dr. Székely Miklós
   Dr. Székely Miklós
3. Biological theories of aging I  
   Dr. Balaskó Mártá
4. Biological theories of aging II  
   Dr. Balaskó Mártá
5. Cardiorespiratory disorders in the elderly I  
   Dr. Balaskó Mártá
6. Cardiorespiratory disorders in the elderly II  
   Dr. Balaskó Mártá
7. Changes of energy balance I  
   Burzánné Dr. Pétervári Erika
8. Changes of energy balance II  
   Burzánné Dr. Pétervári Erika
9. Gastrointestinal changes in the elderly I  
   Dr. Vincze Áron Endre
10. Gastrointestinal changes in the elderly II  
    Dr. Vincze Áron Endre
11. Endocrine changes with age  
    Dr. Garai János
12. Diabetes mellitus in the elderly  
    Dr. Garai János
13. Renal functions: changes with age  
    Dr. Székely Miklós
14. Salt/water balance changes with age  
    Dr. Székely Miklós
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

15 Geriatric syndromes I  
Dr. Székely Miklós
16 Geriatric syndromes II  
Dr. Székely Miklós
17 Gait disorders, motor system in the elderly  
Dr. Sarlós Gézáné (Dr. Varjú Cecília)
18 Aging and immune processes  
Dr. Sarlós Gézáné (Dr. Varjú Cecília)
19 Disorders in the central nervous system  
Dr. Takács Katalin Gyöngyi
20 Polypragmasia  
Dr. Takács Katalin Gyöngyi
21 Problems of the caretaking team  
Dr. Heim Szilvia
22 Chronic care, nursing  
Dr. Heim Szilvia
23 Elderly care and hospice.  
Dr. Csikós Ágnes Erika
24 Rehabilitation.  
Dr. Csikós Ágnes Erika

Practices
Seminars

Exam topics/questions

Concepts of gerontology. Demography  
Biological/chronological age. Physiological aging  
Biological theories of aging  
Acute/chronic diseases, polimorbidity in the elderly. Problems of diagnosis and therapy.  
Homeostatic functions and aging. Adaptability, vulnerability.  
Cardiorespiratory disorders in the elderly  
Changes of energy balance  
Gastrointestinal changes in the elderly  
Endocrine changes with age  
Diabetes mellitus in the elderly  
Renal functions: changes with age  
Salt/water balance changes with age  
Geriatric syndromes  
Gait disorders, motor system in the elderly  
Aging and immune processes  
Disorders in the central nervous system  
Polypragmasia  
Problems of the caretaking team  
Chronic care, nursing  
Elderly care and hospice.  
Rehabilitation.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-KK2-T  CLINICAL PATHOPHYSIOLOGY 2

Course director: DR. ANDRÁS GARAMI, associate professor
Institute for Translational Medicine • andras.garami@aok.pte.hu

1 credit • midsemester grade • Elective subject • spring semester • recommended semester: 6
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 30  Prerequisites: OAP-KO2-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Maximum of 15 % absence allowed

Mid-term exams

Test

Making up for missed classes

Not needed, because of test

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

  Székely Miklós: Principles of Pathophysiology.

Lectures

1  Thermoregulation disorders in clinical praxis
   Dr. Garami András
2  Gastroesophageal reflux disease
   Dr. Vincze Áron Endre
3  Hepatotoxins
   Dr. Pár Alajos
4  Dysfunctions of the colon
   Dr. Cziffer József
5  Malnutrition, clinical nutrition
   Dr. Garai János
6  Disorders of body composition, obesity
   Dr. Erhardt Éva
7  Disorders of urate metabolism
   Dr. Rumbus Zoltán
8  Lipid disorders in the clinical practice
   Dr. Bajnok László Zoltán
9  Acute abdomen in pediatrics
   Dr. Józsa Gergő
10 Late complications, fundamentals of therapy in diabetes mellitus
    Dr. Wittmann István
11 Iodine metabolism, thyroid functions
    Dr. Mezősi Emese
12 Diabetes insipidus, SIADH, natriuretic peptides, test exam
    Dr. Mezősi Emese
Practices
Seminars
Exam topics/questions
Same as the topics of the lectures.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
CASE REPORTS IN CLINICAL MICROBIOLOGY

Course director: DR. LEVENTE EMŐDY, professor emeritus
Department of Medical Microbiology and Immunology • emody.levente@pte.hu

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

Course director: DR. LEVENTE EMŐDY, professor emeritus
Department of Medical Microbiology and Immunology • emody.levente@pte.hu

Number of hours/semester: 20 lectures + 0 practices + 0 seminars = total of 20 hours
Course headcount limitations (min.-max.): 1 – 150
Prerequisites: OAA-IMM-T completed + OAP-MO1-T completed + OAP-PA1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The course deals with common and special cases of infectious diseases discussing the case history, clinical and laboratory diagnosis, therapy and prevention.
Case studies will be discussed with microbiological demonstration in each lecture. The lectures are problem solving in character, and they need a common thinking with the students.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Midterm student accounts will be held on the previously presented case reports.

Making up for missed classes
Individual preparation from the recommended books, the lecture slides, and from notes of fellow-students.

Reading material
- Obligatory literature
- Literature developed by the Department
  PowerPoint presentation to every case report.
- Notes
- Recommended literature
  http://highered.mcgraw-hill.com/sites/0072320419/student_view0/clinical_case_studies.html#
  http://www.kcom.edu/faculty/chamberlain/index.htm#Clinical%20Cases

Lectures
1 Pyoderma case story
   Dr. Emődy Levente
2 Pyoderma discussion
   Dr. Emődy Levente
3 Food poisoning case story
   Dr. Emődy Levente
4 Food poisoning discussion
   Dr. Emődy Levente
5 Pharyngotonsillitis case story
   Dr. Emődy Levente
6 Pharyngotonsillitis discussion
   Dr. Emődy Levente
7 Urinary tract infection case story
   Dr. Emődy Levente
8 Urinary tract infection discussion
   Dr. Emődy Levente
9 Bacterial haemolysis case story
   Dr. Emődy Levente
10 Bacterial haemolysis discussion
   Dr. Emődy Levente
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<th>Title</th>
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<td>11</td>
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<td>Dr. Emődy Levente</td>
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<td>15</td>
<td>Gas gangrene case story</td>
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<td>16</td>
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<td>Dr. Emődy Levente</td>
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<td>17</td>
<td>Intrauterine infection case story</td>
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<td>19</td>
<td>Meningitis case story</td>
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<tr>
<td>20</td>
<td>Meningitis discussion</td>
<td>Dr. Emődy Levente</td>
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</tbody>
</table>

**Practices**

**Seminars**

**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 lectures.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
Course director: DR. JÓZSEF VARGA, assistant professor
Department of Behavioural Sciences • jozsef.varga@aok.pte.hu

2 credit • midterm grade • Elective subject • spring semester • recommended semester: 6
Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 16
Prerequisites: OAP-MT5-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

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

Mid-term exams
Presentation of a topic + written final test.

Making up for missed classes
Additional homework or presentation.

Reading material
- Obligatory literature
- Literature developed by the Department
  Handouts, publications, additional materials, presentations. Materials are available on Neptun.
- Notes
- Recommended literature

Lectures
Practices
Seminars
1 Models of health and illness. Influence of behaviour on health and illness.
2 Models of health and illness. Influence of behaviour on health and illness.
3 Relationship, understanding, compliance, adherence in the practice of behavioural medicine.
4 Relationship, understanding, compliance, adherence in the practice of behavioural medicine.
5 Behavioural and psychological aspects of chronic illness.
6 Behavioural and psychological aspects of chronic illness.
7 Psychosocial risk factors and psychological rehabilitation of cardiovascular diseases.
8 Psychosocial risk factors and psychological rehabilitation of cardiovascular diseases.
9 Psychosomatics of gastrointestinal diseases and eating disorders.
10 Psychosomatics of gastrointestinal diseases and eating disorders.
12 Psychological reactions, risk factors and coping in oncological diseases. Psychoimmunology.
13 Psychological issues in gynecology and pulmonology.
14 Psychological issues in gynecology and pulmonology.
15 Pain, psychological methods of pain management.
16 Pain, psychological methods of pain management.
17 Behavioural medicine in treatment of dependencies.
18 Behavioural medicine in treatment of dependencies.
19 Cognitive approaches in behavioural medicine.
20 Cognitive approaches in behavioural medicine.
21 Behavioural methods in general practice, behaviour change.
22 Behavioural methods in general practice, behaviour change.
23 Behaviour, culture and illness.
24 Behaviour, culture and illness.

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Varga József (Q1NPTA)
Course director: DR. KATALIN EKLICS-LEPENYE, assistant professor  
Department of Languages for Specific Purposes • kata.eklics@aok.pte.hu

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 6

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

Course headcount limitations (min.-max.): 3 – 15  
Prerequisites: OAE-N65-T completed

Topic

Taking medical history with actors: simulation practices in the MediSkillsLab 2 is the second course following the first with the same name. This course also involves specialists as the interdisciplinary characteristic is inevitable to provide professional, linguistic and communicative approaches. Although based on history taking and empathetic skills developed during the first course, this course ushers the students into different specialties where we focus on filter questions (gastroenterology, cardiology, neurology, orthopedics, gynecology). Further emphasis is given to improve interviewing skills when taking the history of addicted and psychosomatic patients. Professional actors and lay volunteers are prepared for the scenarios as Standardized Patients applying a communicative approach. Although based on history taking and empathetic skills developed during the first course, this course includes individual history taking scenarios with actor-patients in the simulation lab that are video-recorded, analyzed and finally evaluated. Assessment criteria are informed in the beginning of the semester for observation and evaluation.

Conditions for acceptance of the semester

Maximum of 25 % absence allowed

Mid-term exams

The seminar is practice-based thus assessment of students includes individual history taking scenarios with actor-patients in the simulation lab that are video-recorded, analyzed and finally evaluated. Assessment criteria are informed in the beginning of the semester for observation and evaluation.

Making up for missed classes

Due to the character of the seminar make-up work for legitimate absences is not feasible.

Reading material

- Obligatory literature
- Literature developed by the Department
  
  Self-made digital educational materials: video-recorded doctor-patient conversations, history-taking interviews.
  Jegyzet: Eklics-Koppán: Language and Communication Specific Attributes of Medical History
- Notes
  Eklics-Koppán: Language and Communication Specific Attributes of Medical History
- Recommended literature

Lectures

Practices

Seminars

1. Revision of history taking.
3. Simulated patient-doctor-relative encounter in internal medicine.
4. Simulated patient-doctor-relative encounter in internal medicine.
15. Simulated patient-dermatologist interaction. Educating patients about outcome of an STD.
16. Simulated patient-dermatologist interaction. Educating patients about outcome of an STD.
21 Patient-centred approach in paediatrics.
22 Patient-centred approach in paediatrics.
23 Assessment.
24 Assessment.

Exam topics/questions
The seminar is practice-based thus assessment of students includes individual history taking scenarios with actor-patients in the simulation lab that are video-recorded, analyzed and finally evaluated. Assessment criteria are informed in the beginning of the semester.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
(), Dr. Kittka Bálint Pál (JVKFX), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Koppán Miklós Endre (VR60H8), Dr. Molnár Gergő Attila (GH1COA), Dr. Sarlós Patricia (LCRJVN), Dr. Sebők Judit (GLM10L), Éklicsné Dr. Lepenye Katalin (JMXXSC)
OAE-SSO-T  BASICS OF SURGICAL SIMULATION

Course director: Dr. GÁBOR JANCSÓ, associate professor
Department of Surgical Research and Techniques • jancsogabor@hotmail.com

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

Course headcount limitations (min.-max.): 1 – 6  Prerequisites: OAP-MUA-T completed

Number of hours/semester: 14 lectures + 10 practices + 0 seminars = total of 24 hours

Topic
Opportunities in simulation-based teaching play a more and more important role in medical education. Interested students can get an insight into the theory and practice of medical simulation through surgical simulators. Those who successfully implement the course can apply as demonstrator to the Medi Skills Lab.

Conditions for acceptance of the semester
Maximum of 25% absence allowed

Mid-term exams
Mid-term exam

Making up for missed classes
None.

Reading material
- Obligatory literature
- Literature developed by the Department
  http://aok.pte.hu/en/egyseg/oktatasianyagok/130
- Notes
- Recommended literature
  Gallagher, Anthony G., O’Sullivan, Gerald C. - Fundamentals of Surgical Simulation

Lectures
1 Basics of simulation-based education
   Dr. Schlégl Ádám Tibor
2 Simulator groups
   Dr. Schlégl Ádám Tibor
3 Basic skill simulation
   Dr. Jancsó Gábor
4 Basic skill simulation
   Dr. Jancsó Gábor
5 High-fidelity simulation
   Dr. Schlégl Ádám Tibor
6 High-fidelity simulation
   Dr. Schlégl Ádám Tibor
7 Laparoscopic simulation
   Dr. Varga Péter
8 Laparoscopic simulation
   Dr. Varga Péter
9 Basics of the Lap-VR simulator
   Dr. Varga Péter
10 Basics of the Lap-VR simulator
   Dr. Varga Péter
11 Scenarios of the Lap-VR simulator
   Dr. Varga Péter
12 Role of de-briefing in simulation-based education
   Dr. Schlégl Ádám Tibor
13 Role of de-briefing in simulation-based education
   Dr. Schlégl Ádám Tibor
14 Processing of de-briefing data in Lap-VR
   Dr. Schlégl Ádám Tibor
Practices
1 Hands-on training: Basic skill simulators
2 Hands-on training: Basic skill simulators
3 Hands-on training: High fidelity simulators
4 Hands-on training: High fidelity simulators
5 Hands-on training: High fidelity simulators
6 Hands-on training: Virtual reality simulators
7 Hands-on training: Virtual reality simulators
8 Hands-on training: Virtual reality simulators
9 Theoretical exam
10 Practical exam

Seminars
Exam topics/questions
Practical exam (60 %)
Theoretical exam - One of the following - (40 %):
Basics of simulation-based education, instruments of medical simulation
Basic skill simulators
High-fidelity simulators
Laparoscopy simulators
Scenario-based education using Lap-Vr
Role of de-briefing in simulation-based education
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Jancsó Gábor (V382Q9), Dr. Maróti Péter Dezső (X7MO4Y), Dr. Schlégl Ádám Tibor (VZKMS6), Dr. Varga Péter (MJFBXQ)
**OAE-TD4-T  STUDENT PROJECT RESEARCH 4**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. TIBOR ERTL, professor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Undergraduate Research • <a href="mailto:tibor.ertl@aok.pte.hu">tibor.ertl@aok.pte.hu</a></td>
</tr>
</tbody>
</table>

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

Number of hours/semester: 0 lectures + 20 practices + 0 seminars = total of 20 hours

Course headcount limitations (min.-max.): 1 – 300

Prerequisites: OAE-TD3-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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 enrol 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 enrol 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. For detailed requirements please read the following document: [http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng](http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng)

**Mid-term exams**

Making up for missed classes

Not applicable.

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Not applicable

**Lectures**

**Practices**

**Seminars**

Exam topics/questions

Not applicable

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Balogh Péter (KVAPT7)
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

Maximum of 25% absence allowed

Mid-term exams

There is a test exam at the end of the course.

Making up for missed classes

Not possible.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature


Lectures

- Introduction
- Anabolic steroids
- Beta 2 receptor agonists
- Creatine
- Dietary supplements
- Gene doping and metabolic modulators I
- Gene doping and metabolic modulators II
- Enhancement of oxygen transport
- Diuretics and other masking agents
- Prohibited methods

Exam topics/questions

1. Introduction
2. Anabolic steroids
3. Beta 2 receptor agonists
4. Creatine
5. Dietary supplements
6. Gene doping and metabolic modulators I
7. Gene doping and metabolic modulators II
8. Enhancement of oxygen transport
9. Diuretics and other masking agents
10. Prohibited methods
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pozsgai Gábor (TQC4SQ)
**OAF-AMM-T \ INTRODUCTION AND BASICS OF OPERATIONAL MEDICINE**

**Course director:**

DR. TAMÁS MOLNÁR F., professor

Department of Operational Medicine • tfmolnar@gmail.com

2 credit • midsemester grade • Optional subject • both semesters • recommended semester: 6

Number of hours/semester: 18 lectures + 6 practices + 0 seminars = total of 24 hours

Course headcount limitations (min.-max.): 5 – 25

Prerequisites: OAA-EL2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

After defining the concept of Operational Medicine, we address the peculiarities of healthcare under special/extreme conditions and circumstances. For the attainment of an extended knowledge about the background of the subject, it is necessary to study the structure and management system of the armed forces, as well as the bases of international and Hungarian military organizations and treaties. We will try to give a general idea of Military Medicine, Disaster Medicine and Law Enforcement Medicine, and of their differences compare to other medical work areas.

Teaching materials used by NATO, The Hungarian Defence Forces and the Ministry of the Interior are also applied in the subject-matter of instruction. The course is interactive - for the deeper understanding of emerging issues during the semester, manual trainings will also be held.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

The last three occasions, which are the practices, will be held in one session discussed during the first lecture.

**Making up for missed classes**

**Reading material**

- Obligatory literature
- Literature developed by the Department
  - Teaching materials of the course (from the instructors).
- Notes
- Recommended literature

**Lectures**

1. The concept of Operational Medicine. The status of Military Medicine, Disaster Medicine and Law Enforcement Medicine in Hungary
   Dr. Rendeki Szilárd

2. The concept of Operational Medicine. The status of Military Medicine, Disaster Medicine and Law Enforcement Medicine in Hungary
   Dr. Rendeki Szilárd

3. Damage Control Surgery
   Dr. Molnár F. Tamás

4. Damage Control Surgery
   Dr. Molnár F. Tamás

5. Major Incident Medical Management and Support (MIMMS) in a nutshell
   Dr. Nagy Bálint János

6. Major Incident Medical Management and Support (MIMMS) in a nutshell
   Dr. Nagy Bálint János

7. CBRN - Chemical, Biological, Radiological and Nuclear Warfare.
   Marosné Berta Beáta

8. CBRN - Chemical, Biological, Radiological and Nuclear Warfare.
   Marosné Berta Beáta

9. Basics of Armed Forces. The structure of The Hungarian Defence Forces and the NATO
   Dr. Rendeki Szilárd

10. Basics of Armed Forces. The structure of The Hungarian Defence Forces and the NATO
    Dr. Rendeki Szilárd

11. The progress of First Aid levels between 1914-2019. From CCS to ROLE IV.
    Dr. Molnár F. Tamás
The progress of First Aid levels between 1914-2019. From CCS to ROLE IV.
Dr. Molnár F. Tamás

NATO levels of Medical Care
Dr. Siptár Miklós

NATO levels of Medical Care
Dr. Siptár Miklós

Disaster Medic - fire service and disaster management in primary care
Dr. Woth Gábor László

Disaster Medic - fire service and disaster management in primary care
Dr. Woth Gábor László

The importance of Anatomy in Operational Medicine
Dr. Farkas József

The importance of Anatomy in Operational Medicine
Dr. Farkas József

Practices
1. Training, field practice
2. Training, field practice
3. Training, field practice
4. Training, field practice
5. Training, field practice
6. Training, field practice + TEST

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Farkas József (TA5T02), Dr. Molnár F. Tamás (AY4XHG), Dr. Nagy Bálint János (B8MX1K), Dr. Rendeki Szilárd (S70CCV), Dr. Woth Gábor László (IRFDPE), Marosné Berta Beáta (ZMKRFH)
**OAF-DMB-T  Biophysical Basics of Diagnostic and Therapeutic Methods**

**Course director:**

**DR. GÁBOR HILD, associate professor**  
Department of Biophysics • gabor.hild@aok.pte.hu

<table>
<thead>
<tr>
<th>Credit</th>
<th>Midsemester grade</th>
<th>Optional subject</th>
<th>Spring semester</th>
<th>Recommended semester</th>
<th>2</th>
</tr>
</thead>
</table>

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

**Course headcount limitations (min.-max.):**  
3 – 10

**Prerequisites:**  
OAA-BI2-T completed + OAA-EL2-T completed

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**Topic**

During the course the students get acquainted with the physical basics of the modern medical diagnostic and therapeutic methods, from a clinical approach. The aim of the course is to underlie or supplement the clinical knowledge with necessary information. During the seminars, wherever possible, practical demonstrations will also be held.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

**Making up for missed classes**

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  - Kane, S.A. Introduction to Physics in Modern Medicine, Taylor & Francis, London, 2003
  - Damjanovich Sándor, Fidy Judit, Szöllősi János (eds.): Medical Biophysics, Medicina, Budapest, 2008

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Hild Gábor (XIKZE2), Dr. Lukács András Szilárd (LZ214Q), Dr. Ujfaluši Zoltán (AZSO9Z)
OAF-DRH-T  Microbiology Cases of House M.D.

Course director:  DR. ÉVA MIKÓ, associate professor
Department of Medical Microbiology and Immunology  miko.eva@pte.hu

2 credit  midsemester grade  Optional subject  spring semester  recommended semester: 6

Number of hours/semester:  24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.):  4 – 50  Prerequisites:  OAP-MO1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
Interactive microbiology case studies based on the episodes of House M.D. Problem solving discussion after watching the actual scene.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Grading is based on attendance/missed classes and activity during lectures.

Making up for missed classes
Personal consultation

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
1  Leprosy
   Dr. Szereday László
2  Leprosy
   Dr. Szereday László
3  Lyme disease
   Dr. Szereday László
4  Lyme disease
   Dr. Szereday László
5  HIV
   Dr. Szereday László
6  HIV
   Dr. Szereday László
7  Psittacosis
   Dr. Szereday László
8  Psittacosis
   Dr. Szereday László
9  Syphilis
   Dr. Szereday László
10  Syphilis
    Dr. Szereday László
11  SSPE
    Dr. Szereday László
12  SSPE
    Dr. Szereday László
13  Gonorrhea
    Dr. Szereday László
14  Gonorrhea
    Dr. Szereday László
Rickettsialpox
Dr. Szereday László

Leptospirosis
Dr. Szereday László

Rabies
Dr. Szereday László

Hepatitis C
Dr. Szereday László

Herpes simplex
Dr. Szereday László

Practices
Seminars
Exam topics/questions
see lecture topics

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-DTS-T  THE ROLE OF DRUG TRANSPORTERS

Course director: DR. LUCA JÁROMI, assistant professor
Department of Pharmaceutical Biotechnology • jaromi.luca@pte.hu

2 credit • midterm grade • Optional subject • both semesters • recommended semester: 6

Number of hours/semester: 28 lectures + 0 practices + 0 seminars = total of 28 hours
Course headcount limitations (min.-max.): 5 – 15 Prerequisites: OAP-GT1-T completed

Topic
Understanding the clinical importance, role and molecular procedures of interindividual variability in drug response is a critical area of drug development and clinical pharmacotherapy. The genetic polymorphisms in drug-metabolizing enzymes, receptors, transporters and other drug targets may have a crucial role in the background of this phenomenon, that can lead to the interindividual differences in molecular ways, efficacy, as well as toxicity as a response to numerous clinical treatment. Cancer is the leading cause of mortality and morbidity worldwide. The greatest obstacle of the successful treatment is the development of multidrug resistance (MDR) against chemotherapy. During the past two decades, the act of carrier-mediated transport in defining the pharamcokinetics of drugs has become progressively evident with the discovery of genetic polymorphisms that influence expression, localization, and/or function of a given drug transporter. The aim of the course is to present the drug transporters and their genetic and pharmacogenetic background, to explain their role in drug metabolism, especially focusing on different drug transporter families and on interactions of protein - drug - transporters.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Félév végén vizsga, vizsgaidőszakban pótvizsga lehetőségek

Making up for missed classes
Nincs, mert csak előadásokból áll a kurzus.

Reading material
- Obligatory literature
  - Literature developed by the Department
    PPT-bemutatók az előadások során.
- Notes
- Recommended literature

Lectures
1. Introduction to world of drug transporters
   Dr. Járomi Luca
2. General characteristics of drug transporters
   Dr. Járomi Luca
3. Terms definition of drug transporters
   Dr. Járomi Luca
4. Genetic role of drug transporters
   Dr. Járomi Luca
5. Pharmacogenetic characteristics of drug transporters
   Dr. Járomi Luca
6. Basics in pharmacokinetics: definition of absorption, distribution, metabolism, and excretion (ADME)
   Dr. Járomi Luca
7. Explanation of absorption, distribution, metabolism, and excretion (ADME)
   Dr. Járomi Luca
8. Membrane transporters in ADME I.
   Dr. Járomi Luca
9. Membrane transporters in ADME II.
   Dr. Járomi Luca
10  ADME pharmacogenomics in drug development I.
    Dr. Járomi Luca
11  ADME pharmacogenomics in drug development II.
    Dr. Járomi Luca
12  The role of transporters in drug development: regulatory science perspectives from the FDA
    Dr. Járomi Luca
13  Industrial evaluation of drug transporters in ADME
    Dr. Járomi Luca
14  The pharmacogenomics of membrane transporters I.
    Dr. Járomi Luca
15  The pharmacogenomics of membrane transporters II.
    Dr. Járomi Luca
16  Nucleoside transporters family
    Dr. Járomi Luca
17  General characteristics of ABC-transporter family
    Dr. Járomi Luca
18  Most relevant ones: ABC-transporters
    Dr. Járomi Luca
19  P-glycoprotein (MDR1/ABCB1)
    Dr. Járomi Luca
20  ABCG2
    Dr. Járomi Luca
21  Cancer: exsorptive transporters (ABC) expressed on transformed cells
    Dr. Járomi Luca
22  Proton-coupled nutrient transporters affect ADME properties
    Dr. Járomi Luca
23  In vitro characterization of interactions with drug transporting proteins
    Dr. Járomi Luca
24  In vivo characterization of interactions on transporters
    Dr. Járomi Luca
25  Indication specific transporter studies
    Dr. Járomi Luca
26  Future perspectives
    Dr. Járomi Luca
27  Conclusions and outlook, summary
    Dr. Járomi Luca
28  Exam
    Dr. Járomi Luca

Practices

Seminars

Exam topics/questions

Introduction to world of drug transporters
General characteristics of drug transporters
Terms definition of drug transporters
Genetic role of drug transporters
Pharmacogenetic characteristics of drug transporters
Basics in pharmacokinetics: definition of absorption, distribution, metabolism, and excretion (ADME)
Explanation of absorption, distribution, metabolism, and excretion (ADME)
Membrane transporters in ADME I.
Membrane transporters in ADME II.
ADME pharmacogenomics in drug development I.
ADME pharmacogenomics in drug development II.
The role of transporters in drug development: regulatory science perspectives from the FDA
Industrial evaluation of drug transporters in ADME
The pharmacogenomics of membrane transporters I.
The pharmacogenomics of membrane transporters II.
Nucleoside transporters family
General characteristics of ABC-transporter family
Most relevant ones: ABC-transporters
P-glycoprotein (MDR1/ABCB1)
ABCG2
Cancer: exsorptive transporters (ABC) expressed on transformed cells
Proton-coupled nutrient transporters affect ADME properties
In vitro characterization of interactions with drug transporting proteins
In vivo characterization of interactions on transporters
Indication specific transporter studies
Future perspectives

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-ERA-T  SURGICAL TECHNIQUES IN CARDIAC SURGERY, TECHNIQUE OF PERFORMING VASCULAR ANASTOMOSIS

Course director:  DR. BALÁZS ZOLTÁN GASZ, associate professor
Department of Surgical Research and Techniques  balazs.gasz@gmail.com

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6
Number of hours/semester:  0 lectures + 0 practices + 0 seminars = total of 0 hours
Course headcount limitations (min.-max.):  5 – 12
Prerequisites:  OAP-MUA-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The main aim of the course is to present the tools and approaches of basic cardiac surgical interventions, moreover the state of art of cardiac, vascular and thoracic surgical interventions. The practice-based course is for skill training of great vessel surgeries, valvular replacements and repair techniques. A novel training method is used for improving skills in performing vascular anastomosis. The practice offer a gradual improvement and advancement in surgical skills for students interested in surgical specialties.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Making up for missed classes
Attendance is obligatory on every practice.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
Practices
Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Gasz Balázs Zoltán (BI3N05)
Future of Paediatrics

Course director: Dr. Tamás DECSI, professor
Department of Paediatrics • decsi.tamas@pte.hu

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 6

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 50
Prerequisites: none

Topic
Paediatrics is one of the most traditional independent specialities in medicine; the first textbook devoted to the diseases of childhood was published more than 250 years ago (1764). Nevertheless, paediatrics is also one of the most rapidly changing filed in medical practice. Not only the rapid developments in sciences and technologies modify the practice of treating sick children, but also structural changes in modern societies dramatically influence both the need for paediatric care and the requirements of good clinical practice within paediatrics. The course attempts to discuss actual and therefore continuously changing topics of paediatrics in the near and foreseeable future with those students of medicine who show special interest for clinical subjects.

For instance, protein energy malnutrition endangers not only well-being but also pure existence of millions of children around the socially handicapped regions of the world. However, protein energy malnutrition may manifest themselves also in children living in economically highly privileged societies as well. Besides the ever-present problem of protein energy malnutrition, the relatively new phenomenon of childhood obesity became one of the biggest challenges of contemporary and future paediatrics. The health of the obese child might be in acute danger because of severe diseases like non-alcoholic fatty liver, however, the most frightening potential consequence of being obese as child is the possibility of minor metabolic disturbances to persist, cause smouldering severe damages and manifest in devastating diseases several decades later in life.

In addition, the roles of such classic fields within paediatrics like neonatology or care for children with congenital anomalies are also rapidly changing today. Survival of preterm infants with a birthweight of less than 1000 g was an unheard of phenomenon just a few decades ago, whereas their survival rate is well over 90% in societies with at least standard level of paediatric care. However, the quality of survival of very low birthweight preterm infants is one of the most interesting questions of current and future paediatric research. Or to just name another highly progressive field of paediatric care, treatment of children with inborn errors of metabolism and other rare diseases opens complex questions both within the field of medical ethics and in the field of financial decision making of alternative medical treatments.

This teaching course uses the above-mentioned examples and other clinical situations to outline major profiles of future development of paediatrics. The nature of the course allows discussing also such brand new results of paediatric research that could not yet be incorporated into the basic teaching material of paediatrics.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Evaluation at the end of the course.

Making up for missed classes
If the student missed the course because of acceptable reason, there is possibility to meet the requirements by completing extra teaching activity at home.

Reading material
- Obligatory literature
- Literature developed by the Department
  The slides of the course will be available for the students. Pertinent publications discussed during the course will be made available either electrically or as hard material.
- Notes
- Recommended literature

Lectures
1 How did paediatrics develop into the most complex independent field of medicine?
   Dr. Decsi Tamás
2 Children in societies of the future around the world
   Dr. Decsi Tamás
3 Continuously improving survival of preterm infants and other sick neonates
   Dr. Decsi Tamás
4 Future tasks in improving quality of life in preterm infants and in other sick neonates
   Dr. Decsi Tamás
5. Protein energy malnutrition in children living in developing countries  
   Dr. Decsi Tamás  
6. Malnutrition in children living in affluent countries  
   Dr. Decsi Tamás  
7. Acute untoward health effects of obesity in children  
   Dr. Decsi Tamás  
8. Health status of obese children 50 years later  
   Dr. Decsi Tamás  
9. Effect of screening programs on prevalence and course paediatric diseases  
   Dr. Decsi Tamás  
10. Role of biomarkers in evaluating health status in children  
    Dr. Decsi Tamás  
11. Challenges of social paediatrics in the 21st century  
    Dr. Decsi Tamás  
12. Present hurdles and future possibilities of paediatric clinical research  
    Dr. Decsi Tamás  

Practices

Seminars

Exam topics/questions

1. Children in the society: present and potential future  
2. Survival of preterm infants and the quality of life after  
3. Prevention of protein energy malnutrition in children  
4. Acute consequences of childhood obesity  
5. Long-term consequences of childhood obesity  
6. Prevention of allergic diseases in children  
7. Effect of screening investigations on the prevalence and course of paediatric diseases  
8. Role of biomarkers in evaluating health status in children  
9. Challenges of social paediatrics in the 21st century  
10. Problems of clinical studies carried out in children

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Decsi Tamás (RX95KM)
The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The course is offered for all the interested participants who would like to learn Hungarian as a foreign language.

The Hungarian for Foreigners 6. 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 general topics without having to restrict what he/she wants to say.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
The course ends with an oral and written exam. You can take part in the exam, with a min. 85% attendance rate.

Making up for missed classes
Medical certificate is accepted.

Reading material
- **Obligatory literature**
  - Szita Szilvia - Pelcz Katalin: MagyarOK 3.
  - www.magyar-ok.hu

- **Literature developed by the Department**
  - Szita Szilvia - Pelcz Katalin: MagyarOK 3.
  - www.magyar-ok.hu

- **Notes**
- **Recommended literature**

Lectures
Practices
Seminars
1 Lakás, szolgáltatások
2 Lakás, szolgáltatások
3 Lakás, szolgáltatások
4 Lakás, szolgáltatások
5 Lakás, szolgáltatások
6 Lakás, szolgáltatások
7 Lakás, szolgáltatások
8 Lakás, lakóhely: az otthon és a szűkebb környezet
9 Lakás, lakóhely: az otthon és a szűkebb környezet
10 Lakás, lakóhely: az otthon és a szűkebb környezet
11 Lakás, lakóhely: az otthon és a szűkebb környezet
12 Lakás, lakóhely: az otthon és a szűkebb környezet
13 Lakás, lakóhely: az otthon és a szűkebb környezet
14 Lakás, lakóhely: az otthon és a szűkebb környezet
15 Tanulás, munka
16 Tanulás, munka
17 Tanulás, munka
18 Tanulás, munka
19 Tanulás, munka
Exam topics/questions

Successful oral and written exam at the end of the course.
MagyarOK B1+ 7-12. fejezet:
http://magyar-ok.hu/docs/MOK_B1_tartalom.pdf

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pelcz Katalin (HBH9IN)
Course director: Dr. ZSOLT KOZMA, assistant professor
Department of Forensic Medicine • zsolt.kozma@aok.pte.hu

2 credit • midterm grade • Optional subject • spring semester • recommended semester: 6
Number of hours/semester: 0 lectures + 0 practices + 22 seminars = total of 22 hours
Course headcount limitations (min.-max.): 5 – 100
Prerequisites: OAA-MB2-T completed + OAF-iE1-T completed

Topic
The course of Forensic Medical genetics Compresses the up-to-date knowledge of forensic biology and DNA profiling. Topics include also the legal and ethical impacts of recent genetic advances. We will focus on current techniques of DNA fingerprinting, also the criminal, civil and even the non-human or military applications as well. We invite those students who attend both at the autumn and spring courses to the third (last) part of the education focusing on practical laboratory works in the hemoagenetic laboratory of the Dept. of Forensic Medicine. During this course, with the above mentioned three semesters together, the student could practically collect 4 credits at the end. Exept the third, the student could choose the first two moduls separately for 1 or for 2 credits.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Written exam at the end of the course

Making up for missed classes
No chance

Reading material
- Obligatory literature	none
- Literature developed by the Department
  Uploaded to Neptun
- Notes
  none
- Recommended literature
  none

Lectures
Practices
Seminars
1 Practical forensic genetics - legal background
2 Practical forensic genetics - legal background
3 Practical forensic genetics - technological advancements
4 Practical forensic genetics - technological advancements
5 Practical forensic genetics - kinship analysis
6 Practical forensic genetics - kinship analysis
7 Practical forensic genetics - DNA based phenotyping
8 Practical forensic genetics - DNA based phenotyping
9 Practical forensic genetics - comparative forensic medicine
10 Practical forensic genetics - comparative forensic medicine
11 Practical forensic genetics - non-human genetic analysis
12 Practical forensic genetics - non-human genetic analysis
13 Practical forensic genetics - new methods in identification of drowning
14 Practical forensic genetics - new methods in identification of drowning
15 Practical forensic genetics - challenges of the expert, complicated caseworks
16 Practical forensic genetics - challenges of expert, analysis of mixed samples
17 Practical forensic genetics - DNA databases
18 Practical forensic genetics - DNA databases
19 Practical forensic genetics - military applications
20 Practical forensic genetics - military applications
21 Practical forensic genetics - the expert opinion
22 Practical forensic genetics - the expert opinion

Exam topics/questions

Uploaded to Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pádár Zsolt (FWE8VH), Dr. Poór Viktor Soma (SA17J1), Dr. Sipos Katalin (RUHPLE)
OAF-IVF-T INFECTIONS AND IMMUNITY

Course director: DR. JULIA BARTHÓ-SZEKERES, professor

Department of Medical Biology and Central Electron Microscope Laboratory • szekeres.julia@pte.hu

2 credit • midterm grade • Optional subject • spring semester • recommended semester: 6
Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 2 – 25

Prerequisites: OAA-IMM-T completed + OAP-MO1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The importance of anti-infectious immunity is not restricted to elimination of pathogens, but is also responsible for long lasting protection, as well as -in some cases- immunopathological disorders

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Continuous

Making up for missed classes
Consultation

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture slides
- Notes
- Recommended literature

Lectures
1. Non-specific defence. Surface barriers, normal colonizing flora, phagocytosis, complement system.
   Dr. Barthóné Dr. Szekeres Júlia

   Dr. Barthóné Dr. Szekeres Júlia

   Dr. Barthóné Dr. Szekeres Júlia

   Dr. Barthóné Dr. Szekeres Júlia

5. Defence against extracellular microorganisms. The role of immunoglobulin classes. Mucosal immunity.
   Dr. Barthóné Dr. Szekeres Júlia

   Dr. Barthóné Dr. Szekeres Júlia

   Dr. Barthóné Dr. Szekeres Júlia

   Dr. Barthóné Dr. Szekeres Júlia

   Dr. Barthóné Dr. Szekeres Júlia

    Dr. Barthóné Dr. Szekeres Júlia

11. Evasion and use of the innate and adaptive immune responses by microorganisms.
    Dr. Barthóné Dr. Szekeres Júlia

12. Evasion and use of the innate and adaptive immune responses by microorganisms.
    Dr. Barthóné Dr. Szekeres Júlia
13 Healing of infectious diseases. The pathogenic role of anti-infectious immunity; local inflammation, systemic inflammation, sepsis, endotoxin shock, toxic shock syndrome.
Dr. Barthóné Dr. Szekeres Júlia

14 Healing of infectious diseases. The pathogenic role of anti-infectious immunity; local inflammation, systemic inflammation, sepsis, endotoxin shock, toxic shock syndrome.
Dr. Barthóné Dr. Szekeres Júlia

15 The pathogenic role of anti-infectious immunity; hypersensitivity reactions in bacterial-parasitic and fungal infections.
Dr. Barthóné Dr. Szekeres Júlia

16 The pathogenic role of anti-infectious immunity; hypersensitivity reactions in bacterial-parasitic and fungal infections.
Dr. Barthóné Dr. Szekeres Júlia

17 Induction of autoimmunity; molecular mimicry, epitope spreading, polyclonal T or B cell activation.
Dr. Barthóné Dr. Szekeres Júlia

18 Induction of autoimmunity; molecular mimicry, epitope spreading, polyclonal T or B cell activation.
Dr. Barthóné Dr. Szekeres Júlia

19 Immunopathological alterations following viral infections. The involvement of CD8+ T cells.
Dr. Barthóné Dr. Szekeres Júlia

20 Immunopathological alterations following viral infections. The involvement of CD8+ T cells.
Dr. Barthóné Dr. Szekeres Júlia

21 Immunopathological alterations following viral infections. The involvement of CD4+ T cells.
Dr. Barthóné Dr. Szekeres Júlia

22 Immunopathological alterations following viral infections. The involvement of antibodies.
Dr. Barthóné Dr. Szekeres Júlia

23 Vaccination; Type of vaccines, requirements for vaccines.
Dr. Barthóné Dr. Szekeres Júlia

24 Vaccination; rational vaccine development, mandatory vaccines.
Dr. Barthóné Dr. Szekeres Júlia

Practices
Seminars
Exam topics/questions
The same as lecture topics
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Course director: DR. TIMEA VARJAS, assistant professor  
Department of Public Health Medicine • vtini_68@yahoo.com

OAF-KPR-T  CHEMOPREVENTION

Course director: DR. TIMEA VARJAS, assistant professor  
Department of Public Health Medicine • vtini_68@yahoo.com

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 20  Prerequisites: OAA-MB2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

Chemoprevention is the administration of natural or (semi)synthetic agents to prevent, inhibit, or delay the progression of chronic diseases. The focus is on cancer chemoprevention. The way from a potent agent to a chemopreventive strategy will also be discussed. Involving (chemo)preventive interventions in every-day practice could spare valuable life years.

Conditions for acceptance of the semester

Absences should not exceed 15% of lectures and practices (2x45 min). Otherwise signature of grade book is denied.
Examination: test
Mid-term exams
Examination: test
Making up for missed classes
Based on individual consideration

Reading material

- Obligatory literature
- Literature developed by the Department
  PPT-presentations (Neptun)
- Notes
- Recommended literature

Lectures

1. Introduction - Chemoprevention as a preventive strategy  
   Dr. Szabó István
2. Introduction - Chemoprevention as a preventive strategy  
   Dr. Szabó István
3. Finding evidence  
   Dr. Szabó István
4. Finding evidence  
   Dr. Szabó István
5. Intervening chronic diseases  
   Dr. Szabó István
6. Intervening chronic diseases  
   Dr. Szabó István
7. Chemopreventive strategies - antioxidants  
   Dr. Szabó István
8. Actualities of antioxidants  
   Dr. Szabó István
9. Natural chemopreventive agents  
   Dr. Szabó István
10. Natural chemopreventive agents  
    Dr. Szabó István
11. Chemopreventive dietary factors  
    Dr. Szabó István
12. Chemopreventive dietary factors  
    Dr. Szabó István
Practices
Seminars
Exam topics/questions
Neptun

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
<table>
<thead>
<tr>
<th>Course</th>
<th>A SPECTACLE OF VISION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course director:</strong></td>
<td><strong>DR. PÉTER BUZÁS</strong>, associate professor</td>
</tr>
<tr>
<td><strong>Institute of Physiology</strong></td>
<td><strong><a href="mailto:peter.buzas@aok.pte.hu">peter.buzas@aok.pte.hu</a></strong></td>
</tr>
</tbody>
</table>

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

**Number of hours/semester:**

- 12 lectures + 0 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**

- 5 – 40

**Prerequisites:**

- OAA-EL2-T completed

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**Topic**

For most people, vision is the primary source of perception. Quite often, we wonder how it actually works and the answers don’t always seem easy. Why is the sky blue? How many megapixels does the human eye have? Can we really see a single photon? What is blindsight? How does the bull see the red cape? How does 3D movie work? This course is aimed at answering many questions of this kind but also at raising some that puzzle researchers today. We will present live demonstrations, illusions and discuss experiments that led to important discoveries in order explain the neural mechanisms of vision in an interesting way. We will also talk about diseases causing loss of visual functions as well as animal vision. The course begins with an introduction to psychophysical and neurophysiological research methods and a little light physics. Then we follow the path of visual information processing from the photoreceptors to higher visual cortical areas. In the second part, we talk about some of the visual sub-systems including color vision, stereopsis, motion perception and finally visual memory and attention. To conclude the course, we discuss visual illusions that won the latest Best Illusion of the Year Contest.

**Conditions for acceptance of the semester**

- Maximum of 25 % absence allowed

**Mid-term exams**

- Written test at the end of the semester.

**Making up for missed classes**

- Absences up to 25% of the sessions can be made up by passing both mid-term test.

**Reading material**

- **Obligatory literature**
  - Literature developed by the Department
    - Lecture slides will be available on MeetStreet.

- **Notes**

- **Recommended literature**
  - Jeremy Wolfe et al.: Sensation and Perception, Sinauer
  - Eric Kandel et al. (ed.): Principles of Neural Science, McGraw Hill

**Lectures**

1. Sensation and perception. Psychophysical methods. The methods of neuroscience in vision research  
   Dr. Buzás Péter

   Dr. Buzás Péter

3. One picture, ten interpretations: retinal processing. The subcortical channels  
   Dr. Buzásné Dr. Telkes Ildikó

   Dr. Buzásné Dr. Telkes Ildikó

5. "What?" and "where?" Parallel processing in the visual cortex. Visual perception and cognition. Gestalts and grandmother cells  
   Dr. Buzás Péter

   Dr. Buzás Péter

7. Animal vision. The case of the bull with the red cape  
   Dr. Kóbor Péter

8. Depth perception with one eye. Depth perception with two eyes. How does 3D movie work?  
   Dr. Kóbor Péter

9. What does the eye doctor look at? Clinical vision tests  
   Dr. Ráczné Dr. Mikó-Baráth Eszter
<table>
<thead>
<tr>
<th>No.</th>
<th>Subject</th>
<th>Instructor(s)</th>
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<tbody>
<tr>
<td>10</td>
<td>Visual development and its disorders</td>
<td>Dr. Ráczné Dr. Mikó-Baráth Eszter</td>
</tr>
<tr>
<td>11</td>
<td>Sensing and perceiving visual motion. Optic flow. Navigation. Biological motion</td>
<td>Dr. Cziger-Nemes Vanda Ágnes</td>
</tr>
<tr>
<td>12</td>
<td>Visual learning and memory. Visual attention and its disorders. Reading, dyslexia</td>
<td>Dr. Cziger-Nemes Vanda Ágnes</td>
</tr>
</tbody>
</table>

### Practices

### Seminars

### Exam topics/questions

Test questions will be based on the lectures and topics covered in the lecture slides.

### Information

The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

### Participants
OAF-MGA-T  MIGRATION HEALTH ASPECTS IN THE PRIMARY HEALTH CARE

Course director: Dr. ISTVÁN SZILÁRD, honorary professor
Department of Operational Medicine • istvan.szilard@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 1 – 20  Prerequisites: none

Topic
The course will provide the baseline information and knowledge about the health assistance of migrants and refugees with various ethnic, cultural and religious background, arriving into the European Union from third countries. For the completion of the course students will sit for a test exam and will introduce thematic essays.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
According to the University Exam Code and Code of Ethics of the Department of Operational Department

Making up for missed classes
According to the University Exam Code and Code of Ethics of the Department of Operational Department

Reading material
- Obligatory literature
  - Katz Z. és mts: Migránsok körében előforduló egyes fertőzőbetegségek a befogadó állomásokon végzett szűrővizsgálatok tükrében - Népegészségügy 2015
  - Klenner Zoltán: A Magyarországon élő külföldiek egészségügyi ellátása, valamint az ide érkezők egészségügyi szűrése - Népegészségügy 2015
- Literature developed by the Department
- Notes
- Recommended literature
  - Szilárd I., Barath A.: Public Health Aspects of Trafficking in Human Beings: Health Promotion and Prevention Tasks and Possibilities In: Health Promotion and Disease Prevention; a handbook for teachers, researchers, health professionals and decision makers, p. 670 - 693 Hans Jacobs Publishing Company 2007 Germany and FYRM
  - Szilárd I és mts: Migrációhoz kapcsolódó új kihívások az egészségügyi munkaerőpiacon, Népegészségügy, 2012;90(2):115-121
  - Bhopal RS. Migration, Ethnicity, Race and Health in Multicultural Societies. 2nd ed. Oxford University Press; 2014.

Lectures
1 Definition of migration as global phenomenon Migration health as a new interdisciplinary field of health- and medical sciences. Migration health programs of the WHO, European Union and European Center for Disease Prevention and Control (ECDC) Dr. Szilárd István
2 Definition of migration as global phenomenon Migration health as a new interdisciplinary field of health- and medical sciences. Migration health programs of the WHO, European Union and European Center for Disease Prevention and Control (ECDC) Dr. Szilárd István
3 Migration related health challenges: Morbidity profile of countries of origin versus countries of destination. Re-appearance of forgotten diseases, differences in primary health care (PHC) provision Dr. Szilárd István
4 Migration related health challenges: Morbidity profile of countries of origin versus countries of destination. Re-appearance of forgotten diseases, differences in primary health care (PHC) provision Dr. Szilárd István
5 Baseline concept, design and management of Migrant Sensitive Health Care Systems. Health education in multicultural environment. Dr. Marek Erika Mária
Baseline concept, design and management of Migrant Sensitive Health Care Systems. Health education in multicultural environment.
Dr. Marek Erika Mária

Migrants and refugees health assistance related legislation in Hungary and in the European Union
Dr. Katz Zoltán

Migrants and refugees health assistance related legislation in Hungary and in the European Union
Dr. Katz Zoltán

Migration related health challenges: Differences in the health care systems and primary health care models of countries of origin versus countries of destination
Dr. Gool esorkhi Kia

Migration related health challenges: Differences in the health care systems and primary health care models of countries of origin versus countries of destination
Dr. Gool esorkhi Kia

Migrants and refugees health assistance related legislation in Hungary and in the European Union
Dr. Katz Zoltán

Migrants and refugees health assistance related legislation in Hungary and in the European Union
Dr. Katz Zoltán

Migration related health challenges: Differences in the health care systems and primary health care models of countries of origin versus countries of destination
Dr. Gool esorkhi Kia

Migration related health challenges: Differences in the health care systems and primary health care models of countries of origin versus countries of destination
Dr. Gool esorkhi Kia

Mental health aspects in the care of migrants within the framework of general practice
Dr. Baráth Árpád

Mental health aspects in the care of migrants within the framework of general practice
Dr. Baráth Árpád

How to run primary health care praxis in multicultural environment
Dr. Kürthy Dániel

How to run primary health care praxis in multicultural environment
Dr. Kürthy Dániel

Family Medicine type health care provision for migrants and refugees
Dr. Balogh Sándor

Family Medicine type health care provision for migrants and refugees
Dr. Balogh Sándor

Palliative health care provision in multicultural environment
Dr. Csikós Ágnes Erika

Palliative health care provision in multicultural environment
Dr. Csikós Ágnes Erika

Patients physicians communication in multicultural environment
Dr. Heim Szilvia

Patients physicians communication in multicultural environment
Dr. Heim Szilvia

The most shadowed site of irregular migration: recognizing victims of trafficking in human beings and arranging their rehabilitation; Cooperation with law-enforcement bodies and humanitarian organizations
Dr. Szilárd István

The most shadowed site of irregular migration: recognizing victims of trafficking in human beings and arranging their rehabilitation; Cooperation with law-enforcement bodies and humanitarian organizations
Dr. Szilárd István

Semester closing, exam
Dr. Marek Erika Mária

Semester closing, exam
Dr. Marek Erika Mária

Practices
Seminars
Exam topics/questions

For the completion of the course students will sit for a test exam and will introduce thematic essays.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-N28-T  **CLINICAL HUNGARIAN 2**

**Course director:**  
DR. TIMEA NÉMETH, assistant professor  
Department of Languages for Specific Purposes  
timea.nemeth@aok.pte.hu

- 2 credit  
- midsemester grade  
- Optional subject  
- both semesters  
- recommended semester: 6

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

**Course headcount limitations (min.-max.):**  
3 – 15  
**Prerequisites:**  
OAE-H4A-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

The aim of the course is to help international students during their clinical studies to develop appropriate Medical Hungarian language competencies and also widen the scope of existing competencies in the field of doctor-patient communication.

**Conditions for acceptance of the semester**

Participation in classes 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.

**Mid-term exams**

2 oral tests

**Making up for missed classes**

To be discussed with the course tutor in each individual case.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**


**Lectures**

**Practices**

**Seminars**

1. High blood pressure, bleeding in the stomach, cholecystectomy
2. High blood pressure, bleeding in the stomach, cholecystectomy
3. Chest pain, complaints on defecation
4. Chest pain, complaints on defecation
5. Problems on urination, blood transfusion, Cardiovascular problems
6. Problems on urination, blood transfusion, Cardiovascular problems
7. Hyperthyroidism, pancreatitis
8. Hyperthyroidism, pancreatitis
9. History taking, Giving instructions
10. History taking, Giving instructions
11. Improving listening comprehension skills
12. Improving listening comprehension skills
13. Improving listening comprehension skills
14. Improving listening comprehension skills
15. Clinical visits to practice history taking in Hungarian
16. Clinical visits to practice history taking in Hungarian
17. Clinical visits to practice history taking in Hungarian
18. Clinical visits to practice history taking in Hungarian
19. Clinical visits to practice history taking in Hungarian
20. Clinical visits to practice history taking in Hungarian
21. Clinical visits to practice history taking in Hungarian
22. Clinical visits to practice history taking in Hungarian
23. Bedside presentation and evaluation
24. Bedside presentation and evaluation
Exam topics/questions

Bedside presentation at various clinical wards.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dávidovics Anna (U5A10Z), Dr. Hegedűs Anita (TQQEMK), Dr. Hild Gabriella (HILSWV), Dr. Németh Timea (X8VRGN), Dr. Rébé-Nagy Gábor (DGOZG1), Dr. Warta Vilmos (SIYRAV), Egyed Csilla Klára (Z1BN90), Ekicsné Dr. Lepenye Katalin (JMXXSC), Krommer Zoltán (MQ5HNA), Kurdiné Molnár Eszter (VUCECC), Nagy Gabriella (CYMRX3), Nagy Renáta ( ), Ronczykné Berta Anikó (CJZOFU), Szalai-Szolcsányi Judit (RBGAPH), Szánióné Dr. Csongor Alexandra (UDKY0J)
PLANT PRODUCTS IN THE PHARMACEUTICAL PRACTICE

Course director: Dr. Györgyi Horváth, associate professor
Department of Pharmacognosy • gyorgyi.horvath@aok.pte.hu

<table>
<thead>
<tr>
<th>OAF-NSG-T</th>
<th>2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6</th>
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<tr>
<td>Number of hours/semester:</td>
<td>20 lectures + 8 practices + 0 seminars = total of 28 hours</td>
</tr>
<tr>
<td>Course headcount limitations (min.-max.):</td>
<td>5 – 15</td>
</tr>
<tr>
<td>Prerequisites:</td>
<td>OAA-ORK-T completed + OAA-BEB-T completed + OAA-BKA-T completed</td>
</tr>
</tbody>
</table>

**Topic**

Students will be familiar with the results of the latest studies on medicinal plants used in the prevention and treatment of diseases, and the availability of authorized preparations and their use in modern medicine and health care, with their pharmacobotanical and pharmacognostic knowledge. They should be able to make herbal preparations based on their knowledge.

**Task:** To present the active ingredient, medicinal use of medicinal herbs and preparations used in healing, to present the latest results of phytotherapy research. Preparing tea blends and externally usable preparations in the practice sessions.

**Requirement:** Students should be able to apply their acquired knowledge to the highest possible level in their profession.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

During the semester, writing of one test at an acceptable level (min. 60%) is mandatory. In case of failed result, one possibility to repeat is possible. Taking one student lecture is mandatory.

**Making up for missed classes**

No replacement is possible.

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

2. ESCOP Monographs, 2nd edition, Thieme, United Kingdom 2003

**Lectures**

1. Introduction. Plants on the market and their role in today’s medicine and pharmacy. Dr. Horváth Györgyi
2. Availability of medicinal plant products on the Internet: dangers, challenges. Dr. Horváth Györgyi
3. Herbs and products acting on the central nervous system. Dr. Horváth Györgyi
4. Herbs and products acting on the central nervous system. Dr. Horváth Györgyi
5. Herbs and products acting on heart and vascular system. Dr. Horváth Györgyi
6. Herbs and products acting on heart and vascular system. Dr. Horváth Györgyi
7. Herbs and products acting on respiratory tract. Dr. Horváth Györgyi
8. Herbs and products acting on respiratory system. Dr. Horváth Györgyi
9. Herbs and products acting on gastrointestinal tract. Dr. Horváth Györgyi
10. Herbs and products acting on gastrointestinal tract. Dr. Horváth Györgyi
11. Herbs and products acting on urinary tract. Dr. Horváth Györgyi
12 Herbs and products acting on urinary tract.  
Dr. Horváth Györgyi

13 Herbal remedies for gynecological complaints.  
Dr. Horváth Györgyi

14 Adaptogens.  
Dr. Horváth Györgyi

15 Herbal remedies for dermatological diseases.  
Dr. Horváth Györgyi

16 Herbal remedies for dermatological diseases.  
Dr. Horváth Györgyi

17 Herbs and remedies for treating pain.  
Dr. Horváth Györgyi

18 Herbs and products for treating pain.  
Dr. Horváth Györgyi

19 Enhancing the body’s resistance (plant immunomodulators).  
Dr. Horváth Györgyi

20 Students’s lecture. Written test.  
Dr. Horváth Györgyi

Practices
1 Location of herbal remedies in today’s pharmaceuticals I: Preparation of herbal product.  
2 Location of herbal remedies in today’s pharmaceuticals I: Preparation of herbal product.  
3 Location of herbal remedies in today’s pharmaceuticals II: Evaluation of herbal product.  
4 Location of herbal remedies in today’s pharmaceuticals II: Evaluation of herbal product.  
5 Preparation of herbal tea.  
6 Macroscopic and organoleptic examination of herbal tea preparation.  
7 Preparation of product containing essential oils.  
8 Checking the quality of herbal substances by chromatography: TLC.

Seminars

Exam topics/questions
The topics of the written test is the same with the lectures.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Horváth Györgyi (GDLTCH)
### OAF-OVS-T  VACCINES AND VACCINE-PREVENTABLE DISEASES

**Course director:** **DR. LÁSZLÓ SZEREDAY**, associate professor  
Department of Medical Microbiology and Immunology  
szereday.laszlo@pte.hu

<table>
<thead>
<tr>
<th>Credit</th>
<th>Midsemester grade</th>
<th>Optional subject</th>
<th>Spring semester</th>
<th>Recommended semester: 6</th>
</tr>
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**Number of hours/semester:** 24 lectures + 0 practices + 0 seminars = total of 24 hours  
**Course headcount limitations (min.-max.):** 3 – 50  
**Prerequisites:** OAA-IMM-T completed + OAP-MO1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

### Topic

This optional course is aimed at discussing the topics in the field of vaccination. Emphasis will be placed on the benefits of vaccination.

### Conditions for acceptance of the semester

Maximum of 25 % absence allowed

### Mid-term exams

Grading is based on attendance/missed classes and activity during lectures.

### Making up for missed classes

Personal consultation

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

Patrick R. Murray: Medical Microbiology, 8th edition, 2015

### Lectures

1. The History and Science of Vaccination  
   Dr. Szereday László
2. The History and Science of Vaccination  
   Dr. Szereday László
3. The Human Immune System and Infectious Diseases  
   Dr. Szereday László
4. The Human Immune System and Infectious Diseases  
   Dr. Szereday László
5. Vaccine Myths and Facts  
   Dr. Szereday László
6. Vaccine Myths and Facts  
   Dr. Szereday László
7. Anti-vaccination Movements  
   Dr. Szereday László
8. Anti-vaccination Movements  
   Dr. Szereday László
9. The Wakefield study linking MMR vaccine and autism  
   Dr. Szereday László
10. The Wakefield study linking MMR vaccine and autism  
    Dr. Szereday László
11. All bout the Ebola virus disease vaccine  
    Dr. Szereday László
12. All bout the Ebola virus disease vaccine  
    Dr. Szereday László
13. Malaria and Malaria Vaccine Candidates  
    Dr. Szereday László
14. Malaria and Malaria Vaccine Candidates  
    Dr. Szereday László

454
The eradication of Smallpox
Dr. Szereday László

How Well Does the Flu Vaccine Work? Should we get one?
Dr. Szereday László

West Nile Fever Needs A Vaccine
Dr. Szereday László

Cancer Vaccines and Immunotherapy
Dr. Szereday László

Passive Immunization
Dr. Szereday László

Practices
Seminars
Exam topics/questions
See lecture topics

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
**OAF-SIF-T**  
**INFOMATICS OF SCIENTIFIC LITERATURE**

**Course director:**  
**DR. ANIKÓ GYÖNGYVÉR KILÁR**, research associate professor  
Institute of Bioanalysis • aniko.kilar@aok.pte.hu

<table>
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<th>1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 6</th>
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<tbody>
<tr>
<td><strong>Number of hours/semester:</strong></td>
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<tr>
<td><strong>Course headcount limitations (min.-max.):</strong></td>
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<tr>
<td><strong>Prerequisites:</strong></td>
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</table>

**Topic**

The application of scientific literature during education and research is a basis of successful scientific work. The search methods and the handling of database sources in the internet are discussed. The creation and the use of local databases, and its coupling to internet based (cloud) databases. Scientometric evaluation of publications. Preparation of scientific publications, construction of reference lists. After completing the course, students will have the appropriate knowledge to plan scientific work and acquire knowledge in writing a thesis.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

Practice exercises will be reviewed and resolved together during the lessons.

**Making up for missed classes**

There will be no possibility to retake the class in case of absence.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**
  - Gábor Tigyi: Scientific writing for publications
  - Anthony Newman: How to write great papers and get published

**Lectures**

1. Introduction, definitions  
   Dr. Kilár Anikó Gyöngyvér
2. Structure of databases  
   Dr. Kilár Anikó Gyöngyvér
3. History of scientific literature  
   Dr. Kilár Anikó Gyöngyvér
4. Basics of writing a scientific paper  
   Dr. Kilár Anikó Gyöngyvér
5. Basics of writing a scientific paper  
   Dr. Kilár Anikó Gyöngyvér
6. Web of Science database  
   Dr. Kilár Anikó Gyöngyvér
7. Metrics in science. Impact factor, Hirsch index, citation index  
   Dr. Kilár Anikó Gyöngyvér
8. Medline/PubMed database  
   Dr. Kilár Anikó Gyöngyvér
9. Formats of a reference list. EndNote Web database  
   Dr. Kilár Anikó Gyöngyvér
10. EndNote Web database, Export and import of references  
    Dr. Kilár Anikó Gyöngyvér
11. Preparation of a reference list  
    Dr. Kilár Anikó Gyöngyvér
12. Exam  
    Dr. Kilár Anikó Gyöngyvér
Practices

Seminars

Exam topics/questions

Preparation of a sample manuscript with the use of scientific literature search, and construction of reference list.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Kilár Anikó Gyöngyvér (S8C2RV)
Topic

A good and reasonable experimental plan is crucial for success in field of sciences. The aim of our course is introducing the right methods and milestones of experimental planning. How to build a good experiment? Which methods should be used? What does it mean the age-matched control and recruitment criteria? These terms and methods will be explained!

Conditions for acceptance of the semester

Maximum of 15% absence allowed

Mid-term exams

Exam: short and written experimental plan should be completed based on individual idea.

Making up for missed classes

Individual consultation.

Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

Lectures

Practices

Seminars

1. Introduction
2. Experimental planning - introduction
3. A short history of pharmacy
4. Basics of experimental planning
5. General ethical viewpoints
6. Experimental planning - randomization
7. The principle of informed consent in modern health-care
8. The ethics of patient-pharmacist relationship
9. The conflict between business and ethics in pharmacy
10. The placebo effect and its ethical concerns
11. Dietary supplements, performance- and mind-enhancing drugs

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Feldmann Ádám (GLNQKN)
Pathophysiology of Blood Cells

Course director: Dr. Marta Balaskó, associate professor
Institute for Translational Medicine • marta.balasko@aok.pte.hu

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 1 – 100
Prerequisites: OAP-KO1-T completed

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

Maximum of 15 % absence allowed

Mid-term exams

None

Making up for missed classes

An essay on the topic of the missed lecture.

Reading material

- Obligatory literature
- Literature developed by the Department
  Lecture slides are uploaded to Neptun.
- Notes
- Recommended literature

Lectures

1 The functions of blood. Erythropoiesis, leukopoiesis, thrombopoiesis. Case histories.
   Dr. Balaskó Mártta
2 Polycythemia vera and spuria: etiology, pathogenesis and complications.
   Dr. Balaskó Mártta
3 Morphology of red blood cells, corpuscular hemolytic anemias.
   Dr. Balaskó Mártta
4 Sickle cell anemia: etiology, pathogenesis, pathophysiology of therapeutic possibilities.
   Dr. Balaskó Mártta
5 Thalassemias: etiology, complications, treatment. Case histories.
   Dr. Balaskó Mártta
6 Extracorpuscular hemolytic anemias. Case histories.
   Dr. Balaskó Mártta
7 Abnormalities of the neutrophil granulocytes. Case histories.
   Dr. Balaskó Mártta
8 Abnormalities of eosinophil and basophil granulocytes.
   Dr. Balaskó Mártta
9 Abnormalities of lymphocytes. Case studies.
   Dr. Balaskó Mártta
10 Platelets: structure, functions and related pathophysiology.
   Dr. Balaskó Mártta
11 Pathophysiological significance of endothel cells. Case histories.
   Dr. Balaskó Mártta
12 Test. Case histories.
   Dr. Balaskó Mártta
Practices
Seminar
Exam topics/questions
The functions of blood. Erythropoiesis, leukopoiesis, thrombopoiesis.
Polycythemia vera and spuria: etiology, pathogenesis and complications.
Morphology of red blood cells, corpuscular hemolytic anemias.
Sickle cell anemia: etiology, pathogenesis, pathophysiology of therapeutic possibilities.
Extracorpuscular hemolytic anemias.
Abnormalities of the neutrophil granulocytes.
Abnormalities of eosinophil and basophil granulocytes.
Abnormalities of lymphocytes.
Platelets: structure, functions and related pathophysiology.
Pathophysiological significance of endothel cells.

The grade depends on the result of the final test.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-VK2-T  HOW TO PASS PATHOPHYSIOLOGY 2 SUCCESSFULLY?

Course director: DR. MÁRTA BALASKÓ, associate professor
Institute for Translational Medicine • marta.balasko@aok.pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 6

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 2 – 180
Prerequisites: OAA-EL2-T completed + OAP-KO1-T completed

Topic
The objective of this course is to present pathophysiological topics in a problem-based approach based on clinical cases. This approach will allow ambitious students to deepen their knowledge of the given topic. It also facilitates the understanding of interrelated mechanisms. Examiners of the Department will be involved. The aim of the course is to make students familiar with the complex approach to pathophysiology characterizing the oral exams.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Oral exam based on the discussed topics.
Making up for missed classes
None

Reading material
- Obligatory literature
  None
- Literature developed by the Department
  Lecture presentations will be uploaded to NEPTUN.
- Notes
  None
- Recommended literature
  Harrison’s Principles of Internal Medicine, 19th edition, Mcgraw-Hill Education Ltd. 2015

Lectures
1  Problem-based discussion pH disorders I.
   Dr. Szekeres-Solymár Margit
2  Problem-based discussion pH disorders II.
   Dr. Szekeres-Solymár Margit
3  Problem-based discussion pH disorders III.
   Dr. Balaskó Mártta
4  Problem-based discussion of disorders of the potassium balance.
   Dr. Balaskó Mártta
5  Problem-based discussion of gastrointestinal disorders I.
   Dr. Szekeres-Solymár Margit
6  Problem-based discussion of gastrointestinal disorders II.
   Dr. Szekeres-Solymár Margit
7  Problem-based discussion of gastrointestinal disorders III.
   Dr. Szekeres-Solymár Margit
8  Problem-based discussion of gastrointestinal disorders IV.
   Dr. Szekeres-Solymár Margit
9  Problem-based discussion of hepatic disorders.
   Dr. Balaskó Mártta
10 Problem-based discussion of pancreatic disorders.
    Dr. Balaskó Mártta
11 Problem-based discussion of eating disorders I.
    Dr. Szekeres-Solymár Margit
12 Problem-based discussion of eating disorders II.
    Dr. Szekeres-Solymár Margit
13 Problem-based discussion of obesity-related disorders.
   Dr. Balaskó Márta

14 Problem-based discussion of obesity therapy.
   Dr. Balaskó Márta

15 Problem-based discussion of thermoregulatory disorders I.
   Dr. Balaskó Márta

16 Problem-based discussion of thermoregulatory disorders II.
   Dr. Balaskó Márta

17 Problem-based discussion of diabetes mellitus I.
   Dr. Balaskó Márta

18 Problem-based discussion of diabetes mellitus II.
   Dr. Balaskó Márta

19 Problem-based discussion of dyslipidemia I.
   Dr. Balaskó Márta

20 Problem-based discussion of dyslipidemia II.
   Dr. Balaskó Márta

21 Problem-based discussion of endocrine disorders I.
   Dr. Szekeres-Solymár Margit

22 Problem-based discussion of endocrine disorders II.
   Dr. Szekeres-Solymár Margit

23 Problem-based discussion of endocrine disorders III.
   Dr. Szekeres-Solymár Margit

24 Problem-based discussion of endocrine disorders IV.
   Dr. Szekeres-Solymár Margit

Practices
Seminars
Exam topics/questions
Pathophysiological analysis of clinical case histories based on the topics discussed during the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Diagnostic Methods in Gastroenterology and Hepatology

Course director: Dr. Imre Szabó, associate professor
1st Department of Internal Medicine • szabo.imre@pte.hu

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

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 2 – 40
Prerequisites: OAP-BPR-T completed + OAP-KO2-T completed + OAK-PH2-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 bedside practices.

Conditions for acceptance of the semester
Maximum 20% absence and written exam.

Mid-term exams
none

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
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  - Kumar and Clark Clinical Medicine
  - Davidson Principles and Practices of Medicine
  - Essentials of Kumar and Clark Medicine
  - Davidson 100 Clinical Cases
  - Mcleaods Clinical Diagnosis
  - Mcleaods Clinical Examinations. Endosonography
  - Hawes, Fockens & Varadarajulu: Expert Consult - online and print, 3rd edition
  - Baron, Kozarek & Carr-Locke: ERCP Expert Consult - online and print, 2nd edition

Lectures
1. Physical examination of patients with gastrointestinal diseases
   Dr. Szabó Imre
2. Upper GI endoscopy
   Dr. Szabó Imre
3. Lower GI endoscopy
   Dr. Vincze Áron Endre
4. ERCP
   Dr. Vincze Áron Endre
5. Laboratory studies in liver diseases
   Dr. Pár Gabriella
6. Investigations of small intestine
   Dr. Czimmer József
7. Investigations in functional disorders of GI tract
   Dr. Czimmer József
8. Endosonography
   Dr. Sarlós Patricia
9. Interventional endoscopy
   Dr. Gödi Szilárd
10 Imaging studies in the gastrointestinal system. Interventional radiology in digestive system diseases
   Dr. Battyáni István

11 Functional studies of digestion and absorption
   Dr. Vincze Áron Endre

12 Nuclear studies of the digestive system
   Dr. Bódisné Dr. Zámbó Katalin

Practices
Seminars


Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Battyáni István (A0WXF5), Dr. Bódisné Dr. Zámbó Katalin (E883Q7), Dr. Czimmer József (H96C48), Dr. Gódi Szilárd (HIX0MZ), Dr. Pár Gabriella (IQHZQO), Dr. Sarlós Patricia (LCRJVN), Dr. Szabó Imre (VBRF9D), Dr. Vincze Áron Endre (FO6QZV)
OAE-DM5-T  DEMONSTRATOR ACTIVITY 5

Course director: DR. LÁSZLÓ JÓZSEF CZOPF, associate professor
1st Department of Internal Medicine  •  laszlo.czopf@aok.pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 7

Number of hours/semester: 0 lectures + 24 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 1 – 300
Prerequisites: OAE-DM4-T completed

Topic
This course gives support and acknowledgement for students performing documented and successful supervised teaching activities and taking an active part in organizing courses.
The subjects can be taken up in eight semesters (in a total value of 16 credits).

Conditions for acceptance of the semester

Students have to register every semester as demonstrators, should provide proof of previous demonstrator activity, and the semester will be signed on the basis of at least 24 hours of teaching or organizatory activity. The grades will be given according to the Code of Demonstrators with additional requirements, that you can reach using the following links: Code of Demonstrator Students:
https://docs.google.com/document/d/1xkk yeRdZcDphmqWEnpOnO5Qf34MpBBJqogG09fod8Rw/edit?usp=sharing

Faculty Home Page of the Circle of Demonstrator Students (DDK):

Mid-term exams
At least two midsemester tests should be successfully completed to pass.

Making up for missed classes
There are no absences accepted from the 24 hours demonstrator activity.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
Practices
Seminars

Exam topics/questions
The topics of the tests depend on the specific course of the demonstrator activity.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Czopf László József (BAVD1M), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Sebők Judit (GLM10L), Dr. Tamás Andrea (F7QM8G), Dr. Ujvári Balázs (EN1LY9)
OAE-DON-T  DEPRESSION AND SUICIDE - CLINICAL AND RESEARCH APPROACH
Course director:  DR. SÁNDOR FEKETE, professor
Department of Psychiatry and Psychotherapy • fekete.sandor@pte.hu
1 credit • midsemester grade • Elective subject • both semesters • recommended semester: 7
Number of hours/semester:  12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 15
Prerequisites:  OAP-GT1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Mid-term exams
According to the Code of Studies and Examinations

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Kaplan Sadock: Synopsis of Psychiatry, 2005
  Fekete S., Osvath, P.: Suicide Studies - from Genetics to Psychiatry and Culture, 2005

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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Fekete Sándor (SLBJBN), Dr. Osváth Péter (MZZDY4), Dr. Vörös Viktor (V4AZUR)
**OAE-ED-T  THE ROLE OF THE ECG IN THE DIFFERENTIAL DIAGNOSIS 1**

**Course director:** Dr. András KOMÓCSI, professor
Heart Institute  • komocsi.andras@pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 7

<table>
<thead>
<tr>
<th>Number of hours/semester:</th>
<th>12 lectures + 0 practices + 0 seminars = total of 12 hours</th>
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<td>Course headcount limitations (min.-max.):</td>
<td>5 – 20</td>
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<tr>
<td>Prerequisites:</td>
<td>OAP-BPR-T completed + OAP-KO1-T completed</td>
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**Topic**

The course is primarily planned to fulfill the interest of students interested toward cardiology. Evoking the basics of ECG will be followed by grouping/classifying certain diseases regarding cardiology and internal medicine, then introducing extracardiac factors; (ion level insufficiency, drug/pharmaceutical effects, central nervous systems effects) impact on the cardiac system, and tracking of the cardiovascular system’s diseases in a dynamic way will be the aim of this course. The students will be introduced to the application/usage of ECG within the field of emergency medicine, followed by gaining the ability to analyze these ECGs properly and confidently.

ECGs attached to detailed case presentations improves most students’ ability to make decisions in acute situations and it improves the capability to create a complex aspect/approach as well.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

The exam is an electronic test targeting different levels of ECG knowledge.

**Making up for missed classes**

No possibility offered to substitute for missed lectures.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

**Lectures**

1. ECG basics
   Dr. Komócsi András
2. EKG Basics 2.
   Dr. Komócsi András
3. Disorders of impulse generation
   Dr. Komócsi András
   Dr. Komócsi András
5. Conduction disorders
   Dr. Kittka Bálint Pál
   Dr. Kittka Bálint Pál
7. Myocardial ischemia
   Dr. Komócsi András
8. Myocardial ischemia 2.
   Dr. Komócsi András
9. Special EKG Technics
   Dr. Husznai Róbert
10. Intracardial EKG, Elektrophysiology
    Dr. Komócsi András
11. Pacemaker EKG
    Dr. Komócsi András
12. Technical Artefakts and pitfalls
    Dr. Husznai Róbert
Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
The subject can only be registered in case of a PASSED and valid health aptitude test!

**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: use of drugs during pregnancy and lactation; significance of pharmacogenomics in therapy and drug development, pharmacology of retinoids; other drugs used in dermatology; use of meta-analysis in evaluation of drugs, clinical significance of basic pharmacodynamic and pharmacokinetic parameters; special aspects of drugs used by inhalation, basics of chronopharmacology; pharmacology of contrast media, drugs and chirality. The course wishes to contribute to a better understanding of the use of drugs in the clinical practice and may help students prepare for the pharmacology exams.

**Conditions for acceptance of the semester**

Maximum of 25% absence allowed

**Mid-term exams**

After the last lecture of the course, a written test is taken in the instruction period to obtain a mid-semester grade. Those who fail or do not write this test have a second chance until the end of Week 12 of the instruction period to improve in form of an oral conversation. Upon failing or missing there is one more oral chance to obtain a mid-semester grade during the first two weeks of the exam period.

**Making up for missed classes**

There is no way to make up for missed lectures.

**Reading material**

- **Obligatory literature**
  None.

- **Literature developed by the Department**
  The material of the lectures is available in PDF format in the Neptun.

- **Notes**
  None.

- **Recommended literature**
  None.

**Lectures**

1. Special aspects of use of drugs during pregnancy and lactation  
   Dr. Pethő Gábor István
2. Significance of pharmacogenomics in therapy and drug development  
   Dr. Pethő Gábor István
3. Use of meta-analysis in evaluation of drugs  
   Dr. Pethő Gábor István
4. Drugs and chirality  
   Dr. Pethő Gábor István
5. Clinical significance of pharmacodynamic and pharmacokinetic parameters on the example of drugs used in respiratory diseases I  
   Dr. Pethő Gábor István
6. Clinical significance of pharmacodynamic and pharmacokinetic parameters on the example of drugs used in respiratory diseases II  
   Dr. Pethő Gábor István
7. Pharmacology of retinoids  
   Dr. Pethő Gábor István
8. Drugs (other than retinoids) used in dermatology  
   Dr. Pethő Gábor István
9. Pharmacology of contrast media  
   Dr. Pethő Gábor István
10. Basics of chronopharmacology  
    Dr. Pethő Gábor István
Practices
Seminars
Exam topics/questions

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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-IKR-T INTERVENTIONAL CARDIOLOGY

Course director: Dr. András KOMÓCSI, professor
Heart Institute • komocsi.andras@pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 7

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 15 Prerequisites: OAP-BPR-T completed

Topic
Interventional cardiology is a branch of cardiology that deals specifically with the catheter based treatment of heart diseases. An increasing number of procedures can be performed on the heart by catheterization including coronary and structural heart interventions. These methods revolutionized the diagnosis and treatment of cardiology. The course gives an introduction into indications, working environment and armamentarium involving medical devices and adjunctive therapy.

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.

Mid-term exams
1st written test: 5th week, 2nd written test: 12th week.

Making up for missed classes

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Mauro Moscucci: Grossman & Baim’s Cardiac Catheterization, Angiography, and Intervention, 8e 2013

Lectures
1 Coronary angiography I. Typical situations
   Dr. Kittka Bálint Pál
2 Coronary angiography II. Atypical situations, challenges.
   Dr. Kittka Bálint Pál
3 Introduction: Short history with great impact
   Dr. Komócsi András
4 Access site selection for cardiac catheterization
   Dr. Komócsi András
5 Show the SKILLs: access site, diagnostic angiography
   Dr. Komócsi András
6 Show the SKILLs: access site, diagnostic angiography
   Dr. Komócsi András
7 Right side cath: valves, shunts, monitoring
   Dr. Kittka Bálint Pál
8 Right side cath: Pulmonary hypertension
   Dr. Kittka Bálint Pál
9 Coronary intervention: guides, wires, baloons
   Dr. Kittka Bálint Pál
10 Coronary interventions in acute coronary syndromes
    Dr. Kittka Bálint Pál
11 Strategies and approaches of the bifurcation lesions
    Dr. Komócsi András
12 Chronic total occlusion: skillset, strategies
    Dr. Komócsi András
13 Show the SKILLs: coronary intervention, STEMI
    Dr. Komócsi András
14 Show the SKILLs: Coronary intervention, STEMI
    Dr. Komócsi András

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15 Transcatheter valve interventions  
   Dr. Kittka Bálint Pál
16 Transcatheter aortic valve replacement (TAVI, TVR)  
   Dr. Kittka Bálint Pál
17 Auxilliary methods: intracoronary pressure measurement  
   Dr. Komócsi András
18 Auxilliary methods: intravascular ultrasound  
   Dr. Komócsi András
19 Pacemakers, implantable defibrallors I  
   Dr. Németh Marianna
20 Pacemakers, implantable defibrallors II  
   Dr. Németh Marianna
21 Show the SKILLS: pacemaker, echocardiography  
   Dr. Komócsi András
22 Show the SKILLS: pacemaker, echocardiography  
   Dr. Komócsi András
23 Intervention in CHIP patients. Circulatory support  
   Dr. Magyari Balázs
24 Adjuctive pharmacology. Anticoagulants, antiplatelets  
   Dr. Komócsi András

Practices
Seminars
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
The subject provides possibilities for clinical practice - bedside practice and practice at outpatient care – between semester 7 and 12 for students of General Medicine with the involvement of Teaching Hospitals and University Departments during Clinical module, in line with Hungarian and international trends and expectations. In connection with the studies a two-week practice can be done during the instruction period of each semester except for its last week, maximum four times (Clinical Block-Practice I-IV). The practice can be done at the same location or at two different locations for each week within a semester. If someone is doing the course several times (Clinical Block-Practice I. II. III. IV.), it is up to the students if they choose a different location or the same location from previous semesters. During the practice, besides taking of case history and physical examination of the patient and analyzing the results of special examinations, students participate in medical meetings, ward-rounds, consultations about patients and they also assist in diagnostic, operative, interventional procedures. Location for the practice can be chosen based on the students’ preference and on the capacity of the accepting institutions for the given period. The practice can be done any time during instruction period except for its last week, but not in the examination period. The period of the practice can include the period of spring holiday. During rotational year the practice can be done any time, there is no distinction of instruction period and exam period. The amount of absences in other subjects should be reduced by maximum 14.3% each semester on the basis of the Certificate of Fulfillment of Clinical Practice Block relating to the given period. The dates of the practice should be chosen in a way that in the case of not evenly distributed subjects absences due to the Clinical Block-Practice may not exceed the maximum allowed as mentioned above.

The practice can be done in divisions and laboratories of the following fields: surgery, vascular surgery, thoracic surgery, cardiac surgery, neurosurgery, traumatology, transplant surgery, intensive therapy, anaesthesiology, emergency department, ophthalmology, obstetrics and gynecology, urology, otolaryngology, orthopedics, pediatric surgery, dermatology, oral surgery, angiology, metabolism, internal medicine, diabetology, endocrinology, immunology, cardiology, nephrology, oncology, tropical diseases, geriatrics, infectious, gastroenterology, hematology, radiology, diagnostic nuclear medicine, neurology, psychiatry, pediatrics, rheumatology, laboratory medicine, microbiology, pathology, laboratory of genetics, family medicine, laboratory genetics. Based on individual validation further areas can also be targeted.

At least 30 hours and 4 days of practice during usual working hours should be certified in order to have an approved practice. Night duties, on site public/bank holidays, scientific work cannot be accepted as part of the practice.

Students must submit an Acceptance Letter to the course leader until the end of the 4th week of the instruction period the latest (also in the case of rotational year students), and 1 week before the planned practice the latest (office: Ms. Marianna Pesti, JPKT, 1st floor, C wing, Door 110.).

Upon successful completion of practice, certificate signed and stamped by the practice leader must be obtained from the head of the department/ward/unit with his legible name on the last day of practice the latest with the signature of the institution. The certificate should be uploaded to the NEPTUN MeetStreet site of the subject in a pdf format together with the case studies directly after the practice, but until Friday on the last but one week of the instruction period the latest.

If needed, the certificate must be sent to all of the other subject leaders electronically by the last Wednesday of the instruction period the latest for the appropriate correction of absences.

Practice can be spent in a foreign country, at an accredited medicine ward in a University Hospital, in a Teaching Hospital or County Hospital with 24-hour patient admission. The student is required to speak the language of the host country or have a B2 English language certificate.

During practice the rules concerning medical confidentiality, the rules and regulations of the University of Pécs, data protection, fire and accident prevention, occupational safety, institutional secrecy and job orders shall be observed.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

At least 30 hours/week and 4 days/week of practice should be certified in order to have an approved practice.

Making up for missed classes

To make up for absences students can do further practice at the location of the practice during regular working hours. The amount of absences in other subjects should be reduced by maximum 14.3% each semester on the basis of the Certificate of Fulfillment of Clinical Practice Block relating to the given period.
Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures

Practices
1-60 gyakorlat

Seminars

Exam topics/questions

Practical requirements for students during and after the practice:
1. Practice should be 6-8 hours on working days during usual working hours.
2. A regular presence of students is required at medical workshops, consultations, graduate and postgraduate teaching programs of the ward. The practice period is optimally supported by consultations and case presentations.
3. Students should take part in activities of residents, ward doctors and doctors in training under supervision according to the applicable local professional, safety and legal regulations. These should include venipuncture, taking medical history, performing physical examination, admitting new patients, planning diagnostic and therapeutic measures, fulfilling tasks required by the ward-round, regularly reporting to the staff, participating in writing discharge summaries and giving account of their patients during the professorial grand-rounds. They should also accompany their patients to special examinations and therapies (e.g. endoscopy, biopsy, echocardiography, exercise stress test, operations).
4. Students should be prepared to present at least 2 detailed anonymized patient/case documentations from each week of the practice at the final examination indicating the date, the ward specifications, the name of the tutor, the name of the student and they should also be signed by both the student and the tutor. The case history should be composed in the language that was used at the ward, the rest of the documentation in the study language of the student or in English. A patient documentation should be at least one, and a maximum of four typed (A/4) pages long. The documentations should be uploaded to the NEPTUN MeetStreet site of the subject in a pdf format and they should not exceed 1 Mbyte. They are due together with the certificate until Friday on the last but one week of the instruction period.
5. Students get a certificate of the gained clinical skills that they acquire during the practice (at least 8 skills are required to be signed each week). They will be acknowledged in the Booklet of Clinical Skills by the course leader on the basis of the certificate.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Czopf László József (BAVD1M), Dr. Szabó Imre (VBRF9D), Dr. Tóth Kálmán (MEK9DI)
OAE-KKM-T  COMPLEX PATHOPHYSIOLOGICAL MECHANISMS

Course director:  Dr. MARGIT SZEKERES-SOLYMÁR, assistant professor
Institute for Translational Medicine  •  margit.solymar@aok.pte.hu

1 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 7
Number of hours/semester:  12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 30  Prerequisites:  OAP-KO2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Test-exam
Making up for missed classes
Essay from the subject of the omitted lecture.

Reading material
-  Obligatory literature
   none
-  Literature developed by the Department
   Lecture slides will be uploaded to Neptun.
-  Notes
   none
-  Recommended literature
   none

Lectures
1  Therapy of obesity
   Dr. Balaskó Márta
2  Alcohol action, alcoholism
   Burzánné Dr. Pétervári Erika
3  Chronic bed-rest
   Dr. Szélényi Zoltán
4  Global climatic changes and medicine
   Dr. Székely Miklós
5  Capsaicin, its receptors, functional role
   Dr. Garami András
6  Cold-related disorders
   Dr. Garami András
7  Pathophysiology of oxygen therapy
   Dr. Soós Szilvia
8  Pathophysiology of kidney transplantation
   Hamar Péter
9  Complex energetic insufficiencies
   Dr. Garai János
10 Basics of medical diet
    Dr. Garai János
11 Homocysteic acid, folic acid and health
    Dr. Garai János
12 Synthesis of the topics, test
    Dr. Szekeres-Solymár Margit
Practices

Seminars

Exam topics/questions
1. Therapy of obesity
2. Alcohol action, alcoholism
3. Chronic bed-rest
4. Global climatic changes and medicine
5. Capsaicin, its receptors, functional role
6. Cold-related disorders
7. Pathophysiology of oxygen therapy
8. Pathophysiology of kidney transplantation
9. Complex energetic insufficiencies
10. Basics of medical diet
11. Homocysteic acid, folic acid and health

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-KOE-T  Case-reports: Pathophysiological Analyses**

**Course director:** Dr. Márta Balaskó, associate professor
Institute for Translational Medicine • marta.balasko@aok.pte.hu

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

**Number of hours/semester:** 12 lectures + 0 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 3 – 30

**Prerequisites:** OAP-KO2-T completed

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**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**

Maximum of 15% absence allowed

**Mid-term exams**

None

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  
  Selected case histories will be uploaded to Neptun.

- **Notes**

- **Recommended literature**

  EC Toy, JT Patlan, F Faustinella, SE Cruse (eds.): Case Files Internal Medicine, Lange Medical Book McGraw-Hill, New York 2007


**Lectures**

1. Case-reports: anemias, polycythemias.
   Dr. Garami András

2. Case-reports: disorders of blood clotting.
   Dr. Garami András

3. Case-reports: cardiopulmonary disorders I.
   Dr. Balaskó Márta

4. Case-reports: cardiopulmonary disorders II.
   Dr. Balaskó Márta

5. Case-reports: gastrointestinal disorders.
   Dr. Székely Miklós

   Dr. Székely Miklós

7. Case-reports: pH disorders I.
   Dr. Garami András

8. Case-reports: pH disorders II.
   Dr. Garami András

9. Case-reports: disorders of the intermediary metabolism I.
   Dr. Szekeres-Solymár Margit

10. Case-reports: disorders of the intermediary metabolism II.
    Dr. Szekeres-Solymár Margit

11. Case-reports: endocrine disorders I.
    Dr. Garai János

12. Case-reports: endocrine disorders II.
    Dr. Garai János
Practices

Seminars

Exam topics/questions

None. The grade will be determined based on the discussion of case histories at the end of the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-POF-T  PROBLEM-BASED PHARMACOLOGY**

**Course director:**  
DR. ZSUZSANNA TAMASIK-HELYES, professor  
Department of Pharmacology and Pharmacotherapy • zsuzsanna.helyes@aok.pte.hu

- **2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 7**

**Number of hours/semester:**  
0 lectures + 0 practices + 20 seminars = total of **20 hours**

**Course headcount limitations (min.-max.):**  
5 – 30,  
**Prerequisites:** OAK-PH2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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**

- Maximum of 25% absence allowed
- **Mid-term exams**
- Written exam (multiple choice test and assay questions)
- **Making up for missed classes**
- Not possible.

**Reading material**

- **Obligatory literature**
  - None.
- **Literature developed by the Department**
  - PowerPoint slides available on the intranet.
- **Notes**
  - None.
- **Recommended literature**

Lectures  
Practices  
Seminars  
Exam topics/questions  
None.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Pozsgai Gábor (TQC4SQ), Sánticsné Dr. Pintér Erika (A66I29), Tamasikné Dr. Helyes Zsuzsanna (HSYFQ5)
**OAE-PSA-T**  
**Psychosomatic Approach in Medicine**

**Course director:** DR. ISTVÁN TIRINGER, assistant professor  
Department of Behavioural Sciences  
istvan.tiringer@aok.pte.hu

2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 7  
Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours  
Course headcount limitations (min.-max.): 5 – 25  
Prerequisites: OAP-MT5-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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 provides methods of diagnosis and treatment.

**Conditions for acceptance of the semester**

Presenting the basic aspects of an optional psychosomatic disorder

Absence: max. 15% of seminars

Examination: Multiple Choice Test

**Mid-term exams**

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**Making up for missed classes**

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**Reading material**

- **Obligatory literature**
  

- **Literature developed by the Department**
  
  Neptun MeetStreet

- **Notes**

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- **Recommended literature**
  

**Lectures**

**Practices**

**Seminars**

1. Introduction
2. Introduction
3. Stress and Disease
4. Stress and Disease
5. Psychological Responses to Illness
6. Psychological Responses to Illness
7. Depression
8. Depression
9. Anxiety Disorders
10. Anxiety Disorders
11. Somatization and Somatoform Disorders
12. Somatization and Somatoform Disorders
13. Heart Disease
14. Heart Disease
15. Gastrointestinal Disorders
16. Gastrointestinal Disorders
Exam topics/questions

History of Psychosomatic Medicine
Psychophysiology and psychoneuroimmunology
Mood Disorders and Insomnia in the General Medical Setting
Anxiety in the General Medical Setting
Somatic Symptom and Related Disorders
Cardiovascular Disease
Oncology
Gastrointestinal Disease
Pulmonary Disease
Pain and Palliative Care
Strategies to Improve Coping and Manage Maladaptive Behaviors in the General Medical Setting
Psychotherapy in the General Medical Setting

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Tíringer István (MSUBAC)
**OAE-SSA-T  CARDIAC AND THORACIC SURGERY ANESTHESIA**

**Course director:** DR. LAJOS BOGÁR, professor  
Department of Anaesthesiology and Intensive Therapy • bogar.lajos@pte.hu

2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 7

*Course descriptions – academic year of 2019/2020*

<table>
<thead>
<tr>
<th>Number of hours/semester:</th>
<th>0 lectures + 24 practices + 0 seminars = total of 24 hours</th>
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| Course headcount limitations (min.-max.): | 4 – 20

**Prerequisites:** none

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**Topic**

Cardiac and thoracic surgery anesthesia is the most progressive discipline in modern anesthesia. Accumulation of technical challenges and physiological knowledges urges us to pass learnings to medical students too.

**Conditions for acceptance of the semester**

Maximum of 15% absence allowed

**Mid-term exams**

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**Making up for missed classes**

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**Reading material**

- **Obligatory literature**
  --

- **Literature developed by the Department**
  --

- **Notes**
  --

- **Recommended literature**
  --

**Lectures**

**Practices**

1-24  Endotrachealis intubáció  
Artériakanülálás  
Perifériás vénakanülálás  
Szimulációs fantomgyakorlatok

**Seminars**

**Exam topics/questions**

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**Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject**

**Participants**

Dr. Szabó Zoltán (UC1A4J), Dr. Varga Noémi (VHGWUN), Dr. Vorobcsuk András (VIFE0Q)
OAE-TD5-T  STUDENT PROJECT RESEARCH 5

Course director: DR. TIBOR ERTL, professor

Undergraduate Research • tibor.ertl@aok.pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 7

Number of hours/semester: 0 lectures + 20 practices + 0 seminars = total of 20 hours

Course headcount limitations (min.-max.): 1 – 300

Prerequisites: OAE-TD4-T completed

The course can only be registered in case of a PASSED and valid health aptitude test!

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 enrol 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 enrol 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. For detailed requirements please read the following document: http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng

Mid-term exams

Making up for missed classes

Not applicable.

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Not applicable

Lectures

Practices

Seminars

Exam topics/questions

Not applicable

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Balogh Péter (KVAPT7)
OAE-TUO-T  SYMPTOM-BASED DIAGNOSTICS IN INTERNAL MEDICINE

Course director:  DR. JÓZSEF CZIMMER, associate professor
1st Department of Internal Medicine • czimmer.jozsef@pte.hu

1 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 7
Number of hours/semester:  0 lectures + 6 practices + 6 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 30  Prerequisites: OAP-BPR-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The subject goals to deal with a very important issue of internal medicine specialists and general practitioners (family doctor’s) praxis, the symptom-based and problem-oriented approach to the patients and disorders considering the up-to-date evidences and latest guidelines. We would like to teach a systematic way of thinking and use it in the praxis.

The course has two main goals.
1. To teach how to search up-to-date evidences, guidelines via internet usable for clinical practice
2. To learn a method to gain diagnosis from symptoms and complaints presented by patients.

The course is based on the systematic discussion of main symptoms and their differential diagnostics, to find the adequate information sources and practice them.

Some of the information found in textbooks are out of date because of the long lasting process of publications, in the age of internet (even bed-side use is available by smart devices) the immediate knowledge of the latest scientific results is possible in the everyday medical practice, patients of the 21st century are well-informed from the internet, so the doctors of the present and the future cannot miss this knowledge. Our goal is to teach and enhance evidence-based thinking in medicine and differential diagnostics.

50% of course contains interactive lectures that detail the main symptoms of different disciplines of internal medicine, based on etiological, diagnostic and differential diagnostic approaches using up-to-date guidelines, latest evidences and internationally accepted protocols. We would like to share our experience in the field, as well.

50% of the course contains common practices in large group with patient interview together and small (2-5 persons) group practices with personal patient interviews that are the basis of 2 self-tailored case stories that will be the basis of the credit. Practices are good occasions for use of detailed methods and the immediate feed-back from experts and so enhance the process of learning.

We suggest this basic course for every student who is interested in the internal medicine, wants to improve internet usage in future praxis and at least have started propedeutics of internal medicine subject.

Conditions for acceptance of the semester

Up to 2 absences from classes (15%) are acceptable, fulfil of all practices is mandatory (timing is relatively flexible) and submission of 2 case-based essay, that will be the base of the grade.

Mid-term exams
Submission of 2 case-based essay using learned methodology for gaining diagnosis, that will be the base of the grade.

Making up for missed classes
Only small group practices can be held in different dates based on personal discussion.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Harrison’s: Principals of Internal Medicine, Up-To-Date website (www.uptodate.com), www.pubmed.com

Lectures
Practices
1  Evidence based medicine.
3  Practice: patient presentation, bedside practice and case discussion
4  Practice: patient presentation, bedside practice and case discussion
5  Practice: patient presentation, bedside practice and case discussion
6  Closing Consultation: Discussion of Submitted Case Reports (practice)
Seminars

1. Anamnesis, Cost-Effective Diagnostics, Special Diagnostics of Severe Acute Disorders. Evidence Based Medicine
2. Gastroenterological Differentialdiagnostics I: Acute and Chronic Abdominal Pain, Dysphagia, Weight Loss
3. Gastroenterological Differentialdiagnostics II: Diarrhoea, Nausea, Vomiting, Jaundice, Ascites
5. Cardiological and Pulmonary Differentialdiagnostics: Dyspnea, Pulmonary Edema, Cyanosis, Hypoxaemia, Edema, Cough, Hemoptoe
6. Fever, Hyperthermia, Hypothermia, FUO. Differentialdiagnostics of Skin and Soft-Tissue Infections

Exam topics/questions

No test exam.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Czimmer József (H96C48), Dr. Kappéter Ágnes (A7UCWW), Dr. Kenyeres Péter (KRNHJ)
OAE-Z11-T  Anaesthesia 1
Course director: DR. ISTVÁN BÁTAI, associate professor
Department of Anaesthesiology and Intensive Therapy • ibatai@gmail.com

1 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 7
Number of hours/semester: 10 lectures + 0 practices + 0 seminars = total of 10 hours
Course headcount limitations (min.-max.): 1 – 50  Prerequisites: OAP-GT1-T completed

Topic
Introduction and the history of anaesthesia. The practical aspects of anaesthetic pharmacology. Basic knowledge of the main anaesthetic techniques, total intravenous and inhalational anaesthesia. Description of anaesthesia machine and the intraoperative monitors. Techniques of airway management.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
1 exam

Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture slide
- Notes
- Recommended literature

Lectures
1  Introduction  Dr. Báta István
2  History of anaesthesia  Dr. Báta István
3  Premedication  Dr. Báta István
4  Intravenous induction agents  Dr. Báta István
5  Total intravenous anaesthesia  Dr. Báta István
6  Inhalational anaesthetics  Dr. Báta István
7  Inhalational anaesthesia  Dr. Báta István
8  Opiates  Dr. Báta István
9  Muscle relaxants  Dr. Sűtő Balázs
10 Local anaesthetics  Dr. Báta István

Practices
Seminars
Exam topics/questions
Lectures
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject.

Participants
OAF-DEP-T  Anxiety, Depression and Somatization in General Medical Practice

Course director: Dr. József Varga, assistant professor
Department of Behavioural Sciences • jozsef.varga@aok.pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 7

Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 16
Prerequisites: OAP-MT5-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
Anxiety and depression symptoms are often unrecognised and left without therapy as doctors usually focus on somatic problems. Somatization - a common set of functional somatic symptoms - poses a diagnostic challenge for the physician. This course overviews the features and therapeutic approaches of these problems in general practice. Presenting the interaction of affective conditions and biological diseases, offers a behavioural concept in the medical practice.

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

Mid-term exams
Presentation of a topic and written final test.

Making up for missed classes
Additional homework.

Reading material
- Obligatory literature
- Literature developed by the Department
  Handouts, publications, additional materials presented at the practices, available on Neptun.
- Notes
- Recommended literature

Lectures

Practices

Seminars
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 early symptoms of anxiety and depression; prevention, diagnostics.
6 Recognising early symptoms of anxiety and depression; prevention, diagnostics.
7 Communication with the somatizing patient, supportive therapy, patient care.
8 Communication with the somatizing patient, supportive therapy, patient care.
9 Cognitive and behavioral therapeutic approaches.
10 Cognitive and behavioral therapeutic approaches.
11 Case studies.
12 Case studies.

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Varga József (Q1NPTA)
**OAF-FM2-T  DATA ANALYSIS 2**

**Course director:**

**DR. LÁSZLÓ PÓTÓ, associate professor**

Institute of Bioanalysis  •  laszlo.poto@aok.pte.hu

1 credit  •  midsemester grade  •  Optional subject  •  autumn semester  •  recommended semester: 7

**Number of hours/semester:**

6 lectures + 6 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**

1 – 12

**Prerequisites:**

OAF-FMA-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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**Topic**

The goal of this course is to help students to prepare for thesis writing or making their own student research project. It covers two fields of that job: the practice of data collection and prepare data for the analysis as well as the performing the analysis based on the preliminary analysis plan. Shortly to say: How to perform the data collection and analysis of your own study project. (This course can be the continuation of the „Data analysis 1” course however someone can complete these two courses on a reversed order as well. The main reason of this flexibility is, that many students are asking for help when they have already had their data at hands (at least partially), and this course is processing the steps from this point of the job. Even though, it is beneficial for the students doing this course first to complete the Data analysis 1 course later. They can do it next year for example - so to understand the preliminary steps of a research work: How to make a research plan?)

This course is also based on the medical papers. Students may pick the appropriate data collection methods and recognize the critical points of this process based on the most fundamental papers of their own research field. They can learn from the most rewarded experts on this way. From a paper you may extract the principles as well as you can follow immediately the realization. It is an excellent way to learn the methodology. You may even learn from the errors.

The same way is followed for the data analysis and making conclusions. Every student will do his/her own data analysis based on their own plan.

Students will have all help to the practical evaluation of their own data and making the right conclusion. The steps and results will be discussed and improved by a class discussion.

**Conditions for acceptance of the semester**

Maximum 1 lesson absence.

**Mid-term exams**

Evaluate your data step by step and present it to the group weekly.

**Making up for missed classes**

One extra class

**Reading material**

- **Obligatory literature**
  
  1-3 medical papers brought by each student (from library, from your department or from the tutor of your thesis).

- **Literature developed by the Department**
  
  Supporting materials (papers, posters, research reports, …) supplied by the tutor of the classes.

- **Notes**

- **Recommended literature**
  
  Any statistical books.

**Lectures**

1  Introduction. Find a paper to process. Prepare or present your own data collection plan.
   Dr. Pótó László

2  The realization of the data collection - examples are based on papers
   Dr. Pótó László

3  The preliminary data preparations for the following statistical analysis.
   Dr. Pótó László

4  Do your own statistical analysis 1-2: - select the right methods, - interpret the results.
   Dr. Pótó László

5  Make your conclusion and share the results with the others.
   Dr. Pótó László

6  Summary. Consolidation and evaluation of the results.
   Dr. Pótó László
Practices
1. Find a paper to process. Work on your own data collection plan.
   Dr. Pótó László
2. Present the realization of the data collection - based on selected papers
   Dr. Pótó László
3. Share your experiences on your preliminary data preparations - make corrections if needed.
   Dr. Pótó László
4. Present your own statistical analysis - methods and results
   Dr. Pótó László
5. Make your conclusion and share the results with the others.
   Dr. Pótó László
6. Overview and summarize the results of the class.
   Dr. Pótó László

Seminars

Exam topics/questions
Evaluate your data and submit your own results based on your active participation.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Pótó László (FIO4UU)
The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

The goal of this course is to help students to prepare for thesis writing or making their own student research project. It covers mainly two fields of that: read and interpret scientific papers and prepare an own study plan. Shortly to say: How to prepare for your own study project.

**Block One:**

The medical papers are likely the most important source to improve your present knowledge as a student and as an MD. Most of these ‘original papers’ are based on carefully planned data collection and evaluation applying a wide array of statistical methods. It is essential to be familiar with this methodology so to understand these papers. But you may learn these steps and methods from the papers since all are based on the rules of designing scientific research projects. From a paper you may extract the principles as well as you can follow immediately the realization. It is an excellent way to learn the methodology. You may even learn from the errors.

**Block Two:**

Apply all these for your own research: make a study plan. It should include your study goal the extent and way of your data collection the preliminary data processing the way of data analysis and the way of conclusion making. Based on this outline you will prepare your own study design on your own student’s research work or on your thesis job. If you have no such project at the moment you may construct an own ‘sample study plan’ that can be a working model for your future thesis work. You will have all help to find your own project and complete the plan in the practice if you need. All of your personal design elements will be discussed and improved by a class discussion.

The practical realization of your study will be supported by the Data analysis 2 course.

**Conditions for acceptance of the semester**

Maximum 1 lesson absence.

**Mid-term exams**

Prepare and submit your own study plan step-by-step and present sortly weekly to the group - based on your active participation.

**Making up for missed classes**

One extra class

**Reading material**

- **Obligatory literature**
  1-3 medical papers brought by each student (from library, from your department or from the tutor of your thesis).

- **Literature developed by the Department**
  Other supporting materials supplied by the tutor of the classes.

- **Notes**

- **Recommended literature**
  Any statistical books on study design and data analysis.

**Lectures**

1. Introduction. Find a paper to process. Find your own study.  
Dr. Pótó László

2. The goal of your study - based on a demo paper  
Dr. Pótó László

3. The main- and ‘sub’-hypotheses of the study.  
Dr. Pótó László

4. Finding your sample frame - based on your hypotheses.  
Dr. Pótó László

5. The research design and the methods of the data collection. How many data should be collected?  
Dr. Pótó László

6. Creating the plan of the data analysis. The complete study plan.  
Dr. Pótó László
Practices

1. Introduction. Overview of some sample papers.  
   Dr. Pótó László

2. The goal of your study - processing a few papers brought and presented by students.  
   Dr. Pótó László

3. Setting the study hypotheses. Further analysis of the papers.  
   Dr. Pótó László

4. Which data should you collect and how to do that.  
   Dr. Pótó László

5. Finalize the plan of your data collection. Make a plan of the data processing.  
   Dr. Pótó László

6. Create, present and discuss of your study plan.  
   Dr. Pótó László

Seminars

Exam topics/questions

Preparation of the study plan

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pótó László (FIO4UU)
OAF-GIS-T  CHILD AND ADOLESCENT PSYCHIATRY
Course director: DR. GYÖRGYI TÉNYI-CSÁBI, associate professor
Department of Paediatrics • csabi.gyorgyi@pte.hu

1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 7

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 2 – 20
Prerequisites: OAA-ANT-T completed + OAA-AA2-T completed + OAP-KO1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The subjects explores child and adolescent psychiatric disorders from a diagnostic and therapeutic perspective. Mental retardation, pervasive disorders, tic disorders, elimination disorders, psychotic disorders, suicide, behavioral problems, anxiety disorders and other psychiatric problems are discussed. Recent psychological and biological theories are introduced.

Conditions for acceptance of the semester
Maximum of 25 % absence allowed

Mid-term exams
Making up for missed classes
Essay should be written

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
1 Mental retardation
   Dr. Tényiné Dr. Csábi Györgyi
2 Anxiety disorders
   Dr. Tényiné Dr. Csábi Györgyi
3 Eating disorders
   Dr. Tényiné Dr. Csábi Györgyi
4 Psychotic disorders
   Dr. Tényiné Dr. Csábi Györgyi
5 Affective disorders
   Dr. Tényiné Dr. Csábi Györgyi
6 Substance use disorder
   Dr. Tényiné Dr. Csábi Györgyi
7 Personality disorders
   Dr. Tényiné Dr. Csábi Györgyi
8 Pervasive developmental disorder
   Dr. Tényiné Dr. Csábi Györgyi
9 Somatoform disorders
   Dr. Tényiné Dr. Csábi Györgyi
10 Elimination disorders: enuresis and encopresis
   Dr. Tényiné Dr. Csábi Györgyi
11 ADHD, TIC disorder
   Dr. Tényiné Dr. Csábi Györgyi
12 Conduct disorder, Specific developmental disorders
   Dr. Tényiné Dr. Csábi Györgyi
Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
efficient thesis writing

Course director: Dr. Valér Csernus, emeritus professor
Department of Anatomy • valer.csernus@aok.pte.hu

1 credit • midterm grade • Optional subject • both semesters • recommended semester: 7

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 3 – 120

Prerequisites: none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The doctoral thesis is a significant component of the medical degree. Most students, however, has no experience in writing a successful thesis. This course will deal with the fundamentals of thesis writing. The acquired skills will be also beneficial later during your professional life.

Several details have to be considered during the process. How do you find a suitable thesis topic? How do you get started? What does a thesis look like? What are the formal requirements? Where can you find scientific publications, and how do you cite them correctly? And how do you defend your thesis for a top grade? These topics are addressed in this course.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

Making up for missed classes

Consultation after the lecture

Reading material

- Obligatory literature
- Literature developed by the Department
  The lecture drafts will be available on the WEB page of the Anatomy department (http://an-server.pote.hu/eOkt.htm)
- Notes
- Recommended literature
  Code of Studies and Examinations of the UP (especially Amendment 2)

Lectures

1 General rules and formal requirements of the thesis. Vikjord Sigrid Anna
2 Types of theses. Choosing an appropriate topic and finding a consultant. Preparatory works. Vikjord Sigrid Anna
3 The structure of the thesis Vikjord Sigrid Anna
4 Time management and drafting. Vikjord Sigrid Anna
5 Obtaining relevant background information. Using literature. Use of scientific databases. Search strategies Vikjord Sigrid Anna
6 The writing process. Special considerations of academic writing. Vikjord Sigrid Anna
7 Presentation of the results. Embedding figures, graphs. The principles of statistical analysis. Dr. Csernus Valé
8 Citations. The use of citation software. Vikjord Sigrid Anna
9 Bringing it all together. Vikjord Sigrid Anna
10 Ethical considerations. Plagiarism. Dr. Csernus Valé
Practices

Seminars

Exam topics/questions

http://an-server.pote.hu/eOkt.htm

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-IFZ-T   NEURODEVELOPMENTAL DISORDERS**

Course director: Dr. Györgyi Tényi-Csábi, associate professor
Department of Paediatrics • csabi.gyorgyi@pte.hu

1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 7

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 2 – 20
Prerequisites: OAP-PA2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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**Topic**

The subject deals with the disorders of neurodevelopment from a clinical perspective. Introduces the most important aspects of neurodevelopment and shows the clinical and etiopathogenetic characteristics of different neurodevelopmental disorders. Child and adult neurological and psychiatric disorders are described in details.

**Conditions for acceptance of the semester**

20% absence is acceptable.

**Mid-term exams**

Making up for missed classes

An essay based on literature

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

- DSM-5, American Psychiatric Association, 2013

**Lectures**

1. The neurobiology of neurodevelopment
   Dr. Tényiné Dr. Csábi Györgyi
2. Neuropathological and neuroradiological characteristics of neurodevelopmental disorders
   Dr. Tényiné Dr. Csábi Györgyi
3. Mental retardation
   Dr. Tényiné Dr. Csábi Györgyi
4. Epilepsy and neurodevelopment
   Dr. Tényiné Dr. Csábi Györgyi
5. Attention deficit hyperactivity disorder
   Dr. Tényiné Dr. Csábi Györgyi
6. Neurodevelopment and autism spectrum disorders
   Dr. Tényiné Dr. Csábi Györgyi
7. Communication disorders, motor disorders, and specific learning disorders
   Dr. Tényiné Dr. Csábi Györgyi
8. Neurodevelopment and psychopathological models
   Dr. Tényiné Dr. Csábi Györgyi
9. The neurodevelopmental model of schizophrenia
   Dr. Tényiné Dr. Csábi Györgyi
10. The neurodevelopmental background of mood disorders and OCD
    Dr. Tényiné Dr. Csábi Györgyi
11. The therapy of neurodevelopmental disorders I
    Dr. Tényiné Dr. Csábi Györgyi
12. The therapy of neurodevelopmental disorders II
    Dr. Tényiné Dr. Csábi Györgyi
Practices

Seminars

Exam topics/questions

There will not be exam

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

OAF-MIA-T  CURRENT HOT TOPICS IN MEDICAL MICROBIOLOGY

Course director:  DR. LÁSZLÓ SZEREDAY, associate professor
Department of Medical Microbiology and Immunology • szereday.laszlo@pte.hu

2 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 7

| Number of hours/semester: | 24 lectures + 0 practices + 0 seminars = total of 24 hours |
| Course headcount limitations (min.-max.): | 3 – 30 |
| Prerequisites: | OAP-MO1-T completed |

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

This elective course is aimed at discussing the actual hot topics in the field of medical microbiology. Emphasis will be placed on the prevention, diagnosis and treatment of these infectious diseases.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

Grading is based on attendance/missed classes and activity during lectures.

**Making up for missed classes**

Personal consultation

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**


**Lectures**

1. Ebola virus outbreak
   Dr. Szereday László
2. Ebola virus outbreak
   Dr. Szereday László
3. Bioterrorism
   Dr. Szereday László
4. Bioterrorism
   Dr. Szereday László
5. Fecal microbiota transplantation (C. difficile)
   Dr. Szereday László
6. Fecal microbiota transplantation (C. difficile)
   Dr. Szereday László
7. Clinical applications of botox (C. botulinum)
   Dr. Szereday László
8. Clinical applications of botox (C. botulinum)
   Dr. Szereday László
9. Measles outbreak linked to Disneyland (Morbilli virus)
   Dr. Szereday László
10. Measles outbreak linked to Disneyland (Morbilli virus)
    Dr. Szereday László
11. Top 5 most deadliest infections
    Dr. Szereday László
12. Top 5 most deadliest infections
    Dr. Szereday László
13. Flue (bird, swine and human flu)
    Dr. Szereday László
14. Flue (bird, swine and human flu)
    Dr. Szereday László
| 15 | TB and its vaccination (M. tuberculosis)  
    | Dr. Szereday László |
| 16 | TB and its vaccination (M. tuberculosis)  
    | Dr. Szereday László |
| 17 | SARS, MERS  
    | Dr. Szereday László |
| 18 | SARS, MERS  
    | Dr. Szereday László |
| 19 | Zika virus disease  
    | Dr. Szereday László |
| 20 | Zika virus disease  
    | Dr. Szereday László |
| 21 | New drugs in Hepatitis C infections  
    | Dr. Szereday László |
| 22 | New drugs in Hepatitis C infections  
    | Dr. Szereday László |
| 23 | Vaccines  
    | Dr. Szereday László |
| 24 | Vaccines  
    | Dr. Szereday László |

**Practices**

**Seminars**

**Exam topics/questions**

see lecture topics

**Information**  
The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
OAF-MST-T  MICROSURGICAL TECHNIQUES

Course director: DR. GÁBOR JANCSÓ, associate professor
Department of Surgical Research and Techniques • jancsogabor@hotmail.com

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 7
Number of hours/semester: 0 lectures + 8 practices + 4 seminars = total of 12 hours
Course headcount limitations (min.-max.): 4 – 6
Prerequisites: OAP-MUA-T completed + OAP-SPR-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
The aim of the course is to get acquainted with microsurgical techniques. Students gain insight into the handling and maintenance of microsurgical tools and instruments as well as the personal and material demands of microsurgery, the indications, limits and results of this technique. Besides reviewing the general rules of microvascular anastomoses and nerve reconstruction, students acquire the handling of microsurgical tools and instruments during individually performed microsurgical operations on rats.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed
Mid-term exams
there is no mid-term examination
Making up for missed classes
Attendance is obligatory at every practice

Reading material
- Obligatory literature
- Literature developed by the Department
  http://aok.pte.hu/en/egyseg/oktatasianyagok/130
- Notes
- Recommended literature

Lectures
Practices
1. Microsurgical instruments and suturing techniques
2. Microsurgical instruments and suturing techniques
3. Abdominal aorta preparation and anastomosis in rat
4. Abdominal aorta preparation and anastomosis in rat
5. Carotid artery preparation and anastomosis in rat
6. Femoral artery preparation and anastomosis in rat
7. Peripheral nerve reconstruction in rat
8. Peripheral nerve reconstruction in rat

Seminars
1. Introduction into the microsurgery
2. Microsurgical suture techniques
3. Pitfalls of microvessel anastomoses
4. Injuries and reconstruction of peripheral nerves

Exam topics/questions
http://aok.pte.hu/hu/egyseg/oktatasianyagok/130

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
dr. Bognár Laura (XVGSYL), Dr. Gaszner Balázs (ZU0SO8), Dr. Hardi Péter (AKE71H), Dr. Jancsó Gábor (V382Q9), Dr. Nagy Tibor Aladár (VREE09), Dr. Petrovics Laura (MNZPKC), Dr. Takács Ildikó (V6M8LJ)
OAF-RAR-T  IMMUNOLOGICAL BASIS OF RHEUMATOID ARTHRITIS (RA)

Course director: DR. FERENC BOLDIZSÁR, associate professor
Department of Immunology and Biotechnology • boldizsar.ferenc@pte.hu

1 credit • midterm grade • Optional subject • both semesters • recommended semester: 7
Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 3 – 20
Prerequisites: OAP-PA1-T completed + OAP-PA2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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.

Mid-term exams
None.

Making up for missed classes
None.

Reading material
- Obligatory literature
- Literature developed by the Department
  The slides of the seminars will be available on-line on the website of the Department of Immunology and Biotechnology (www.immbio.hu).
- Notes
- Recommended literature

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 (ethiology, diagnosis, symptoms).
4  Cells in the pathomechanism of RA 1. T cells.
5  Cells in the pathomechanism of RA 2. B cells.
6  Cells in the pathomechanism of RA 3. Regulatory T cells.
7  Cells in the pathomechanism of RA 4. NKT cells.
8  Cytokine regulators of RA 1. The classical Th1/Th2 paradigm.
9  Cytokine regulators of RA 1. IL-17 and other „novel” cytokines (IL-21, IL-23, IL-27).
10 Animal models of RA 2. Induced models (proteoglycan-, collagen-, adjuvant-induced arthritis).
11 Animal models of RA 3. Spontaneous models. (IL-1R antagonist knock-out-, SKG mice)
12 Modern therapeutical approaches of RA.

Exam topics/questions
None.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Boldizsár Ferenc (UUL4TB), Dr. Engelmann Péter András (B9Y1R8), Dr. Németh Péter (XLESG4)
OAF-SFO-T  SPECIALTIES IN OTOLARYNGOLOGY

Course director:  DR. JÓZSEF PYTEL, professor emeritus
Department of Oto-rhino-laryngology  pytelj@t-online.hu

2 credit  midsemester grade  Optional subject  autumn semester  recommended semester: 7
Number of hours/semester:  12 lectures + 12 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.):  1 – 30  Prerequisites:  none

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
Specialties will be presented, which could not be involved in the regular course. The connection of the cultural civilization and the ORL Topics:
Laryngeal cancer and the literature (M. Babits) 2 hours
Laryngeal Cancer and the Music (Puccini) 2 hours
Laryngeal cancer and the literature (Frederic the III) 2 hours
Rehabilitation after total laryngectomy 2 hours
Habilitation of deaf children 2 hours

Conditions for acceptance of the semester
Only two missing lectures are accepted

Mid-term exams
There are no possibilities

Making up for missed classes
There are no possibilities

Reading material
-  Obligatory literature
-  Literature developed by the Department
-  Notes
  www.peditop.com
  www.meditopEU.com
-  Recommended literature

Lectures
1  Laryngeal cancer and the literature
   Dr. Pytel József
2  Laryngeal cancer and the literature (M. Babits)
   Dr. Pytel József
3  Laryngeal cancer and the music
   Dr. Pytel József
4  Laryngeal cancer and the Music (Puccini)
   Dr. Pytel József
5  Laryngeal cancer and the history
   Dr. Pytel József
6  Laryngeal cancer and the history (Frederic the III)
   Dr. Pytel József
7  Rehabilitation after laryngectomy
   Dr. Pytel József
8  Rehabilitation after laryngectomy
   Dr. Pytel József
9  Habilitation of deaf children
   Dr. Pytel József
10  Habilitation of deaf children
   Dr. Pytel József
11  Esthetic and plastic surgery
   Dr. Pytel József
12 Esthetic and plastic surgery
   Dr. Pytel József

Practices

1 Drilling on bone
2 Drilling on egg
3 Incisions and Suture
4 Oval Incision and suture (microscope)
5 Simple rotated flap plastic
6 Double rotated flap plastic
7 Z, Y, W-plastiy
8 Removal of foreign body (model)
9 Ligature (model)
10 Ligature in pharynx (model)
11 EMS and Laterofixation of Vocal Cords (pig larynx)
12 Preparation of n. recurrens, Conicotomy, Tracheotomy (pig larynx)

Seminars

Exam topics/questions

It is the same as the list of the lectures.
Laryngeal cancer and the literature (M. Babits)
Laryngeal Cancer and the Music (Puccini)
Laryngeal cancer and the literature (Frederic the III)
Rehabilitation after total laryngectomy
Habilitation of deaf children

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pytel József (OF4RWO)
OAF-SI1-T  Surgical Skills 1

Course director:  Dr. Balázs Zoltán Gasz, associate professor
Department of Surgical Research and Techniques • balazs.gasz@gmail.com

1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 7
Number of hours/semester:  0 lectures + 12 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 60  Prerequisites:  OAP-MUA-T completed

Topic
The aim of the subject is to practice the basic surgical techniques, to present hygienic approach, which attainments are indispensable for clinical doctors working in the manual field of medicine. This subject provides the basics about special behaviour in the operating theatre, preparation of the patient and surgical team before operation, surgical tools and instruments, wound management, laparoscopic instruments and techniques.

Conditions for acceptance of the semester
1.  OOP-MUA-T - completed
2.  -
3.  -

Mid-term exams
http://aok.pte.hu/hu/egyseg/oktatasianyagok/130

Making up for missed classes
Attendance is obligatory at every practice

Reading material
-  Obligatory literature
-  Literature developed by the Department
  http://aok.pte.hu/hu/egyseg/oktatasianyagok/130
-  Notes
-  Recommended literature

Lectures
Practices
1  The basic rules of the behavior in the operating theatre; scrubbing-gowning-gloving, preparation of the operation area (desinfection, isolation)
2  Demonstration of the basic surgical tools, practicing their use
3  Knot tying
4  Knot tying
5  Sutures and suture materials, suture removal
6  Practicing of basic sutures on skill models
7  Practicing of basic sutures on skill models
8  Practicing of basic sutures on skill models
9  Basics of laparoscopic surgery: demonstration of laparoscopic surgical tools, training of eye-hand coordination
10  Laparoscopic training in boxtrainer
11  Laparoscopic training in boxtrainer
12  Practical exam, skill assessment

Seminars
Exam topics/questions
http://aok.pte.hu/hu/egyseg/oktatasianyagok/130

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Bognár Laura (XVGSYL), Dr. Gasz Balázs Zoltán (BI3N05), Dr. Hardi Péter (AKE71H), Dr. Jancsó Gábor (V382Q9), Dr. Nagy Tibor Aladár (VREE09), Dr. Petrovics Laura (MNZPKC), Dr. Takács Ildikó (V6M8LJ)
OAF-SKF-T  CASES OF SUCCESS AND FAILURE IN MODERN DRUG DISCOVERY AND DEVELOPMENT

Course director: DR. KATA BÖLCSKEI, assistant professor
Department of Pharmacology and Pharmacotherapy • katal.boleci@aok.pte.hu

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 7
Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 3 – 24  Prerequisites: OAP-GT1-T parallel

Topic
The course offers an insight into the strategies and technologies of modern drug discovery and development and recounts the birth of noteworthy, breakthrough drugs of recent years. Several prominent cases of failed drug candidates will be analysed, as well. The course concludes with discussing current challenges and future prospects of drug discovery.

Conditions for acceptance of the semester
Maximum of 15% absence allowed

Mid-term exams
Students are graded by a written test at the end of the course which can be waived for those who volunteer to prepare an oral or written presentation of a case not covered by the seminars.

Making up for missed classes
None.

Reading material
- Obligatory literature
  None.
- Literature developed by the Department
  Lecture slides will be handed out in pdf form.
- Notes
  None.
- Recommended literature
  None.

Lectures

Practices

Seminars
1  Practical aspects of drug development from drug discovery to clinical trials
2  Practical aspects of drug development from drug discovery to clinical trials
3  Selected cases of cardiovascular and lipid-lowering drug development
4  Selected cases of antidiabetic drug development
5  Selected cases of central nervous system drug development
6  Selected cases of central nervous system drug development
7  Selected cases of anticancer drug development
8  Selected cases of immunomodulatory drug development
9  Selected cases of antimicrobial drug development
10 Selected cases of antimicrobial drug development
11 Lessons learnt from cases of early and late phase failures of promising drug candidates and recently withdrawn drugs
12 Promising drug candidates of the near future with a novel mechanism of action and future perspectives of drug discovery

Exam topics/questions
1. Practical aspects of drug development from drug discovery to clinical trials
2. Selected cases of cardiovascular and lipid-lowering drug development
3. Selected cases of antidiabetic drug development
4. Selected cases of central nervous system drug development
5. Selected cases of antitumour drug development
6. Selected cases of immunomodulatory drug development
7. Selected cases of antimicrobial drug development
8. Lessons learnt from cases of early and late phase failures of promising drug candidates and recently withdrawn drugs

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Bölcskei Kata (I3Z480)
THE FATE OF DRUG

Course director: Dr. ORSOLYA RIDEG, research associate professor
Department of Pharmaceutical Biotechnology • ridegorsi@yahoo.com

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 7

Number of hours/semester: 14 lectures + 0 practices + 0 seminars = total of 14 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: OAP-GT1-T completed

Topic
By the end of the course, the students get an outlook on the history and basics of genetics and pharmacogenetics. They get an outlook on the newest methodical aspects of genetic variants and enzyme function. By discussing certain clinical cases (mostly clinical cases from the central nervous system, pulmonology, and hepatology) students get an outlook on the importance and complexity of the area.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
One test at the end of the course.

Making up for missed classes
No option for supplement.

Reading material
- Obligatory literature
- Literature developed by the Department
  Educational material in PDF
- Notes
- Recommended literature
  Genetic Variation: Methods and Protocols; Barnes Michael R.; Springer
  Concepts and tools in Pharmacogenomics - FDA
  Principles of Pharmacogenetics and Pharmacogenomics; Rus B. Altman; Cambridge

Lectures
1 Basics on Genetics and Pharmacology, History of Pharmacogenetics
   Dr. Rideg Orsolya
2 Basics on Genetics and Pharmacology, History of Pharmacogenetics
   Dr. Rideg Orsolya
3 Fate of Drugs-CYP metabolization (classification, genetic background, function)
   Dr. Rideg Orsolya
4 Fate of Drugs-CYP metabolization (classification, genetic background, function)
   Dr. Rideg Orsolya
5 Expression and regulation of xenobiotic Metabolizing Cytochrome P450 Enzymes in the Liver
   Dr. Rideg Orsolya
6 Expression and regulation of xenobiotic Metabolizing Cytochrome P450 Enzymes in the Liver (case study)
   Dr. Rideg Orsolya
7 Expression and regulation of xenobiotic Metabolizing Cytochrome P450 Enzymes in the Central Nervus System
   Dr. Rideg Orsolya
8 Expression and regulation of xenobiotic Metabolizing Cytochrome P450 Enzymes in the Central Nervus System (case study)
   Dr. Rideg Orsolya
9 Expression and regulation of xenobiotic Metabolizing Cytochrome P450 Enzymes in the Lung
   Dr. Rideg Orsolya
10 Expression and regulation of xenobiotic Metabolizing Cytochrome P450 Enzymes in the Lung (case study)
   Dr. Rideg Orsolya
11 Role of CYP gene polymorphisms’ in neurological and cardiological diseases.
   Dr. Rideg Orsolya
12 Methodical aspects of genetic variants
   Dr. Rideg Orsolya
13 Methodical aspects of enzyme function.
   Dr. Rideg Orsolya
14 Test
Dr. Rideg Orsolya

Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
OAE-AE2-T  ANAESTHESIA 2

Course director: DR. ISTVÁN BÁTAI, associate professor
Department of Anaesthesiology and Intensive Therapy • ibatai@gmail.com

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

Number of hours/semester: 10 lectures + 0 practices + 0 seminars = total of 10 hours
Course headcount limitations (min.-max.): 1 – 50
Prerequisites: OAE-ZI1-T 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.

Mid-term exams
1 exam

Making up for missed classes
None

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture notes.
- Notes
- Recommended literature

Lectures
1 Anaesthesia for acute surgery
   Dr. Bátaí István
2 Thoracic anaesthesia
   Dr. Bátaí István
3 Anaesthesia for renal and pancreas surgery
   Dr. Bátaí István
4 Vascular anaesthesia
   Dr. Bátaí István
5 Anaesthesia for neurosurgery
   Dr. Bátaí István
6 Obstetric anaesthesia
   Dr. Bátaí István
7 Pediatric anaesthesia
   Dr. Kövesi Tamás
8 Anaesthesia for urological procedures
   Dr. Bátaí István
9 Anaesthesia for day surgery
   Dr. Bátaí István
10 Anaesthesia outside the operating theatre
    Dr. Bátaí István

Practices
Seminars
Exam topics/questions
Lectures
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject Participants
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

Mid-term exams

test on the last lecture

Making up for missed classes

Personal consultation

Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**


**Lectures**

1. Physiology of sleep (from clinical point of view)
   Dr. Faludi Béla
2. Sleep examination methods
   Dr. Faludi Béla
3. Insomnias
   Dr. Faludi Béla
   Dr. Faludi Béla
5. Obstructive sleep apnoea syndrome, Hypertension, stroke and OSAS.
   Dr. Faludi Béla
6. Cardiological consequences of OSAS. Therapy of OSAS
   Dr. Faludi Béla
7. Sleep related movement disorders, Restless leg sy.
   Dr. Szakács Zoltán
8. Narcolepsy
   Dr. Szakács Zoltán
9. Parasomnias
   Dr. Faludi Béla
10. Circadian sleep disorders, Dementias and sleep.
    Dr. Faludi Béla
11. Noninvasive ventilation in sleep medicine, OSAS and epilepsy.
    Dr. Faludi Béla
12. Occupational medical aspects of sleep medicine.
    Dr. Faludi Béla
Practices

Seminars

Exam topics/questions

http://neurology.pote.hu

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Faludi Béla (FCGCJ5), Dr. Szakács Zoltán (GSKP14)
Topic
This course gives support and acknowledgement for students performing documented and successful supervised teaching activities and taking an active part in organizing courses. The subjects can be taken up in eight semesters (in a total value of 16 credits).

Conditions for acceptance of the semester
Students have to register every semester as demonstrators, should provide proof of previous demonstrator activity, and the semester will be signed on the basis of at least 24 hours of teaching or organizatory activity. The grades will be given according to the Code of Demonstrators with additional requirements, that you can reach using the following links: Code of Demonstrator Students:
https://docs.google.com/document/d/1xkkyeRdZzcDphmqWEkpON0SQf34MpBBJqogG09fd8Rw/edit?usp=sharing

Faculty Home Page of the Circle of Demonstrator Students (DDK):

Mid-term exams
At least two midsemester tests should be successfully completed to pass.

Making up for missed classes
There are no absences accepted from the 24 hours demonstrator activity.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
Practices
Seminars

Exam topics/questions
The topics of the tests depend on the specific course of the demonstrator activity.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Czopf László József (BAVD1M), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Sebők Judit (GLM10L), Dr. Tamás Andrea (F7QM8G), Dr. Ujvári Balázs (EN1LY9)
OAE-DRO-T  DRUG AND SUBSTANCE ABUSE

Course director: DR. ERIKA SÁNTICS-PINTÉR, professor
Department of Pharmacology and Pharmacotherapy • erika.pinter@aok.pte.hu

1 credit • midterm grade • Elective subject • spring semester • recommended semester: 8
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 30
Prerequisites: OAP-GT2-T parallel

Topic

The course aimed to provide general terms of drug and substance abuse and present its physiological and biochemical background. We are going to review systematically the most important pharmacological features of the drugs of abuse, the symptoms, dangers and possible treatments of abuse. The drugs are discussed in the following sections: opioids, anxiolytics, sedatohypnotics, inhalants, alcohol, psychomotor stimulants (amphetamine and derivates, cocain, coffeein, nicotin), psychedelics and hallucinogens (LSD, mescalin, phencyclidin), cannabis. After the discussion of pharmacology the participants can hear about the practical problems of drug abuse. At the end of the course the students should present 5-10 minute ppt presentations from different abuse-related topics.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

There is no possibility.

Making up for missed classes

There is no possibility.

Reading material

- Obligatory literature
- Literature developed by the Department
  Uploaded on the Neptun
- Notes
- Recommended literature

Lectures

1 General terms of drug abuse, definition of dependence and tolerance
   Sánticsné Dr. Pintér Erika
2 General terms of drug abuse, definition of dependence and tolerance
   Sánticsné Dr. Pintér Erika
3 Opioid abuse
   Dr. Horváth Ádám István
4 Abuse of anxiolytics and sedatohypnotics. Inhalants.
   Dr. Horváth Ádám István
5 Alcohol abuse
   Dr. Horváth Ádám István
6 Abuse of psychomotor stimulants
   Dr. Horváth Ádám István
7 Psychedelics, hallucinogens, cannabis
   Sánticsné Dr. Pintér Erika
8 Designer drugs
   Sánticsné Dr. Pintér Erika
9 Practical problems of drug abuse
   Dr. Szemelyácz János
10 Practical problems of drug abuse
   Dr. Szemelyácz János
11 Presentations of students
   Sánticsné Dr. Pintér Erika
12 Written exam
   Sánticsné Dr. Pintér Erika
Practices

Seminars

Exam topics/questions

1. General terms of drug abuse, definition of dependence and tolerance
2. Opioid abuse
3. Abuse of anxiolytics and sedativ hypnotics. Inhalants.
4. Alcohol abuse
5. Abuse of psychomotor stimulants
6. Psychedelics, hallucinogens, cannabis
7. Designer drugs

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Course director: DR. GÁBOR JANCSÓ, associate professor
Department of Surgical Research and Techniques • jancsogabor@hotmail.com

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

Course description: The subject can only be registered in case of a PASSED and valid health aptitude test!

Number of hours/semester: 0 lectures + 12 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 12
Prerequisites: OAP-MUA-T completed

We advise this course to students interested in surgical lines, to develop their technical skills in the field of vascular surgery. The course is suggested to students interested in surgery, vascular surgery, traumatology, urology, and cardiac surgery. In the course the students learn about the instruments and basic techniques of vascular surgery, pre-and postoperative treatments of vascular surgery patients. The different arterial suture techniques can be practiced on skill models and preparatums: opening and closing of cross and lengthwise arteriotomies, arterial patch plastics, and arterial anastomosis will be prepared. The endovascular techniques will be introduced. During the clinical operating room practices students see and take part in vascular reconstruction operations as assistants.

Conditions for acceptance of the semester
According to the Code of Studies.

Mid-term exams
there is no mid-term examination

Making up for missed classes
Attendance is obligatory at every practice.

Reading material

- Obligatory literature
- Literature developed by the Department
  http://aok.pte.hu/en/egyseg/oktatasianyagok/130
- Notes
- Recommended literature

Lectures
Practices
1 Instruments of vascular surgery, arterial suture techniques on models
2 Instruments of vascular surgery, arterial suture techniques on models
3 Cross and lengthwise arteriotomies, closing with direct suture on models
4 Cross and lengthwise arteriotomies, closing with direct suture on models
5 Lengthwise arteriotomies with patch plastic
6 Lengthwise arteriotomies with patch plastic
7 Preparing end-to-side arterial anastomosis on models
8 Preparing end-to-side arterial anastomosis on models
9 Endovascular techniques (balloon dilatation, stent implantation)
10 Endovascular techniques (balloon dilatation, stent implantation)
11 Clinical practice in operation theatre: arterial reconstruction surgery
12 Clinical practice in operation theatre: arterial reconstruction surgery

Seminars
Exam topics/questions
http://aok.pte.hu/en/egyseg/oktatasianyagok/130

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Bognár Laura (XVGSYL), Dr. Gasz Balázs Zoltán (B13N05), Dr. Hardi Péter (AKE71H), Dr. Jancsó Gábor (V382Q9), Dr. Nagy Tibor Aladár (VREE09), Dr. Petrovics Laura (MNZPKC), Dr. Takács Ildikó (V6M8LJ)
PAIN AND ANALGESICS

Course director: Dr. GÁBOR ISTVÁN PETHÓ, professor
Department of Pharmacology and Pharmacotherapy • gabor.petho@aok.pte.hu

1 credit • midsemester grade • Elective subject • spring semester • recommended semester: 8
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 50
Prerequisites: OAP-GT1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

The aim of the course is to give an integrative overview on the physiological, pathophysiological and pharmacological aspects of pain. Major tasks are 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 prepare for the exams in Pharmacology 2 and 3.

**Conditions for acceptance of the semester**

Maximum of 25% absence allowed

**Mid-term exams**

After the last lecture of the course, a written test is taken in the instruction period to obtain a mid-semester grade. Those who fail or do not write this test have a second chance until end of Week 12 of the instruction period to improve in form of an oral conversation. Upon failing or missing there is one more oral chance to obtain a mid-semester grade during the first two weeks of the exam period.

**Making up for missed classes**

There is no way to make up for missed lectures.

**Reading material**

- **Obligatory literature**
  None.
- **Literature developed by the Department**
  The material of the lectures is available in PDF format in the Neptun.
- **Notes**
  None.
- **Recommended literature**
  None.

**Lectures**

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

Exam topics/questions

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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-GCT-T  Practical Ultrasound and CT Diagnostics

Course director: DR. ISTVÁN BATTYÁNI, associate professor
Department of Radiology • battyani.istvan@pte.hu; batyo@chello.hu

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

Number of hours/semester: 0 lectures + 24 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 15
Prerequisites: OAA-BI2-T completed + OAK-KRA-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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)!

Mid-term exams
No possibility for the replacement.

Making up for missed classes
No possibility for the replacement.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  In English:
  -  G. M. Roberts, J. P. Hughes, and M. D. Hourihan: Clinical Radiology for Medical Students

Lectures
Practices
1  Physics and technical applications of ultrasonography. New development.
2  Ultrasound terminology and US appearance of different pathologic conditions.
3  Liver and biliary ultrasound imaging.
4  Liver and biliary ultrasound imaging in practice.
5  Spleen, pancreas and GI tract US imaging.
6  Spleen, pancreas and GI tract US imaging in practice.
7  Genitourinary system, prostate, adrenal gland US imaging.
8  Genitourinary system, prostate, adrenal gland US imaging in practice.
9  Retroperitoneum, large vessels, peritoneum US imaging.
10 Retroperitoneum, large vessels, peritoneum US imaging in practice.
11 Ultrasound contrast materials.
12 Ultrasound contrast material in practice.
13 Soft tissue, lymphnode, thyroid US imaging.
14 Soft tissue, lymphnode, thyroid US imaging in practice.
15 Diseases of peripheral vessels and their ultrasound imaging.
16 Diseases of peripheral vessels and their ultrasound imaging in practice.
17 Abdominal CT diagnostics.
18 Abdominal CT diagnostics in practice.
19 Chest CT diagnostics.
20 Chest CT diagnostics in practice.
21 Ultrasound magnetic navigation.
22 Ultrasound practice.
23 Ultrasound practice.
24 Practical exam with test.

Seminars

Exam topics/questions

Practical exam with test.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Battyáni István (A0W XF5), Dr. Faluhelyi Nándor (ABWPWC), Dr. Farkas Péter István (SWOCQK), Dr. Giyab Omar (HP1ZK9), Dr. Járay Ákos (FE5S29), Dr. Szukits Sándor (VNUBXK)
OAE-GIO-T Angiology

Course director: **DR. GÁBOR RÓBERT KÉSMÁRKY**, associate professor
1st Department of Internal Medicine • kesmarky.gabor@pte.hu

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

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 3 – 100

Prerequisites: OAP-BPR-T completed + OAP-KO2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

This course aims at increasing the awareness and the knowledge on peripheral vascular diseases. Preventive approach has almost been neglected in this field. Life-threatening acute disorders (acute critical limb ischemia, chronic critical limb ischemia, rupture of an aneurysm, dissection), chronic arterial diseases (peripheral arterial occlusive disease, diabetic foot syndrome, Raynaud’s phenomenon), acute and chronic venous problems, lymphatic disorders, congenital malformations, and vasculitis are addressed.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

Oral exam at the Division of Angiology.

**Making up for missed classes**

Attending the outpatient clinic of angiology.

**Reading material**

- **Obligatory literature**
  
- **Literature developed by the Department**
  Slides of the course will be available in the homepage of the institute: [http://aok.pte.hu/en/egyseg/oktatasianyagok/260](http://aok.pte.hu/en/egyseg/oktatasianyagok/260)

- **Notes**

- **Recommended literature**

**Lectures**

1. Epidemiology, risk factors of peripheral vascular diseases. Physical examination, diagnostic procedures
   Dr. Késmárky Gábor Róbert
2. Raynaud’s disease. Thoracic outlet syndrome
   Dr. Késmárky Gábor Róbert
3. Atherosclerotic arterial diseases. Buerger’s disease
   Dr. Koltai Katalin
4. Life-threatening artery diseases 1: Acute aortic syndromes. Aneurysms
   Dr. Késmárky Gábor Róbert
5. Diabetic foot syndrome
   Dr. Bíró Katalin
6. Life-threatening artery diseases 2: Acute and chronic critical limb ischaemia, WIFI classification
   Dr. Késmárky Gábor Róbert
7. Mid-semester-grade, 1st test (10 min). Case presentation (imaging, ultrasound)
   Dr. Fendrik Krisztina
8. Vascular malformations, vascular tumors
   Dr. Koltai Katalin
9  Acute venous diseases
    Dr. Koltai Katalin

10 Chronic venous diseases
    Dr. Bíró Katalin

11 Vasculitis
    Dr. Temesné Dr. Endrei Dóra Ilona

12 Lymphoedema (15 min). Mid-semester-grade, 2nd test (30 min)
    Dr. Késmárky Gábor Róbert

Practices

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-GLM-T  PRACTICES IN LABORATORY MEDICINE

Course director: DR. ATTILA JÁNOS MISETA, professor
Institute of Laboratory Medicine • rector@pte.hu

1 credit • midsemester grade • Elective subject • spring semester • recommended semester: 8
Number of hours/semester: 0 lectures + 12 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 30  Prerequisites: OAK-KBK-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Maximum of 25 % absence allowed

Mid-term exams

Written examination: test questions, based on the practices

Making up for missed classes

Not possible

Reading material

- Obligatory literature
- Literature developed by the Department
  Written material related to the practices will be handed to the students by the teachers.
- Notes
- Recommended literature

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

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Faust Zsuzsanna (G9WRZD), Dr. Gombos Katalin (O840HO), Dr. Horváth-S zalai Zoltán (DNFPB6), Dr. Kátai Emese (G6PQ5N), Dr. Kiss Gabriella (IZXVZE), Dr. Nagy Tamás II (CAILG1), Dr. Péterfalvi Ágnes (I1DCTB)
OAE-GNU-T  CHILD NEUROLOGY
Course director: DR. KATALIN OHMACHT-HOLLÓDY, associate professor
Department of Paediatrics • hollody.katalin@pte.hu

2 credit • midsemester grade • Elective subject • spring semester • recommended semester: 8
Number of hours/semester: 20 lectures • 0 practices • 0 seminars = total of 20 hours
Course headcount limitations (min.-max.): 5 – 25
Prerequisites: OAA-EL2-T completed + OAA-NEA-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 is compulsory, it will be checked regularly. The maximal permitted number of absences is 2, independently of the reason.

Mid-term exams
Interactive participation is necessary.

Making up for missed classes
Not possible

Reading material
- Obligatory literature
- Literature developed by the Department
  slides
- Notes
- Recommended literature

Lectures
1  Essentials of Paediatric Neurology  
   Dr. Ohmachtné Dr. Hollódy Katalin
2  Special history taking in child neurology  
   Dr. Ohmachtné Dr. Hollódy Katalin
3  The role of inspection in child neurology  
   Dr. Ohmachtné Dr. Hollódy Katalin
4  Neurological examination of infants and children  
   Dr. Ohmachtné Dr. Hollódy Katalin
5  Normal and abnormal development of the newborn and young infant  
   Dr. Ohmachtné Dr. Hollódy Katalin
6  Neurological examination in and beyond the newborn period  
   Dr. Ohmachtné Dr. Hollódy Katalin
7  Seizures in newborns, infants, children and adolescents  
   Dr. Ohmachtné Dr. Hollódy Katalin
8  Video-EEG demonstration of epileptic seizures  
   Dr. Ohmachtné Dr. Hollódy Katalin
9  Paroxysmal disorders other than epilepsy in childhood  
   Dr. Ohmachtné Dr. Hollódy Katalin
10 Video demonstration of paroxysmal disorders other than epilepsy in childhood
   Dr. Ohmachtné Dr. Hollódy Katalin
11 Neurosurgery in the infancy and childhood
   Dr. Dóczi Tamás
12 Signs of increased intracranial pressure and its treatment
   Dr. Dóczi Tamás
13 Central nervous system injuries in childhood
   Dr. Büki András
14 Treatment of children with head traumas
   Dr. Büki András
15 Tumors of the central nervous system in childhood
   Dr. Kajtár Pál
16 Treatment and follow-up of children with CNS tumors
   Dr. Kajtár Pál
17 Neuromuscular disorders in childhood
   Dr. Ohmachtné Dr. Hollódy Katalin
18 Treatment and follow-up of children with neuromuscular disorders
   Dr. Ohmachtné Dr. Hollódy Katalin
19 Movement disorders in childhood
   Dr. Ohmachtné Dr. Hollódy Katalin
20 Video-demonstration of different benign and not benign movements in childhood
   Dr. Ohmachtné Dr. Hollódy Katalin

Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Dr. Büki András (JI5FMA), Dr. Dóczi Tamás (OGX96Q), Dr. Kajtár Pál (HVYPKJ), Dr. Ohmachtné Dr. Hollódy Katalin (EC7T1L)
OAE-GOR-T  MEDICAL COMMUNICATION IN PRACTICE

Dr. Ágnes Erika Csikós, associate professor
Department of Primary Health Care • csikos.agnes@pte.hu

2 credit • midterm grade • Elective subject • spring semester • recommended semester: 8

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

Course headcount limitations (min.-max.): 5 – 60

Prerequisites: OAP-BPR-T completed

Topic

The goal of the course is to enable medical students to practice their medical communication skills in various doctor-patient situations. The course initially demonstrates the basic principles of medical communication and then provides students with opportunities to put these skills into practice. The acquisition of effective medical communication skills is made possible by practicing fictive patient-doctor consultations, using the theoretical background of the Calgary-Cambridge model as a guide. It is our goal for the students to develop a patient-centered attitude and to be consciously aware of applying the elements of effective medical communication.

In the second part of the course, it is our goal to acquaint the medical students with the special characteristics of communicating with patients from different social, cultural, ethnic and demographic backgrounds. We also aim to encourage students to put their new knowledge into practice.

The curriculum of the course was designed with the collaboration of the following Institutes: Department of Behavioural Sciences, the Department of Languages for Specific Purposes, the Medical Simulation Center and the Institute of Primary Health Care. The course is made up of 24 classes. In the first part of the course students learn the basic principles of medical communication. Then, students may choose from the following topics:


Conditions for acceptance of the semester

Theory: Medical Communication - Notes for medical students
Active participation in class
Mid-term exams
Written exam/test
Making up for missed classes
Reading material
- Obligatory literature
- Literature developed by the Department
  Medical Communication- Notes for medical students
- Notes
- Recommended literature

Lectures
Practices
Seminars


13. Dealing with patients’ and family members’ emotional reactions (angry, anxious, depressed…etc patients). Empathic communication.
    dr. Tiringer István, dr. Hartung István, dr. Heim Szilvia, dr. Kránicz Rita

14. Dealing with patients’ and family members’ emotional reactions (angry, anxious, depressed…etc patients). Empathic communication.
    dr. Tiringer István, dr. Hartung István, dr. Heim Szilvia, dr. Kránicz Rita


17. Patient education, management of patients with chronic diseases. Systems for informing patients.
    dr. Rinfel József, dr. Hartung István, dr. Hild Gabriella

18. Patient education, management of patients with chronic diseases. Systems for informing patients.
    dr. Rinfel József, dr. Hartung István, dr. Hild Gabriella

19. Cultural, social, ethnic and demographic differences in communication
20 Cultural, social, ethnic and demographic differences in communication

21 21st century challenges in medical communication. Digital/Online communication

22 21st century challenges in medical communication. Digital/Online communication

23 Intercultural competencies. Working in a multicultural environment.

24 Intercultural competencies. Working in a multicultural environment.

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Busa Csilla (I79QX9), Dr. Bellyeiné Dr. Pozsgai Éva (K15WF2), Dr. Birkás Béla (S7SEOS), Dr. Csikós Ágnes Erika (W4RUXY), Dr. Faubl Nóra Klára (HDSU4W), Dr. Frank Nóra (CWBSBU), Dr. Füzesi Zsuzsanna (QSMBNY), Dr. Heim Szilvia (PKMC6W), Dr. Hild Gabriella (HILSWV), Dr. Kanizsainé Kránitz Rita (PSGNUM), Dr. Kürthy Dániel (SCQJ67), Dr. Marek Erika Mária (R9BVBB), Dr. Németh Timea (X8VRGN), Dr. Rinfel József (GSHO5Z), Dr. Ruzsa Beáta (WBE3HQ), Dr. Somogyi Lászlóné (Dr. Végh Mária) (MLL7EL), Dr. Tiringer István (MSUBAC), Dr. Varga Péter (MJFBXQ), Dr. Várnai Réka (AC8OH3), Gács Boróka (WU93EU), Halász Renáta (VGSSXR), Hambuchné Dr. Kőhalmi Anikó (VZFH04), Hartung István (N2UTC0), Orbánné Dr. Radványi Ildikó (OVQLDM), Szántóné Dr. Csongor Alexandra (UDKY0J)
OAE-IDR-T  CLINICAL APPLICATION OF ISOTOPDIAGNOSTIC AND RADIOThERAPEUTIC METHODS

Course director: DR. KATALIN BÓDIS-ZÁMBÓ, professor
Department of Nuclear Medicine • zambo.katalin@pte.hu

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

Number of hours/semester: 16 lectures + 8 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 60
Prerequisites: OAP-BPR-T completed + OAP-KO2-T completed + OAP-PA2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
A detailed presentation will be given of modern 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
Maximum of 15 % absence allowed
Mid-term exams

midsemester grade

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
- Obligatory literature
- Literature developed by the Department
  The presentations are on the website of the Medical Faculty Dept. of Nuclear Medicine in the „Educational materials”.
- Notes
- Recommended literature
  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. Diagnostic and therapeutic methods of thyroid and parathyroid glands
   Dr. Bán Zsuzsanna
2. Diagnostic and therapeutic methods of thyroid and parathyroid glands
   Dr. Bán Zsuzsanna
3. Diagnostic methods of respiratory system and inflammation
   Dr. Bódisné Dr. Zámbó Katalin
4. Diagnostic methods of respiratory system and inflammation
   Dr. Bódisné Dr. Zámbó Katalin
5. Diagnostic and therapeutic methods of bone and joint system
   Dr. Schmidt Erzsébet
6. Diagnostic and therapeutic methods of bone and joint system
   Dr. Schmidt Erzsébet
7. Diagnostic methods of urogenital and gastrointestinal systems
   Dr. Bódisné Dr. Zámbó Katalin
8. Diagnostic methods of urogenital and gastrointestinal systems
   Dr. Bódisné Dr. Zámbó Katalin
9. Nuclear cardiology
   Dr. Bódisné Dr. Zámbó Katalin
10. Nuclear cardiology
    Dr. Bódisné Dr. Zámbó Katalin
11. Nuclear oncology, aspecific methods
    Dr. Schmidt Erzsébet
12 Nuclear oncology, aspecific methods
   Dr. Schmidt Erzsébet
13 Nuclear oncology, specific methods and therapy
   Dr. Schmidt Erzsébet
14 Nuclear oncology, specific methods and therapy
   Dr. Schmidt Erzsébet
15 Diagnostic methods of central nervous system
   Dr. Molnárné Dr. Szabó Zsuzsanna
16 Diagnostic methods of central nervous system
   Dr. Molnárné Dr. Szabó Zsuzsanna

Practices
   1 Presentation of equipment 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
Multiple choice test.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Bán Zsuzsanna (QW6VD3), Dr. Bódisné Dr. Zámbó Katalin (E883Q7), Dr. Molnárné Dr. Szabó Zsuzsanna (O3I4FO), Dr. Schmidt Erzsébet (FZ2FW2)
OAE-KB2-T  CLINICAL BLOCK-PRACTICE 2

Course director: 
DR. KÁLMÁN TÓTH, professor
1st Department of Internal Medicine • toth.kalman@pte.hu

2 credit • midterm grade • Elective subject • both semesters • recommended semester: 8

Number of hours/semester: 
0 lectures + 60 practices + 0 seminars = total of 60 hours

Course headcount limitations (min.-max.): 1 – 100  Prerequisites: OAE-KB1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The subject provides possibilities for clinical practice - bedside practice and practice at outpatient care – between semester 7 and 12 for students of General Medicine with the involvement of Teaching Hospitals and University Departments during Clinical module, in line with Hungarian and international trends and expectations.

In connection with the studies a two-week practice can be done during the instruction period of each semester except for its last week, maximum four times (Clinical Block-Practice I-IV). The practice can be done at the same location or at two different locations for each week within a semester. If someone is doing the course several times (Clinical Block-Practice I, II, III, IV.), it is up to the students if they choose a different location or the same location from previous semesters. During the practice, besides taking of case history and physical examination of the patient and analyzing the results of special examinations, students participate in medical meetings, ward-rounds, consultations about patients and they also assist in diagnostic, operative, interventional procedures. Location for the practice can be chosen based on the students’ preference and on the capacity of the accepting institutions for the given period. The practice can be done any time during instruction period except for its last week, but not in the examination period. The period of the practice can include the period of spring holiday. During rotational year the practice can be done any time, there is no distinction of instruction period and exam period.

The amount of absences in other subjects should be reduced by maximum 14,3% each semester on the basis of the Certificate of Fulfillment of Clinical Practice Block relating to the given period. The dates of the practice should be chosen in a way that in the case of not evenly distributed subjects absences due to the Clinical Block-Practice may not exceed the maximum allowed as mentioned above.

The practice can be done in divisions and laboratories of the following fields: surgery, vascular surgery, thoracic surgery, cardiac surgery, neurosurgery, traumatology, transplant surgery, intensive therapy, anaesthesiology, emergency department, ophthalmology, obstetrics and gynecology, urology, otolaryngology, orthopedics, pediatric surgery, dermatology, oral surgery, angiography, metabolism, internal medicine, diabetology, endocrinology, immunology, cardiology, nephrology, oncology, tropical diseases, geriatrics, infectology, gastroenterology, hematology, radiology, diagnostic nuclear medicine, neurology, psychiatry, pediatrics, rheumatology, laboratory medicine, microbiology, pathology, laboratory of genetics, family medicine, laboratory genetics. Based on individual validation further areas can also be targeted.

At least 30 hours and 4 days of practice during usual working hours should be certified in order to have an approved practice. Night duties, on site public/bank holidays, scientific work cannot be accepted as part of the practice.

Students must submit an Acceptance Letter to the course leader until the end of the 4th week of the instruction period the latest (also in the case of rotational year students), and 1 week before the planned practice the latest (office: Ms. Marianna Pesti, JPKT, 1st floor, C wing, Door 110.).

Upon successful completion of practice, certificate signed and stamped by the practice leader must be obtained from the head of the department/ward/unit with his legible name on the last day of practice the latest with the signature of the institution. The certificate should be uploaded to the NEPTUN MeetStreet site of the subject in a pdf format together with the case studies directly after the practice, but until Friday on the last but one week of the instruction period the latest.

If needed, the certificate must be sent to all of the other subject leaders electronically by the last Wednesday of the instruction period the latest for the appropriate correction of absences.

Practice can be spent in a foreign country, at an accredited medicine ward in a University Hospital, in a Teaching Hospital or County Hospital with 24-hour patient admission. The student is required to speak the language of the host country or have a B2 English language certificate.

During practice the rules concerning medical confidentiality, the rules and regulations of the University of Pécs, data protection, fire and accident prevention, occupational safety, institutional secrecy and job orders shall be observed.

Conditions for acceptance of the semester

Maximum of 15 % absence allowed

Mid-term exams

At least 30 hours/week and 4 days/week of practice should be certified in order to have an approved practice.

Making up for missed classes

To make up for absences students can do further practice at the location of the practice during regular working hours. The amount of absences in other subjects should be reduced by maximum 14,3% each semester on the basis of the Certificate of Fulfillment of Clinical Practice Block relating to the given period.
Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures

Practices
1-60 gyakorlat

Seminars

Exam topics/questions

Practical requirements for students during and after the practice:
1. Practice should be 6-8 hours on working days during usual working hours.
2. A regular presence of students is required at medical workshops, consultations, graduate and postgraduate teaching programs of the ward. The practice period is optimally supported by consultations and case presentations.
3. Students should take part in activities of residents, ward doctors and doctors in training under supervision according to the applicable local professional, safety and legal regulations. These should include venipuncture, taking medical history, performing physical examination, admitting new patients, planning diagnostic and therapeutic measures, fulfilling tasks required by the ward-round, regularly reporting to the staff, participating in writing discharge summaries and giving account of their patients during the professorial grand-rounds. They should also accompany their patients to special examinations and therapies (e.g. endoscopy, biopsy, echocardiography, exercise stress test, operations).
4. Students should be prepared to present at least 2 detailed anonymized patient/case documentations from each week of the practice at the final examination indicating the date, the ward specifications, the name of the tutor, the name of the student and they should also be signed by both the student and the tutor. The case history should be composed in the language that was used at the ward, the rest of the documentation in the study language of the student or in English. A patient documentation should be at least one, and a maximum of four typed (A/4) pages long. The documentations should be uploaded to the NEPTUN MeetStreet site of the subject in a pdf format and they should not exceed 1 Mbyte. They are due together with the certificate until Friday on the last but one week of the instruction period.
5. Students get a certificate of the gained clinical skills that they acquire during the practice (at least 8 skills are required to be signed each week). They will be acknowledged in the Booklet of Clinical Skills by the course leader on the basis of the certificate.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Czopf László József (BAVD1M), Dr. Szabó Imre (VBRF9D), Dr. Tóth Kálmán (MEK9DI)
Clinical Pharmacology

Course director: Dr. Támás HABON, associate professor
1st Department of Internal Medicine • habon.tamas@pte.hu

2 credit • midterm grade • Elective subject • spring semester • recommended semester: 8

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 25
Prerequisites: OAK-GT3-T completed

Topic
The objectives of this subject are as follows: to help medical students understand the theoretical and practical principles of the rational drug administration, risk in taking drugs, drug interactions, human phases of drug development, its bioethical regulations and patients with special clinical condition that affects the practice of rational therapeutics. In the practical part of the curriculum consultations are organized on the application of frequently used drugs. During the course, there is a special focus on the concept of evidence based medicine (EBM), guidelines and position statements, regarding the most important medical diseases.
As a new element in the course, Translational medicine will be also discuss.

Conditions for acceptance of the semester
Maximum 20% absences can be accepted.

Mid-term exams
Making up for missed classes

Reading material
- Obligatory literature
- Literature developed by the Department
  Published on Neptune
- Notes
- Recommended literature
  Melmon and Morelli: Clinical Pharmacology: Basic Principles in Therapeutics.

Lectures
1. Introduction to clinical pharmacology
   Dr. Habon Támás
2. Rational pharmacotherapy - Evidence based medicine
   Dr. Habon Támás
3. Drug development in humans
   Dr. Bölcskei Kata
4. Good Clinical Practice
   Dr. Bölcskei Kata
5. Applied pharmacokinetics: therapeutic drug monitoring, pharmacotherapy in special patient populations
   Dr. Bölcskei Kata
6. Original and generic drugs
   Dr. Bölcskei Kata
7. Management of chronic pain
   Dr. Frank Nóra
8. Other palliative pharmacotherapy
   Dr. Frank Nóra
   Dr. Péterfi Zoltán
    Dr. Péterfi Zoltán
11. Pharmacological management of cardiovascular risk factors
    Dr. Bajnok László Zoltán
12. Dyslipidemia, Diabetes, Obesity
    Dr. Bajnok László Zoltán
13. Translational medicine
    Dr. Erőss Bálint Mihály
14. Pharmacotherapy in GI diseases
    Dr. Erőss Bálint Mihály
15  Cardiovascular diseases 1.  
   Dr. Magyar Klára
16  Cardiovascular diseases 2.  
   Dr. Magyar Klára
17  Bronchial asthma  
   Dr. Ruzsics István
18  COPD  
   Dr. Ruzsics István
19  Therapy in thrombotic disorders 1.  
   Dr. Késmárky Gábor Róbert
20  Therapy in thrombotic disorders 2.  
   Dr. Késmárky Gábor Róbert
21  Drug side effects  
   Dr. Hunyady Béla
22  Drug interactions  
   Dr. Hunyady Béla
23  Seminars in practical pharmacotherapy. Case-studies in drug use  
   Dr. Habon Tamás
24  Test exam  
   Dr. Habon Tamás

Practices
Seminars
Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-NKA-T MODERN CARDIOVASCULAR DIAGNOSTICS AND THERAPY**

**Course director:**

**DR. RÓBERT HALMOSI, associate professor**

1st Department of Internal Medicine • halmosi.robert@pte.hu

<table>
<thead>
<tr>
<th>2 credit • midterm grade • Elective subject • spring semester • recommended semester: 8</th>
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<tbody>
<tr>
<td>Number of hours/semester:</td>
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<tr>
<td>24 lectures + 0 practices + 0 seminars = total of 24 hours</td>
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<tr>
<td>Course headcount limitations (min.-max.):</td>
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<tr>
<td>5 – 150</td>
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<tr>
<td>Prerequisites:</td>
</tr>
<tr>
<td>OAP-BPR-T completed + OAP-KO2-T completed + OAK-PH2-T parallel</td>
</tr>
</tbody>
</table>

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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**

Maximum of 15 % absence allowed

**Mid-term exams**

1st written test: 5th week (ECG analysis), 2nd written test: 12th week.

**Making up for missed classes**

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
  
  First Department of Medicine lecture slides
  

- **Notes**
- **Recommended literature**
  
  
  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**

1. Introduction. ECG-based examinations (ECG analysis, Exercise stress testing, Holter monitoring)
   
   Dr. Czopf László József

2. ECG-based examinations II (Heart rate variability, signal-averaged ECG)
   
   Dr. Czopf László József

3. Echocardiography (TTE, TEE, stress echo, contrast echo, 3D echo)
   
   Dr. Habon Tamás

4. Echocardiography (TTE, TEE, stress echo, contrast echo, 3D echo)
   
   Dr. Habon Tamás

5. Nuclear cardiology (hybrid cardiac imaging, SPECT, PET)
   
   Dr. Bódisné Dr. Zámbó Katalin

6. Nuclear cardiology (hybrid cardiac imaging, SPECT, PET)
   
   Dr. Bódisné Dr. Zámbó Katalin

7. Genetics of cardiovascular diseases
   
   Dr. Papp Előd

8. Cardiac CT and MRI
   
   Dr. Tóth László Levente

9. Principles of laboratory diagnostics in cardiology - biomarkers
   
   Dr. Halmosi Róbert

10. Interim exam (ECG analysis)
    
    Dr. Halmosi Róbert
11 Actual problems in the treatment of stable angina pectoris
   Dr. Tóth Kálmán
12 Actual problems in the treatment of stable angina pectoris
   Dr. Tóth Kálmán
13 Acute coronary syndromes
   Dr. Nagy Lajos
14 Acute coronary syndromes
   Dr. Nagy Lajos
15 Acute heart failure
   Dr. Márton Zsolt I
16 Heart transplantation
   Dr. Halmosi Róbert
17 Pregnancy and heart disease
   Dr. Késmárky Gábor Róbert
18 Pulmonary embolism and pulmonary hypertension
   Dr. Késmárky Gábor Róbert
19 Emergency treatment of cardiac rhythm disorders
   Dr. Tóth Kálmán
20 Emergency treatment of cardiac rhythm disorders
   Dr. Tóth Kálmán
21 Treatment of resistant hypertension
   Dr. Halmosi Róbert
22 Treatment of resistant hypertension
   Dr. Halmosi Róbert
23 Role of multicenter clinical studies in the cardiological diagnostics and therapy
   Dr. Habon Tamás
24 Written test (MCQ)
   Dr. Halmosi Róbert

Practices

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-OFE-T  MEDICAL RESPONSIBILITY, MEDICAL MALPRACTICE

Course director: Dr. ZSOLT KOZMA, assistant professor
Department of Forensic Medicine  zsolt.kozma@aok.pte.hu

1 credit  •  midterm grade  •  elective subject  •  spring semester  •  recommended semester: 8

Number of hours/semester: 0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 25
Prerequisites: OAP-PA1-T completed

Topic
During the course, the students will study about rules of medical profession, medical liability and legal procedures in medical malpractice cases. In the second part of the course, case studies of malpractice cases will be presented to the students.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Written test exam
Making up for missed classes
not possible

Reading material
- Obligatory literature
  not exist
- Literature developed by the Department
  Educational materials will be uploaded to NEPTUN
- Notes
  not exist
- Recommended literature
  not exist

Lectures

Practices

Seminars
1 Law and legal system
2 Criminal and civil law responsibility
3 Patient’s rights and obligations
4 Healthcare law
5 General rules of medical liability
6 Medical error, risk, defensive medicine
7 Medical malpractice regulations
8 Medical errors: consent (case studies)
9 Medical errors: wrong diagnoses (case studies)
10 Medical errors: operation techniques (case studies)
11 Medical errors: follow-up treatment (case studies)
12 Exam

Exam topics/questions
not exist

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Kozma Zsolt (LRQ66X), Dr. Simon Gábor (CT6UIH), Dr. Tóth Dénes (Q9SATR)
**OAE-OIN-T  MEDICAL INFORMATICS**

Course director: **DR. LÁSZLÓ PÓTÓ**, associate professor
Institute of Bioanalysis • laszlo.poto@aok.pte.hu

<table>
<thead>
<tr>
<th>Credit • midterm grade • elective subject • spring semester • recommended semester: 8</th>
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</table>

**Number of hours/semester:** 6 lectures + 6 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):** 1 – 18

**Prerequisites:** OAA-MET-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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**Topic**

Medical Informatics is a multidisciplinary topic

Storage, database indexing, sampling (Shannon), data compression, encryption, modeling, biometric identification, highlighting the essence, image processing and interpretation, evaluation of EEG and ECG signals, filters, neural networks, learning systems, expert systems, patient management, BNO code.

The goal is: not only to accept and apply the new methods and results but be able to understand the common basics and use them for further developments.

**Conditions for acceptance of the semester**

Max 1 lesson absence

**Mid-term exams**

Active participation on the classes.

**Making up for missed classes**

One extra class, One consultation possible

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  - On the CD
- **Notes**
- **Recommended literature**
  - On the CD

**Lectures**

1. The topics of medical Informatics, a historical overview, constraints of development and chances to break through
   Dr. Pótó László
2. Basic concepts of Information, sampling, digitalization, coding
   Dr. Pótó László
3. Security issues, handling of personal data, data search, indexing
   Dr. Pótó László
4. Application aspects of data compression
   Dr. Pótó László
5. Modeling processes, system controls. Intelligent signal processing in medical praxis.
   Dr. Pótó László
   Dr. Pótó László

**Practices**

1. Examples for the lecture topics, Structure of a motherboard
   Dr. Pótó László
2. Examples for the lecture topics,
   Dr. Pótó László
3. Demonstration of some data compression methods
   Dr. Pótó László
4. Examples of control-systems: stability and dynamics
   Dr. Pótó László
5  Presentation of some diagnostic applications  
   Dr. Pótó László  

6  Application of biofeedback method in therapy, closing test  
   Dr. Pótó László

Seminars

Exam topics/questions

Last week: A short test for refreshing the most important topics.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Pótó László (F104UU)
OAE-TD6-T  STUDENT PROJECT RESEARCH 6

Course director: DR. TIBOR ERTL, professor
Undergraduate Research • tibor.ertl@aok.pte.hu

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 8
Number of hours/semester: 0 lectures + 20 practices + 0 seminars = total of 20 hours
Course headcount limitations (min.-max.): 1 – 300  Prerequisites: OAE-TD5-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 enrol 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 enrol 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. For detailed requirements please read the following document: http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng

Mid-term exams
Making up for missed classes
Not applicable.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  Not applicable

Lectures
Practices
Seminars
Exam topics/questions
Not applicable

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Balogh Péter (KVAPT7)
The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Because of the extent tourism and migration rare imported tropical diseases are common all over the world. The knowledge of prevention, clinical symptoms and differential diagnostic issues of tropical diseases is useful to every physician because misdiagnosis or the lack of therapy can threat the patient’s life.

The course involve travel medicine issues as well.

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

There is no exam during the semester

**Making up for missed classes**

Not possible

**Reading material**

- Obligatory literature
- Literature developed by the Department
  - Slides of lectures
- Notes
- Recommended literature
  - Manson’s Tropical Diseases, 22nd edition

**Lectures**

<table>
<thead>
<tr>
<th>1</th>
<th>Preparing for travel</th>
<th>Dr. Feiszt Zsófia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Preparing for travel</td>
<td>Dr. Feiszt Zsófia</td>
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<tr>
<td>3</td>
<td>Most common imported tropical diseases</td>
<td>Dr. Feiszt Zsófia</td>
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<tr>
<td>4</td>
<td>Viral hemorrhagic fevers</td>
<td>Dr. Feiszt Zsófia</td>
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<tr>
<td>5</td>
<td>Tropical bacterial infections (Thyphoid fever, Cholera, Pest, Bartonellosis)</td>
<td>Dr. Feiszt Zsófia</td>
</tr>
<tr>
<td>6</td>
<td>Tropical bacterial infections (Thyphoid fever, Cholera, Pest, Bartonellosis)</td>
<td>Dr. Feiszt Zsófia</td>
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<tr>
<td>7</td>
<td>Leprosy and other Mycobacterial infections</td>
<td>Dr. Feiszt Zsófia</td>
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<tr>
<td>8</td>
<td>Leishmaniasis</td>
<td>Dr. Feiszt Zsófia</td>
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<tr>
<td>9</td>
<td>Schistosomiasis</td>
<td>Dr. Feiszt Zsófia</td>
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<tr>
<td>10</td>
<td>African and American Trypanosomiasis</td>
<td>Dr. Feiszt Zsófia</td>
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<tr>
<td>11</td>
<td>Non-venera Treponema infections</td>
<td>Dr. Feiszt Zsófia</td>
</tr>
<tr>
<td>12</td>
<td>HIV/AIDS</td>
<td>Dr. Feiszt Zsófia</td>
</tr>
</tbody>
</table>
Practices

Seminars

Exam topics/questions

Preparing of travellers
Most common imported tropical diseases
Viral hemorrhagic fevers
Tropical bacterial infections (Typhoid fever, cholera, pest, bartonellosis)
Leprosy and other mycobacterial infections
Leishmaniasis
Schistosomiasis
Non-venereal treponema infections
HIV/AIDS
Non-infectious tropical diseases
Malnutrition

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Feiszl Zsófia (SBKZR2)
### OAF-3DM-T  3D TECHNOLOGIES IN MEDICINE

**Course director:** 
Dr. Gyula Marada, assistant professor  
Department of Dentistry, Oral and Maxillofacial Surgery  
marada.gyula@pte.hu

<table>
<thead>
<tr>
<th>1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of hours/semester:</strong> 12 lectures + 0 practices + 0 seminars = total of 12 hours</td>
</tr>
<tr>
<td><strong>Course headcount limitations (min.-max.):</strong> 2 – 30</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> OAA-BI2-T completed + OAP-MUA-T completed + OAK-KRA-T completed</td>
</tr>
</tbody>
</table>

**Topic**

The aim of the course is to introduce students to today’s most dynamically developing digital technologies and applications in different areas of healthcare.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

None

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
  - Lecture notes
- **Notes**
- **Recommended literature**

**Lectures**

1. The History of Digital Techniques in Health Care  
   Dr. Nyitrai Miklós
2. Options for producing digital data I.  
   Dr. Marada Gyula
3. Options for producing digital data II.  
   Dr. Marada Gyula
4. Effective processing of 3D mesh  
   Dr. Maróti Péter Dezső
5. Polygon mesh optimization methods and their geometric bases  
   Dr. Maróti Péter Dezső
6. Introduction to Computer Supported Manufacturing Technology  
   Dr. Varga Péter
7. Surface and body modeling basics: coordinate geometry and file formats  
   Dr. Varga Péter
8. Milling knowledge: machines, tools, materials; cutting forces, CNC machining session  
   Dr. Varga Péter
9. Additive technologies and their materials  
   Dr. Marada Gyula
10. 3D Printing Opportunities in Surgery  
    Dr. Gasz Balázs Zoltán
11. The possibilities of digital techniques in orthopedics  
    Dr. Maróti Péter Dezső
12. Digitalis technology in dentistry  
    Dr. Marada Gyula
Practices

Seminars

Exam topics/questions

Written test

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-EAM-T PERFORMING HIGH QUALITY VASCULAR ANASTOMOSIS, SIMULATION-BASED SKILL TRAINING SURGICAL COURSE**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. BALÁZS ZOLTÁN GASZ, associate professor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Surgical Research and Techniques</td>
<td><a href="mailto:balazs.gasz@gmail.com">balazs.gasz@gmail.com</a></td>
</tr>
</tbody>
</table>

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8

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

Course headcount limitations (min.-max.): 5 – 12

Prerequisites: OAP-MUA-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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**Topic**

A real practically oriented course is based on innovative methods for making the skill development, training more effective. Attendees can control and improve their skill at their own, assessing 3D morphology and blood flow simulation of vessel sutures and anastomosis they have performed.

The course involves conventional training on vascular surgical skills moreover a detailed computational analysis based method is used for demonstration of the performance of sutures which can be effectively applied for optimal vascular sutures of best quality.

Furthermore, case specific, high fidelity simulators are used for more comprehensive surgical training.

The courses are hold and performed by staff of ME3D-Innovations Ltd. Leader: Balazs Gasz. The short and informative basic presentations are hold by experts (Dr. László Hejjel, Dr. Gábor Jancsó; Dr. László Lénárd)

**Conditions for acceptance of the semester**

Attendance is obligatory on every practice.

**Mid-term exams**

**Making up for missed classes**

**Reading material**

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
**OAF-GTH-T  GENE THERAPY**

**Course director:**
DR. GÉZA SÁFRÁNY, visiting professor
Institute of Laboratory Medicine • gsafrany@hotmail.com

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 8

**Number of hours/semester:**
12 lectures + 0 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**
3 – 30

**Prerequisites:**
none

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**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**

Maximum of 25 % absence allowed

**Mid-term exams**

Test

**Making up for missed classes**

Joining later lectures, individual consultations.

**Reading material**

- **Obligatory literature**


- **Literature developed by the Department**


- **Notes**

- **Recommended literature**

  [http://www.bioportfolio.com/cgi-bin/acatalog/Human_Gene_Therapy_Course.html](http://www.bioportfolio.com/cgi-bin/acatalog/Human_Gene_Therapy_Course.html)

**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. Sáfrány Géza
4. Application of dendritic cells in gene therapy
   Dr. Sáfrány Géza
5. Gene directed enzyme pro-drug therapy of malignant diseases
   Dr. Sáfrány Géza
6. Immune therapy of malignant diseases
   Dr. Sáfrány Géza
7. Gene therapy of leukaemia
   Dr. Sáfrány Géza
8. Treatment of immune-deficiencies with gene therapy
   Dr. Sáfrány Géza
9  Gene therapy of ischemic diseases  
    Dr. Sáfrány Géza  
10 Gene therapy of cystic fibrosis  
    Dr. Sáfrány Géza  
11  Gene therapy of thalassemia  
    Dr. Sáfrány Géza  
12 Oncolytic viruses in tumor 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.  
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject  
Participants  
Dr. Sáfrány Géza (UYX8V2)
**OAF-HAS-T  **
**ABDOMINAL SURGERY TECHNIQUES**

**Course director:**
DR. GÁBOR JANCSÓ, associate professor
Department of Surgical Research and Techniques • jancsogabor@hotmail.com

1 credit • midterm grade • Optional subject • spring semester • recommended semester: 8

Number of hours/semester: 0 lectures + 12 practices + 0 seminars = total of 12 hours

Course headcount limitations (min.-max.): 5 – 12

**Prerequisites:** OAP-MUA-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

We advise this course to students interested in surgical lines to develop their technical skills in the field of abdominal surgery. We suggest this course to students interested in surgery, traumatology, urology, gynaecology. Students learn about the instruments and basic techniques of abdominal surgery, pre-and postoperative treatments of surgical patients. The different bowel anastomosis suture techniques, appendectomy, diverticulectomy, cholecystectomy, and hernioplasty can be practiced on skill models. During the clinical operating room practices students can observe and take part as assistants in abdominal operations.

**Conditions for acceptance of the semester**

According to the code of studies.

OAPMUA - completed

**Mid-term exams**

there is no mid-term examination

**Making up for missed classes**

Attendance is obligatory at every practice.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  http://aok.pte.hu/hu/gyseg/oktatasianyagok/130

- **Notes**

- **Recommended literature**

**Lectures**

**Practices**

1. Instruments of abdominal surgery, forms of laparatomy and their closing
2. Instruments of abdominal surgery, forms of laparatomy and their closing
3. Forms of bowel sutures, transverse suture on skill model
4. Forms of bowel sutures, transverse suture on skill model
5. Appendectomy, diverticulectomy on skill model
6. Appendectomy, diverticulectomy on skill model
7. Preparing bowel anastomosis on models
8. Preparing bowel anastomosis on models
9. Preparing cholecystectomy and hernioplasty on models
10. Preparing cholecystectomy and hernioplasty on models
11. Clinical practice in operation theatre: colon surgery
12. Clinical practice in operation theatre: cholecystectomy, and hernioplasty

**Seminars**

Exam topics/questions
http://aok.pte.hu/hu/gyseg/oktatasianyagok/130

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

<table>
<thead>
<tr>
<th>Participant Name</th>
<th>Department</th>
<th>Code</th>
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<tbody>
<tr>
<td>dr. Bognár Laura (XVGSYL)</td>
<td></td>
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<tr>
<td>Dr. Gasz Balázs Zoltán</td>
<td></td>
<td>BI3N05</td>
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<tr>
<td>Dr. Hardi Péter (AKE71H)</td>
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<tr>
<td>Dr. Jancsó Gábor (V382Q9)</td>
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<tr>
<td>Dr. Nagy Tibor Aladár</td>
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<td>VREE09</td>
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<tr>
<td>Dr. Petrovics Laura</td>
<td></td>
<td>MNZPKC</td>
</tr>
<tr>
<td>Dr. Takács Ildikó</td>
<td></td>
<td>V6M8LJ</td>
</tr>
</tbody>
</table>
OAF-MDT-T  DIAGNOSIS AND TREATMENT OF LIVER DISEASES

Course director: DR. GABRIELLA PÁR, associate professor
1st Department of Internal Medicine • par.gabriella@pte.hu

2 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8

Number of hours/semester: 0 lectures + 0 practices + 24 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 25  Prerequisites: none

Topic
The aim of the course is to give a comprehensive view of the current diagnosis and treatment of liver diseases. The lectures overview the most important liver diseases such as alcoholic liver disease, non-alcoholic steatohepatitis, autoimmune liver diseases, chronic viral hepatitis B and C, drug induced liver diseases and genetic liver diseases. This course is a very useful supplement of the gastroenterology subject where we teach hepatology in a few hours.

Content of the course, lecture titles:
1.-2. hours: Laboratory diagnosis of liver diseases: biochemistry, virology, immunology and transient elastography (Gabriella Par)
3.-4. hours: Pathology of the liver, the role of liver biopsy in clinical practice (prof. Laszlo Pajor)
5.-6. hours: The role of radiology in hepatology (Nandor Faluhelyi)
7.-8. hours: The role of endoscopy in liver and bileduct diseases (Imre Szabo)
9.-10. hours: Hepatocellular carcinoma (Gabriella Par)
11.-12. hours: Diagnosis and treatment of acute hepatitis (Zsuzsanna Nemes)
15.-16. hours: Liver surgery (Károly Nagy Kalmar)
17.-18. hours: Alcoholic liver disease (prof. Alajos Par)
19.-20. hours: Non-alcoholic steatohepatitis (prof. Alajos Par)
21.-22. hours: Autoimmune liver diseases (Gabriella Par)
23. 24. hours: Etiology and complications of cirrhosis (Szilárd Godi)

Conditions for acceptance of the semester
Maximum of 15% absence allowed

Mid-term exams
Written test from the lectures at the end of course.

Making up for missed classes
none

Reading material
- Obligatory literature
- Literature developed by the Department
  PPT presentations of the lectures will be available
- Notes
- Recommended literature

Lectures
Practices
Seminars

Exam topics/questions
The content of the lectures.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Faluhelyi Nándor (ABWPWC), Dr. Gödi Szilárd (HIX0MZ), Dr. Hunyady Béla (E8M5LK), Dr. Kalmár Nagy Károly (AOZ34R), Dr. Nemes Zsuzsanna (A41BHF), Dr. Pajor László (M5547I), Dr. Pár Alajos (SXE7MD), Dr. Pár Gabriella (IQHZQO), Dr. Szabó Imre (VBRF9D)
The subject can only be registered in case of a PASSED and valid health aptitude test!

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.

Mid-term exams
there is no mid-term examination

Making up for missed classes
Attendance at every practice is obligatory. Because of the limited capacity of our operating theatre absence cannot be solved by joining another group.

Reading material
- Obligatory literature
- Literature developed by the Department
  [http://soki.aok.pte.hu/](http://soki.aok.pte.hu/)
- Notes
- Recommended literature

Lectures
Practices
1  Acquirement of hand-eye coordination. Thematic exercises on pelvitrainer
2  Acquirement 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 Simulator
12  Laparoscopic cholecystectomy on Simulator

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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
dr. Bognár Laura (XVGSYL), Dr. Gasz Balázs Zoltán (B13N05), Dr. Hardi Péter (AKE71H), Dr. Jancsó Gábor (V382Q9), Dr. Nagy Tibor Aladár (VREE09), Dr. Petrovics Laura (MNZPKC), Dr. Takács Ildikó (V6M8LJ)
**MUCOSAL IMMUNOLOGY**

**Course director:**

**DR. ZOLTÁN KELLERMAYER,** resident  
Department of Immunology and Biotechnology  
kellermayer.zoltan@pte.hu

**1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8**

**Number of hours/semester:**  
12 lectures + 0 practices + 0 seminars = total of 12 hours

**Course headcount limitations (min.-max.):**  
3 – 20  
**Prerequisites:** none

---

**Topic**

The Mucosal Immunology subject connects the Basic Immunology subject with mucosal immunologic pathologies and diseases. In the first part of the course the main types of mucosal lymphoid tissues, their embryonic and postnatal development, and their research possibilities will be covered. In the second half clinicians will present the symptoms, diagnostics and therapy of diseases of various mucosal sites (gastrointestinal tract, airways, genitourinary tract).

**Conditions for acceptance of the semester**

Maximum of 25 % absence allowed

**Mid-term exams**

None

**Making up for missed classes**

None

**Reading material**

- **Obligatory literature**  
  None

- **Literature developed by the Department**  
  None

- **Notes**  
  None

- **Recommended literature**  
  None

**Lectures**

   Dr. Kellermayer Zoltán

2. Mukozális nyirokszövetek fejlődése.  
   Dr. Kellermayer Zoltán

3. Intesztinális mikrobióta jelentősége.  
   Dr. Kellermayer Zoltán

4. Veleszületett limfoid sejtek.  
   Dr. Balogh Péter

5. Crohn betegség és colitis ulcerosa immunológiája.  
   Dr. Kellermayer Zoltán

6. Coeliakia és ételallergiák immunológiája.  
   Dr. Kellermayer Zoltán

7. IBD állatmodellek.  
   Dr. Kellermayer Zoltán

8. IBD: tünettan, diagnózis, terápia.  
   Dr. Vincze Áron Endre

9. IBD patológiája, kórszövettana.  
   Dr. Kajtár Béla

10. Mukozális nyirokszövetek és limfómák.  
    Dr. Kajtár Béla

11. Légtutak immunológiai betegségei.  
    Dr. Engelmann-Szabó Mariann

12. HIV és a mukóza.  
    Dr. Feiszt Zsófia
Practices

Seminars

Exam topics/questions

None

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAF-RAI-T  IMMUNO-PATHOLOGICAL CHARACTERISTICS OF INFLAMMATORY RHEUMATOLOGICAL AND SYSTEMIC AUTOIMMUNE DISEASES

Course director: DR. LÁSZLÓ ISTVÁN CZIRJÁK, professor
Department of Rheumatology and Immunology • czirjak.laszlo@pte.hu

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 40
Prerequisites: OAP-BPR-T completed + OAA-IMM-T completed + OAP-PA1-T completed

Topic
The aim of the course is to provide deeper insight into the immune pathogenesis of systemic autoimmune diseases and to better understand the nature of active inflammatory processes during the course of the disease. The obligatory Clinical Immunology and Rheumatology course cannot provide enough time for this purpose.
The ideal participants of this course are those who are interested in internal medicine and immunology, and who would like to deal with various aspects of systemic autoimmune diseases and immunodeficiency syndromes. A clinical practitioner encounters such illnesses more often then he thinks, so it is important to clarify the clinical background of these conditions.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
Passing two written exams on the 8. and 12. week of the semester.
Examination of the musculoskeletal system.

Making up for missed classes
There is no possibility.

Reading material
- Obligatory literature
- Literature developed by the Department
  Lecture materials on NEPTUN Unified Education System.
- Notes
- Recommended literature
  Lynn S. Bickley: Bates’ Guide to Physical Examination and History Taking. (The actual version.)
  Harrison’s Principles of Internal Medicine Companion Handbook. Short pocket book. (The actual version.)
  Philip Seo (with Alan J. Hakim, Gavin P. R. Cluine, Inam Haq): American Handbook of Rheumatology, Oxford University Press. (The actual version.)

Lectures
1  Autoimmunity: general characteristics.
Dr. Czirják László István
Dr. Czirják László István
3  Antiphospholipid syndrome. Immunological characteristics. Sjogren’s syndrome.
Dr. Minier Tünde
4  Pathogenesis of rheumatoid arthritis.
Dr. Kumánovics Gábor
5  Idiopathic inflammatory myopathies. Classification and immunological characteristics of the different subsets.
Dr. Sarlós Gézáné (Dr. Varjú Cecilia)
6  Disorders evolving fibrosis. Systemic sclerosis.
Dr. Czirják László István
7  Immunological characteristics of primary and secondary vasculitides. Giant cell arteritis, ANCA associated vasculitis.
Dr. Czirják László István
8  Autoinflammatory syndromes. Gout.
Dr. Minier Tünde
Measurement of disease activity and damage. Immunological changes during the disease course of systemic autoimmune diseases.
Dr. Sarlós Gézáné (Dr. Varjú Cecilia)

Spondylarthritides and psoriatic arthritis.
Dr. Horváth Gábor

Dr. Czirják László István

Immunosuppressive, immunomodulant drugs. Biological therapies.
Dr. Kumánovics Gábor

Practices

Exam topics/questions

Exam questions:
1. When do you suspect a systemic autoimmune disease?
2. Diagnostic value of specific autoantibody tests and capillaroscopy.
3. Pathomechanism and clinical features of rheumatoid arthritis.
4. Assessment of activity during the management of rheumatoid arthritis. DAS28, SDAI, HAQ index.
5. Pathomechanism of SLE, clinical features. Basic principals of the diagnosis.
6. Primary and secondary antiphospholipid syndrome. Immunological characteristics, laboratory diagnosis, clinical signs and therapy.
8. Immunopathomechanism and clinical characteristics of polymyositis, dermatomyositis. Myositis subtypes based on autoantibody testing.
10. Immunopathomechanism and clinical characteristics of primary and secondary vasculitis.
11. CVID. The connection between congenital immunodeficiency syndromes, autoimmunity and malignancies.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAF-SI2-T  **

**SURGICAL SKILLS 2**

**Course director:**

DR. BALÁZS ZOLTÁN GASZ, associate professor

Department of Surgical Research and Techniques  •  balazs.gasz@gmail.com

<table>
<thead>
<tr>
<th>1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 8</th>
</tr>
</thead>
</table>

**Number of hours/semester:**

0 lectures + 12 practices + 0 seminars = total of 12 hours

**Course headcount limitations** (min.-max.):

5 – 60

**Prerequisites:**

OAP-MUA-T completed + OAF-SI1-T completed

---

**Topic**

We advise this course to students interested in surgical lines, to develop their technical skills in the field of abdominal surgery, cardiac surgery, microsurgery, laparoscopic surgery and vascular surgery. The course is suggested to students interested in surgery, vascular surgery, traumatology, urology, and cardiac surgery. Students learn about the instruments, basic techniques and the baselines of the operating technique in the specified fields of surgery.

Additional pre-requisite for registering for Surgical Skills 2: filled-undersigned logbook regarding ‘Surgical Skill 1’ part and passed examination of skills amoung ‘Surgical Skill 1’

**Conditions for acceptance of the semester**

1. OOP-MUA-T - completed
2. Surgical skill 1. - completed
3. Filled-undersigned logbook regarding „Surgical Skill 1” part and passed examination of skills amoung „Surgical Skill 1”

**Mid-term exams**

http://aok.pte.hu/hu/egyseg/oktatas/130

**Making up for missed classes**

Attendance is obligatory at every practice

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
  
  http://aok.pte.hu/hu/egyseg/oktatas/130

- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

1. Instruments of abdominal surgery, forms of laparotomy and their closing
2. Forms of bowel sutures, transverse suture on skill model
3. Acquirement of hand-eye coordination. Thematic exercises on pelvitrainer
4. Acquirement of hand-eye coordination. Thematic exercises on pelvitrainer
5. Instruments of vascular surgery, arterial suture techniques on models
6. Cross and lengthwise arteriotomies, closing with direct suture on models
7. Cross and lengthwise arteriotomies, closing with direct suture on models
8. Tools and instruments in cardiac surgery. Cardiac surgical OR, Cardiopulmonary bypass, cannulation techniques
9. 3D morphology of anastomosis, basics of flow dynamics. Technique of end to side anastomosis
10. Types of vascular anastomosis Training based on the results of performed sutures
11. Microsurgical instruments and suturing techniques
12. Practical exam, skill assessment

**Seminars**

Exam topics/questions

http://aok.pte.hu/hu/egyseg/oktatas/130

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

dr. Bognár Laura (XVG5YL), Dr. Gasz Balázs Zoltán (BI3N05), Dr. Hardi Péter (AKE71H), Dr. Jancsó Gábor (V382Q9), Dr. Nagy Tibor Aladár (VREE09), Dr. Petrovics Dóra (G4WBQB), Dr. Takács Ildikó (V6M8LJ)
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 sequels 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.

Mid-term exams
Test exam at the end of the course; oral consultation at halfway

Making up for missed classes
Joining later seminars, individual consultations.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  [http://radiationbiology.arc.nasa.gov/index.html](http://radiationbiology.arc.nasa.gov/index.html)
  [http://www.rtstudents.com/students/radiation-biology.htm](http://www.rtstudents.com/students/radiation-biology.htm)

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
Proliferative organization of normal tissues. Dose-effect relationships in normal tissues.
Dr. Sáfáryán Géza

The radiobiological background of fractionated radiotherapy, the importance and application of the linear-quadratic approach in tumor treatment.
Dr. Sáfáryán Géza

The role of treatment duration, total and fraction dose in radiotherapy.
Dr. Sáfáryán Géza

Radiobiological principles of low and high-dose rate brachytherapy.
Dr. Sáfáryán Géza

Risks of occupational exposure to radiation: dose limit in radiation protection.
Dr. Sáfáryán Géza

Dr. Sáfáryán Géza

Practices

Seminars

2. Cell death due to ionizing radiation, survival curves.
5. Molecular biological principles of tumor development.
6. The Chernobyl nuclear accident and its consequences.
7. Proliferation of tumor cells, factors influencing tumor development.
8. Early and late side-effects of radiotherapy.
10. The risk of repeated radiotherapy.
11. Targeted and individual tumor therapy, estimating radiosensitivity, predictive assays.
12. Doses and risks in radiology and imaging diagnostics.

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.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Sáfáryán Géza (UYX8V2)
OXF-FBJ-A-T | BEDEUTUNG VON ZAHN- UND MUNDSCHEIMHAUTERKRANKUNGEN IN DER ALLGEMEINMEDIZINISCHEN PRAXIS

Course director: Dr. BÁN, ÁGNES, Außerordentliche/r Professor/in
Department of Dentistry. Oral and Maxillofacial Surgery • jobbfelso@gmail.com; ban.agnes@pte.hu

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 8
Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 3 – 10
Prerequisites: OAP-KO2-T completed + OAP-MO2-T completed + OAP-PA2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

Conditions for acceptance of the semester
Bis maximal 15% Abwesenheit erlaubt

Mid-term exams
Making up for missed classes
Keine

Reading material
- Obligatory literature
- Literature developed by the Department
  Themen von Vorlesungen
- Notes
- Recommended literature

Lectures
1 Mikrobiologie der Mundhöhle, bakterielle und virale Krankheitsbilder
   Dr. Bán Ágnes
2 Auswirkungen zahnmedizinischer Herde auf den Organismus
   Dr. Bán Ágnes
3 Orale Symptome kardiovaskulärer Erkrankungen
   Dr. Bán Ágnes
4 Erkrankungen des neuroendokrinen Systems und Stoffwechselerkrankungen
   Dr. Bán Ágnes
5 Orale Symptome von HIV, Vorbeugung nosokomialer Infektionen
   Dr. Bán Ágnes
6 Diabetes mellitus
   Dr. Bán Ágnes
7 Präkanzeröse Veränderungen
   Dr. Bán Ágnes
8 Vesikulobullöse Erkrankungen
   Dr. Bán Ágnes
9 Immunologische Krankheitsbilder
   Dr. Bán Ágnes
10 Medikamentennebenwirkungen in der Mundhöhle
   Dr. Bán Ágnes
11 Erkrankungen des Gastrointestinaltraktes
    Dr. Bán Ágnes
12 Lichen planus
    Dr. Bán Ágnes

Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
Dr. Bán Ágnes (L6MZHT)
OAE-CUI-T  CURRENT ISSUES AND NEW SURGICAL TECHNIQUES

Course director: DR. ANDRÁS GÁBOR VERECZKEI, professor
Surgery Clinic • vereczkei.andras@pte.hu

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

Number of hours/semester: 24 lectures + 0 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 3 – 10
Prerequisites: OAP-PA2-T completed + OAP-SPR-T completed + OAK-SE1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 the credit value of the course can be acknowledged.

Mid-term exams
Presentation slides.

Making up for missed classes
There is none.

Reading material
- Obligatory literature
- Literature developed by the Department
  Presentations of the lectures serve as knowledge base
- Notes
- Recommended literature
  Schwartz’s: Principles of surgery

Lectures
1 Interventions on the large bowel
   Dr. Baracs József
2 Interventions on the large bowel
   Dr. Baracs József
3 Solid organ transplantation
   Dr. Kalmár Nagy Károly
4 Solid organ transplantation
   Dr. Kalmár Nagy Károly
5 Actualities in breast surgery
   Dr. Zapf István Tamás
6 Actualities in breast surgery
   Dr. Zapf István Tamás
7 Novelties in proctology
   Dr. Baracs József
8 Novelties in proctology
   Dr. Baracs József
9 Curiosities in plastic surgery
   Dr. Zapf István Tamás
10 Curiosities in plastic surgery
   Dr. Zapf István Tamás
11 Bariatric surgery
   Dr. Vereczkei Andráš Gábor
12 SILS, and NOTES
   Dr. Vereczkei Andráš Gábor
13 Hepatobiliary surgery
   Dr. Kalmár Nagy Károly
<table>
<thead>
<tr>
<th>No.</th>
<th>Topic</th>
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<tr>
<td>14</td>
<td>Hepatobiliary surgery</td>
<td>Dr. Kalmár Nagy Károly</td>
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<td>15</td>
<td>Pancreatic surgery</td>
<td>Dr. Kelemen Dezső Tamás</td>
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<td>16</td>
<td>Pancreatic surgery</td>
<td>Dr. Kelemen Dezső Tamás</td>
</tr>
<tr>
<td>17</td>
<td>Actualities in thoracic surgery</td>
<td>Dr. Szántó Zalán János</td>
</tr>
<tr>
<td>18</td>
<td>Actualities in thoracic surgery</td>
<td>Dr. Szántó Zalán János</td>
</tr>
<tr>
<td>19</td>
<td>Novelties in esophageal cancer surgery</td>
<td>Dr. Papp András</td>
</tr>
<tr>
<td>20</td>
<td>Novelties in esophageal cancer surgery</td>
<td>Dr. Papp András</td>
</tr>
<tr>
<td>21</td>
<td>New achievements in the treatment of benign oesophageal disorders</td>
<td>Dr. Papp András</td>
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<tr>
<td>22</td>
<td>New achievements in the treatment of benign oesophageal disorders</td>
<td>Dr. Papp András</td>
</tr>
<tr>
<td>23</td>
<td>Hernia surgery</td>
<td>Dr. Baracs József</td>
</tr>
<tr>
<td>24</td>
<td>Hernia surgery</td>
<td>Dr. Baracs József</td>
</tr>
</tbody>
</table>

**Practices**

**Seminars**

**Exam topics/questions**

None.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
**OAE-DM7-T \textbf{DEMONSTRATOR ACTIVITY 7}**

\textbf{Course director:} DR. \textsc{László József Czopf}, associate professor  
1st Department of Internal Medicine • laszlo.czopf@aok.pte.hu

2 credit • midterm grade • elective subject • both semesters • recommended semester: 9

\textbf{Number of hours/semester:} 0 lectures + 24 practices + 0 seminars = total of 24 hours

\textbf{Course headcount limitations (min.-max.):} 1 – 300  
\textbf{Prerequisites:} OAE-DM6-T completed

\textbf{Topic}

This course gives support and acknowledgement for students performing documented and successful supervised teaching activities and taking an active part in organizing courses. The subjects can be taken in eight semesters (in a total value of 16 credits).

\textbf{Conditions for acceptance of the semester}

\textbf{Students have to register every semester as demonstrators,} should provide proof of previous demonstrator activity, and the semester will be signed on the basis of at least 24 hours of teaching or organizatory activity. The grades will be given according to the Code of Demonstrators with additional requirements, that you can reach using the following links: Code of Demonstrator Students:

https://docs.google.com/document/d/1xkkyeRdZcDphmqWEkpON0SQf34MpbBqg09f0I8Rw/edit?usp=sharing

Faculty Home Page of the Circle of Demonstrator Students (DDK):


\textbf{Mid-term exams}

At least two midsemester tests should be successfully completed to pass.

\textbf{Making up for missed classes}

There are no absences accepted from the 24 hours demonstrator activity.

\textbf{Reading material}

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

\textbf{Lectures}

\textbf{Practices}

\textbf{Seminars}

\textbf{Exam topics/questions}

The topics of the tests depend on the specific course of the demonstrator activity.

\textbf{Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject}

\textbf{Participants}

Dr. Czopf László József (BAVD1M), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Sebők Judit (GLM10L), Dr. Tamás Andrea (F7QM8G), Dr. Ujvári Balázs (EN1LY9)
OAE-ED2-T  The Role of the ECG in the Differential Diagnosis 2

Course director: Dr. András Komócsi, professor
Heart Institute • komocsi.andras@pte.hu

1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 9

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 20
Prerequisites: OAK-KAR-T parallel

Topic
The course is primarily planned to fulfill the curiosity of students interested toward cardiology after having learned cardiology. Evoking the basics of ECG will be followed by grouping/classifying certain diseases regarding cardiology and internal medicine, then introducing extracardiac factors; (ion level insufficiency, drug/pharmaceutical effects, central nervous systems effects) impact on the cardiac system, and tracking of the cardiovascular system’s diseases in a dynamic way will be the aim of this course. The students will be introduced to the application/usage of ECG within the field of emergency medicine, followed by gaining the ability to analyze these ECGs properly and confidently.

ECGs attached to detailed case presentations improves most students’ ability to make decisions in acute situations and it improves the capability to create a complex aspect/approach as well.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams
The exam is an electronic test targeting different levels of ECG knowledge.

Making up for missed classes
No possibility offered to substitute for missed lectures.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
1  Myocardial infarction reflected on the ECG
   Dr. Komócsi András
2  Pitfalls and atypical cases of MI
   Dr. Komócsi András
3  Pacemaker EKG
   Dr. Komócsi András
4  Antiarrythmic pacemakers
   Dr. Komócsi András
5  Disorders of QT Interval-Long-QT-Syndrome
   Dr. Varga Noémi
6  Disorders of QT Interval-Short-QT-Syndrome
   Dr. Varga Noémi
7  Primary T wave abnormalities
   Dr. Varga Noémi
8  Secondary T wave abnormalities
   Dr. Varga Noémi
9  Arrhythmias in the pacemaker function
   Dr. Husznai Róbert
10 Special ECG techniques
    Dr. Husznai Róbert
11 Arrhythmias II: blocks.
    Dr. Husznai Róbert
12 Technical disorders in the ECG evaluation
    Dr. Husznai Róbert
Practices

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-GEPT  BASIC PRACTICAL PRINCIPLES OF JOINT REPLACEMENT

Course director: DR. PETER THAN, professor
Department of Orthopaedics • than.peter@pte.hu

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

Number of hours/semester: 7 lectures + 14 practices + 0 seminars = total of 21 hours
Course headcount limitations (min.-max.): 1 – 10
Prerequisites: OAK-ORT-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

One of the main fields of modern orthopedics today is replacement of major joints. Aim of this course is to present basic practical knowledge of this field and to give detailed and high level information to the students. The course is mainly practice oriented. Besides this theoretical principles are discussed as well. History of joint arthroplasty, surgical techniques, indicational criteria, rehabilitation and basic biomechanical principles are presented in lectures. Main factors of practical education are participation in outpatient work, participation in surgical activities (hip and knee prostheses) and observation of rehabilitation of operated patients. Main goal of the education is that students should improve their practical knowledge on the field of patient care.

Conditions for acceptance of the semester

Maximum 20 % of missed practices and classes allowed.

Mid-term exams

Report.

Making up for missed classes

Participation in further surgeries

Reading material

- Obligatory literature

- Literature developed by the Department
  Lecture notes

- Notes

- Recommended literature

Lectures

1. Principles of modern joint replacement  
   Dr. Than Péter
2. Principles of modern joint replacement  
   Dr. Than Péter
3. Manufacturing and planning of joint implants  
   Dr. Than Péter
4. Manufacturing and planning of joint implants  
   Dr. Than Péter
5. Principles of hip revision  
   Dr. Than Péter
6. Principles of hip revision  
   Dr. Than Péter
7. Principles of knee revision  
   Dr. Than Péter

Practices

1. Participation in joint replacement surgeries
2. Participation in joint replacement surgeries
3. Participation in joint replacement surgeries
4. Participation in joint replacement surgeries
5. Participation in joint replacement surgeries
6. Participation in joint replacement surgeries
7. Participation in joint replacement surgeries
8 Participation in joint replacement surgeries
9 Participation in joint replacement surgeries
10 Participation in joint replacement surgeries
11 Participation in joint replacement surgeries
12 Participation in joint replacement surgeries
13 Participation in joint replacement surgeries
14 Participation in joint replacement surgeries

Seminars

Exam topics/questions

Optional questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Than Péter (BGJL9V)
OAE-HTK-T  ADVANCED LEVEL TRAUMATOLOGY MANUAL SKILL COURSE

Course director:  DR. NORBERT WIEGAND, associate professor
Department of Traumatology and Hand Surgery • wiegand.norbert@pte.hu

1 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 9
Number of hours/semester:  4 lectures + 8 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  4 – 12
Prerequisites:  OAA-NEA-T completed + OAP-SPR-T completed + OAK-TRA-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic

The aim of the course is to improve the participants’ surgical manual skills in the field of traumatology. Therefore, the course would focus not only on the theoretical knowledge, but also on the manual practice of advanced surgical procedures. The level of knowledge is expected to be achieved by the end of the course exceeds the standards of 4th year basic traumatology curriculum. As preparation to the course, all participants are expected to learn the online available pre-course teaching materials.

In the first part of the course, students will learn the indication and then, manually practice different types of special cast fixation techniques. As part of the manual skill practice, participants will exercise the application of casts with special indication (Bennett-, Desault- and Böhler-cast, splinting after Achilles-tendon injury, etc.). Participants could also exercise the use of up-to-date fiberglass and thermoplastic fixation methods.

During the second part of the course, participants will learn the up-to-date operative management of excessive, contaminated soft tissue injuries. Attendees to the course exercise the step-by-step operative management of damaged, contaminated soft tissue injuries (wound cleaning, excision of damaged tissue, preparation layer-by-layer into the full depth of the artificial wound, reconstruction of viable elements) on porcine extremity. Additionally, course participants will be able to practice the partial coverage of the remaining soft tissue defect by (skin) flap transposition.

Importantly, the opportunity of manual practice will be provided to all participants of the course.

Conditions for acceptance of the semester

Since the course requires the knowledge of basic principles of plaster fixation and certain manual skills, such as the basics of wound treatment, therefore, the requirement for application to the course is the successful accomplishment of 4th year traumatology exam.

Mid-term exams

Making up for missed classes

In case of absence, there is no other opportunity to accomplish the practical exercises and the participant needs to repeat the course to acquire the credits for it.

Reading material

- Obligatory literature
  - Oxford Handbook of Orthopaedics and Trauma (Oxford Medical Handbooks)
- Literature developed by the Department
  - online pre-course material
- Notes
- Recommended literature
  - Campbell’s Operative Orthopaedics, 12th edition, Elsevier
  - Green’s Operative Hand Surgery, Elsevier
  - http://www.aotrauma.org
  - http://www.aaos.org

Lectures

1  History of conservative fracture treatment. Indications and limitations of special types of cast fixation methods.
   Dr. Wiegand Norbert
2  Detailed presentation of modern cast fixation techniques. Application of braces and orthoses.
   Dr. Nőt László Gergely
3  Principles of wound treatment. Therapeutic principles of wounds with contamination and excessive soft tissue damage.
   Dr. Patezai Balázs
4  Management of excessive soft tissue defects. Preparation of different type of flaps.
   Dr. Lázár István
Practices

1. Practical exercise of basic cast fixation techniques. Demonstration of “tricks and tips”.
2. Practice of the application of special cast types I. (Desault-, Böhler-, Bennett-cast, etc)
3. Practice of the application of fiberglass and thermoplastic cast fixation methods.
4. Written (multiple choice test, 25 questions) and practical exam (application of cast)
5. Practical exercise of the basics of wound treatment on porcine extremity.
6. Practice of the management of contaminated wounds with excessive soft tissue damage.
7. Treatment of soft tissue defects with preparation of flaps (Wolfe-Krauze flap) on porcine extremity.
8. Written (multiple choice test, 25 questions) and practical exam (treatment of contaminated wounds)

Seminars

Exam topics/questions

The written exam (multiple choice test with 25 questions) is based on the teaching material of the lectures and seminars. The practical exam contains: after the first part: application one of the previously practiced cast types (Bennett-, Desault-, Böhler-cast, splinting after Achilles-tendon injury, etc.) and after the second part: demonstration of the precise surgical management of a contaminated, damaged wound on porcine extremity. On both practical exams, the score will be determined by a committee formed of 3 lecturers of the course.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Kungl Jusztina (KTBQC5), Dr. Lázár István (K1D6P6), Dr. Nőt László Gergely (BPQRD0), Dr. Pankaczi Zsófia (VMVJJ2), Dr. Patczai Balázs (EHM7H6), Dr. Szabó Tamás (HFFRWP), Dr. Wiegand Norbert (YRGUAM)
## Course Description

**Course Code:** OAE-KB3-T  
**Course Title:** CLINICAL BLOCK-PRACTICE 3  
**Course Director:** Dr. Kálmán Tóth, professor

<table>
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<th>Number of hours/semester:</th>
<th>0 lectures + 60 practices + 0 seminars = total of 60 hours</th>
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<tr>
<td>Prerequisites:</td>
<td>OAE-KB2-T completed</td>
</tr>
</tbody>
</table>

The subject can only be registered in case of a PASSED and valid health aptitude test!

### Topic

The subject provides possibilities for clinical practice - bedside practice and practice at outpatient care – between semester 7 and 12 for students of General Medicine with the involvement of Teaching Hospitals and University Departments during Clinical module, in line with Hungarian and international trends and expectations.

In connection with the studies a two-week practice can be done during the instruction period of each semester except for its last week, maximum four times (Clinical Block-Practice I-IV). The practice can be done at the same location or at two different locations for each week within a semester. If someone is doing the course several times (Clinical Block-Practice I. II. III. IV.), it is up to the students if they choose a different location or the same location from previous semesters. During the practice, besides taking of case history and physical examination of the patient and analyzing the results of special examinations, students participate in medical meetings, ward-rounds, consultations about patients and they also assist in diagnostic, operative, interventional procedures. Location for the practice can be chosen based on the students’ preference and on the capacity of the accepting institutions for the given period. The practice can be done any time during instruction period except for its last week, but not in the examination period. The period of the practice can include the period of spring holiday. During rotational year the practice can be done any time, there is no distinction of instruction period and exam period. The amount of absences in other subjects should be reduced by maximum 14.3% each semester on the basis of the Certificate of Fulfillment of Clinical Practice Block relating to the given period. The dates of the practice should be chosen in a way that in the case of not evenly distributed subjects absences due to the Clinical Block-Practice may not exceed the maximum allowed as mentioned above.

The practice can be done in divisions and laboratories of the following fields: surgery, vascular surgery, thoracic surgery, cardiac surgery, neurosurgery, traumatology, transplant surgery, intensive therapy, anaesthesiology, emergency department, ophthalmology, obstetrics and gynecology, urology, otorhinolaryngology, orthopedics, pediatric surgery, dermatology, oral surgery, angiography, metabolism, internal medicine, diabetology, endocrinology, immunology, cardiology, nephrology, oncology, tropical diseases, geriatrics, infectology, gastroenterology, hematology, radiology, diagnostic nuclear medicine, neurology, psychiatry, pediatrics, rheumatology, laboratory medicine, microbiology, pathology, laboratory of genetics, family medicine, laboratory genetics. Based on individual validation further areas can also be targeted.

At least 30 hours and 4 days of practice during usual working hours should be certified in order to have an approved practice. Night duties, on site public/bank holidays, scientific work cannot be accepted as part of the practice.

Students must submit an Acceptance Letter to the course leader until the end of the 4th week of the instruction period the latest (also in the case of rotational year students), and 1 week before the planned practice the latest (office: Ms. Marianna Pesti, JPKT, 1st floor, C wing, Door 110.).

Upon successful completion of practice, certificate signed and stamped by the practice leader must be obtained from the head of the department/ward/unit with his legible name on the last day of practice the latest with the signature of the institution. The certificate should be uploaded to the NEPTUN MeetStreet site of the subject in a pdf format together with the case studies directly after the practice, but until Friday on the last but one week of the instruction period the latest.

If needed, the certificate must be sent to all of the other subject leaders electronically by the last Wednesday of the instruction period the latest for the appropriate correction of absences.

Practice can be spent in a foreign country, at an accredited medicine ward in a University Hospital, in a Teaching Hospital or County Hospital with 24-hour patient admission. The student is required to speak the language of the host country or have a B2 English language certificate.

During practice the rules concerning medical confidentiality, the rules and regulations of the University of Pécs, data protection, fire and accident prevention, occupational safety, institutional secrecy and job orders shall be observed.

### Conditions for acceptance of the semester

Maximum of 15 % absence allowed

### Mid-term exams

At least 30 hours/week and 4 days/week of practice should be certified in order to have an approved practice.

### Making up for missed classes

To make up for absences students can do further practice at the location of the practice during regular working hours. The amount of absences in other subjects should be reduced by maximum 14.3% each semester on the basis of the Certificate of Fulfillment of Clinical Practice Block relating to the given period.
Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
Practices
1-60 gyakorlat

Seminars

Exam topics/questions

Practical requirements for students during and after the practice:
1. Practice should be 6-8 hours on working days during usual working hours.
2. A regular presence of students is required at medical workshops, consultations, graduate and postgraduate teaching programs of the ward. The practice period is optimally supported by consultations and case presentations.
3. Students should take part in activities of residents, ward doctors and doctors in training under supervision according to the applicable local professional, safety and legal regulations. These should include venipuncture, taking medical history, performing physical examination, admitting new patients, planning diagnostic and therapeutic measures, fulfilling tasks required by the ward-round, regularly reporting to the staff, participating in writing discharge summaries and giving account of their patients during the professorial grand-rounds. They should also accompany their patients to special examinations and therapies (e.g. endoscopy, biopsy, echocardiography, exercise stress test, operations).
4. Students should be prepared to present at least 2 detailed anonymized patient/case documentations from each week of the practice at the final examination indicating the date, the ward specifications, the name of the tutor, the name of the student and they should also be signed by both the student and the tutor. The case history should be composed in the language that was used at the ward, the rest of the documentation in the study language of the student or in English. A patient documentation should be at least one, and a maximum of four typed (A/4) pages long. The documentations should be uploaded to the NEPTUN MeetStreet site of the subject in a pdf format and they should not exceed 1 Mbyte. They are due together with the certificate until Friday on the last but one week of the instruction period.
5. Students get a certificate of the gained clinical skills that they acquire during the practice (at least 8 skills are required to be signed each week). They will be acknowledged in the Booklet of Clinical Skills by the course leader on the basis of the certificate.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Czopf László József (BAVD1M), Dr. Szabó Imre (VBRF9D), Dr. Tóth Kálmán (MEK9DI)
OAE-MUE-T  MIGRATION HEALTH AND TRAVEL MEDICINE

Course director: DR. ISTVÁN SZILÁRD, honorary professor
Department of Operational Medicine • istvan.szilard@aok.pte.hu

2 credit • midterm grade • Elective subject • both semesters • recommended semester: 9

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

Course headcount limitations (min.-max.): 1 – 30

Prerequisites: OAP-BPR-T completed + OAP-MO1-T completed + OAP-MO2-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 psychically. 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 travellers 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

Maximum of 15 % absence allowed

Mid-term exams

According to Educational Regulations.

Making up for missed classes

Individual consultation with the lecturers

Reading material

- Obligatory literature
- Literature developed by the Department
  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
- Notes
- Recommended literature

Lectures

1 Preparations for travel related health hazards and possibilities in risk reduction (self- assessment)
   Dr. Feiszt Zsófia
2 Preparations for travel related health hazards and possibilities in risk reduction (self- assessment)
   Dr. Feiszt Zsófia
3 Current migration trends and their public health impact in Europe
   Dr. Szilárd István
4 Current migration trends and their public health impact in Europe
   Dr. Szilárd István
5 Preparations for travel related health hazards and possibilities in risk reduction (vaccination)
   Dr. Feiszt Zsófia
6 Preparations for travel related health hazards and possibilities in risk reduction (vaccination)
   Dr. Feiszt Zsófia

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Special health conditions and their excess health hazards during travels  
Dr. Feiszt Zsófia

Most frequent imported diseases connected to travel and tourism  
Dr. Feiszt Zsófia

Most frequent imported diseases connected to migration.  
Dr. Feiszt Zsófia

Refugee issue  
Dr. Feiszt Zsófia

HIV/AIDS  
Dr. Feiszt Zsófia

Health and public health impact of irregular migration Rare diseases travellers/ tourist may be infected with  
Dr. Szilárd István

Trends and composition of irregular migration directed towards the European Union  
Dr. Szilárd István

Migrant sensitive health services; their aim and characteristics  
Dr. Marek Erika Mária

Exam  
Dr. Marek Erika Mária

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

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
**OAE-NRP-T  NEURORADIOLOGICAL PRACTICE**

**Course director:**

**DR. ORSOLYA FARKAS, assistant lecturer**

Department of Neurosurgery • orsifarkas@yahoo.com

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 9</th>
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</thead>
<tbody>
<tr>
<td><strong>Number of hours/semester:</strong> 10 lectures + 0 practices + 10 seminars = total of 20 hours</td>
</tr>
<tr>
<td><strong>Course headcount limitations (min.-max.):</strong> 5 – 30</td>
</tr>
<tr>
<td><strong>Prerequisites:</strong> OAK-KRA-T completed + OAK-NE1-T parallel</td>
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</tbody>
</table>

**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**

Maximum of 15 % absence allowed

**Mid-term exams**

A final test (single choice test) exam will be scheduled for the last occasion. In case of certified absence from the test, an extra occasion on the following week will be scheduled.

**Making up for missed classes**

Maximum 2 absences are accepted (2/10 lectures and seminars), no possibility for extra lectures or seminars.

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
  - Practical neuroradiology (lecture notes, presentations): at the Neptun homepage
  - The learning materials will be available on the official homepage of the Department of Neuroradiology and Neurointervention
- **Notes**
- **Recommended literature**

**Lectures**

1. What does the neurologist and neurosurgeon expect from the neuroradiological examinations?
   Dr. Büki András
2. Cerebral and spinal trauma.
   Dr. Farkas Orsolya
The most important congenital malformations of the skull, brain and spine.
Dr. Hernádi Gabriella

Tumours of the central nervous system
Dr. Giyab Omar

Neuroimaging of ischemic stroke, prevention and neurointerventional endovascular therapy
Dr. Szólics Alex

Hemorrhagic stroke, diagnostics, prevention and neurointerventional therapy
Dr. Vajda Zsolt

Neurodegenerative and inflammatory diseases. Epilepsy. Abnormalities of the CSF circulation
Dr. Hernádi Gabriella

Infectious diseases of the central nervous system.
Dr. Kövesiné Dr. Imre Marianna

Imaging of the orbits, sella and inner ear.
Dr. Komáromy Hedvig

Imaging of the degenerative spinal diseases. Spondyloarthropathies. Cases.
Dr. Rostás Tamás

Practices

Seminars
1. Neuroradiological methods and instrumentation. Examination algorithms and protocols. Interactive demonstration of the topics.
2. Cerebral and spinal trauma. Interactive demonstration of the topics.
3. The most important congenital malformations of the skull, brain and spine. Interactive demonstration of the topics.
4. Tumours of the central nervous system. Interactive demonstration of the topics.
5. Neuroimaging of ischemic stroke, prevention and neurointerventional endovascular therapy. Interactive demonstration of the topics.
6. Hemorrhagic stroke, diagnostics, prevention and neurointerventional therapy. Interactive demonstration of the topics.
8. Infectious diseases of the central nervous system. Interactive demonstration of the topics.
9. Imaging of the orbits, sella and inner ear. Interactive demonstration of the topics.
10. Final test

Exam topics/questions

At the official homepage of the Department of Neuroradiology and Neurointervention

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Farkas Orsolya (KSADNG), Dr. Giyab Omar (HP1ZK9), Dr. Hernádi Gabriella (XDDFF6), Dr. Komáromy Hedvig (DGC1B2), Dr. Kövesiné Dr. Imre Marianna (VG9Z3P), Dr. Szólics Alex (P26V4X), Dr. Vajda Zsolt (B3NT2L)
## OAE-OES-T  
### ENDOSCOPIC SURGERY OF THE NASAL CAVITIES AND PARANASAL SINUSES

**Course director:**  Dr. IMRE GERLINGER, professor  
Department of Oto-rhino-laryngology  
[gerlinger.imre@pte.hu, imre.gerlinger@kk.pte.hu](mailto:gerlinger.imre@pte.hu, imre.gerlinger@kk.pte.hu)

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

| Number of hours/semester: | 8 lectures + 2 practices + 2 seminars = total of 12 hours |
| Course headcount limitations (min.-max.): | 2 – 30 |
| Prerequisites: | none |

The subject can only be registered in case of a PASSED and valid health aptitude test!

### 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

Absent from seminar shold be made up

### Mid-term exams

No possibility

### Making up for missed classes

consultation with instructor

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
  - Simmens -Jones: Endoscopic Sinus Surgery, Thieme
  - **Recommended literature**

### 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
   Dr. Gerlinger Imre
7. Anaesthesia, instrumentation, computer guided surgery, postoperative management, Diagnosis and treatment of facial pain. Mild and serious complications of endoscopic sinus surgery  
   Dr. Gerlinger Imre
8. 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, Management of bleeding in endoscopic sinus surgery  
   Dr. Gerlinger Imre
Practices
Seminars
Exam topics/questions

www.ent.pote.hu

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Gerlinger Imre (ZGD4K2)
OAE-ORS-T | SPECIALITIES IN ORTHOPAEDICS
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Course director: DR. GYÖRGY SZABÓ, associate professor
Department of Orthopaedics • szabo.gyorgy@pte.hu

2 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 9
Number of hours/semester: 12 lectures + 12 practices + 0 seminars = total of 24 hours
Course headcount limitations (min.-max.): 5 – 10
Prerequisites: OAP-PA2-T completed + OAK-ORT-T completed + OAK-SE1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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
Maximum of 25 % absence allowed

Mid-term exams
Beszámoló.

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
- **Obligatory literature**
  - Mark D Miller: Review of Orthopedics, Saunders, 2004
  - Dr. Szendrői Miklós: Az ortopédia tankönyve, Semmelweis Kiadó, Budapest 2005.
- **Literature developed by the Department**
  - Előadások jegyzete
- **Notes**
- **Recommended literature**

Lectures
1. Specialities in pediatric orthopaedics
   Dr. Szabó György
2. Specialities in pediatric orthopaedics
   Dr. Szabó György
3. Specialities in pediatric orthopaedics
   Dr. Szabó György
4. Specialities in pediatric orthopaedics
   Dr. Szabó György
5. Specialities in spine surgery
   Dr. Szabó György
6. Specialities in spine surgery
   Dr. Szabó György
7. Specialities in spine surgery
   Dr. Szabó György
8. Specialities in spine surgery
   Dr. Szabó György
9. Special aspects of foot and shoulder surgery
   Dr. Szabó György
10. Special aspects of foot and shoulder surgery
    Dr. Szabó György
11. Special aspects of foot and shoulder surgery
    Dr. Szabó György

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12. Special aspects of foot and shoulder surgery  
   Dr. Szabó György

Practices
1. Participation in outpatient practice
2. Participation in outpatient practice
3. Participation in outpatient practice
4. Participation in outpatient practice
5. Participation in outpatient practice
6. Participation in outpatient practice
7. Participation in surgeries
8. Participation in surgeries
9. Participation in surgeries
10. Participation in surgeries
11. Participation in surgeries
12. Participation in surgeries

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject.

Participants
Dr. Antal Hunor (ADGCYD), Dr. Horváth Ádám I (XFAMX0), Dr. Schlégl Ádám Tibor (VZKMS6), Dr. Szabó György (APIQ9Z), Dr. Szuper Kinga (UC3AE5)
OAE-SUO-T  EMERGENCY MEDICINE
Course director:  DR. PÉTER LÁSZLÓ KANIZSAI,  associate professor
Department of Emergency Medicine  • kanizsai.peter@pte.hu

1 credit • midsemester grade • Elective subject • autumn semester • recommended semester: 9
Number of hours/semester:  12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  5 – 150
Prerequisites:  OAK-KAR-T completed + OAK-TRA-T completed + OAR-ELS-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

Topic
It is prudent to understand the emergency concept for health care providers not involved in acute care. The purpose of the subject is to understand the aims and principles of emergency care, to get familiar with emergency approach based on focused assessment and care, risk stratification. It is also important to understand the essences of team approach and make patients comfortable by providing safe and patient centered care within our given time-range, i.e. 24 hours.

Conditions for acceptance of the semester
Test exam.
Mid-term exams
Making up for missed classes
Personal communication with the tutors.

Reading material
- Obligatory literature
  R. Aghababian: Essentials of Emergency Medicine, 2nd edition
- Literature developed by the Department
- Notes
- Recommended literature

Lectures
1  History of emergency care, emergency aspects, structured communication
   Dr. Kanizsai Péter László
2  Prehospital care
   Dr. Bóna Ernő
3  Triage, teamwork
   Dr. Gaál Ildikó
4  Emergency group of symptoms
   Dr. Szilágyi Csilla
5  Pain syndromes
   Dr. Labudek Renáta
6  From door to needle (ACS and stroke care - emergency aspects)
   Dr. Merész Márton
7  Environmental emergencies
   Dr. Borbély Andrea Ágnes
8  Care of the severely injured
   Dr. Gaál Ildikó
9  Paediatric emergency care
   Dr. Bánfai Gábor László
10  Toxicology basics
    Dr. Bóna Ernő
11  Sepsis in the emergency department
    Dr. Kanizsai Péter László
12  Interactive consultation between the Hungarian university emergency departments
    Dr. Kanizsai Péter László

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Practices
Seminars
Exam topics/questions
Website of Emergency Medicine, University of Pécs.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-SUP-T  Emergency Psychiatry

Course director: DR. TAMÁS TÉNYI, professor
Department of Psychiatry and Psychotherapy • tencyi.tamas@pte.hu

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

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 20
Prerequisites: OAK-GT3-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Mid-term exams
Making up for missed classes
According to the Code of Studies and Examinations

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  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 Internal and neurological disorders and emergency
   Dr. Tényi Tamás
6 Emergency psychiatry
   Dr. Tényi Tamás
7 Consultation
   Dr. Tényi Tamás
8 Aggressive patient
   Dr. Tényi Tamás
9 Organic psychiatry and emergency
   Dr. Tényi Tamás
10 Forensic issues
   Dr. Tényi Tamás
11 Pregnancy and psychiatric emergency
   Dr. Tényi Tamás
12 Consultation
   Dr. Tényi Tamás
Practices
Seminars
Exam topics/questions
Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject
Participants
OAE-TD7-T  STUDENT PROJECT RESEARCH 7

Course director:

DR. TIBOR ERTL, professor
Undergraduate Research • tibor.ertl@aok.pte.hu

Course descriptions – academic year of 2019/2020

2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 9

Number of hours/semester: 0 lectures + 20 practices + 0 seminars = total of 20 hours
Course headcount limitations (min.-max.): 1 – 300
Prerequisites: OAE-TD6-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 enrol 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).

To enrol 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 essay, 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. For detailed requirements please read the following document: http://aok.pte.hu/run/download2.php?id=11791&nyelv=eng

Mid-term exams

Making up for missed classes
Not applicable.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Not applicable

Lectures
Practices
Seminars
Exam topics/questions
Not applicable

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Balogh Péter (KVAPT7)
OAF-FHB-T  Otology and Temporal Bone Dissection

Course director: DR. LÁSZLÓ LÚBER, associate professor
Department of Oto-rhino-laryngology • lujber.laszlo@pte.hu

| 1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 9 |
|---|---|---|
| Number of hours/semester: 8 lectures + 2 practices + 2 seminars = total of 12 hours |
| Course headcount limitations (min.-max.): 1 – 2 |
| Prerequisites: OAA-AA1-T completed |

The subject can only be registered in case of a PASSED and valid health aptitude test!

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

Absente from the seminar should be made up

Mid-term exams

No possibility

Making up for missed classes

No possibility

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
  - Harold Ludman and Tony Wright (eds.): Diseases of the Ear, 6th edition
  - R.A. Jahrsdoerfer, J. Helms (eds.): Head and Neck Surgery, volume 2
- Recommended literature
  - Becker, Naemann, Pfaltz: Ear, Nose and Throat Diseases

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-II
2. Temporal bone dissection III-IV
Seminars

1. Inner ear pathologies and their treatment.
2. Cochlear implantation.

Exam topics/questions

www.ent.pote.hu

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Lujber László (B3A2X7)
**OAF-KFC-T  CLINICAL PAIN MANAGEMENT**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>Department of Anaesthesiology and Intensive Therapy • <a href="mailto:dr.robert.almasi@gmail.com">dr.robert.almasi@gmail.com</a></th>
</tr>
</thead>
</table>

- **1 credit • midsemester grade • Optional subject • autumn semester • recommended semester: 9**  
- **Number of hours/semester:** 0 lectures + 0 practices + 12 seminars = total of 12 hours  
- **Course headcount limitations (min.-max.):** 4 – 40  
- **Prerequisites:** OAK-GT3-T completed

**Topic**

This training should aim, amongst other objectives, to provide students with insights into the processes of the nociceptive and perioperative pain syndromes and to provide them with the framework they need in differentiating some chronic pain states. Based on the curriculum of the Pain course students meet with the parts of clinical pain management and case reports from the daily practice (The completion of „Pain and Pain management course” is highly suggested before this course) The Clinical Pain Management course can provide a good opportunity for taking comprehensive informations from the field of clinical pain modulation, the novel techniques of pain management and some alternative methods. Our strategy is to provide an integrated approach in the field of clinical pain management.

**Conditions for acceptance of the semester**

- Maximum of 15 % absence allowed
- **Mid-term exams**
  - Test examination
- **Making up for missed classes**
  - Discuss with the lecturer
- **Reading material**
  - **Obligatory literature**
  - **Literature developed by the Department**
  - **Notes**
  - **Recommended literature**
- **Lectures**
- **Practices**
- **Seminars**
  1. Pain theories and role in the daily practice. Classification of pain, aethyology, prevalence and measurement  
  2. The pathway of pain; nociception, perception, modulation, brain cortical and integrated subcortical structures. Functional approach.  
  4. The role of regional anaesthesia in multimodal approach of pain management.  
  6. Pain modulation I. Administration of peripherally acting analgesics, side effects, interactions, contraindications  
  7. Pain modulation II. The endogenous opioid and cannabinoid system Administration, side effects, interactions, contraindications; Drug delivery pumps and new PCA techniques  
  8. Pain modulation III. Low back pain, diagnosis, treatment, neurological, surgical approaches, neuromodulation  
  9. Pain modulation IV. NMDA receptor antagonists, A2-AR-agonists and other adjuvant agents in neuropathic pain; classical neuropathic disorders, chemotherapy induced neuropathy.  
  10. Fibromyalgia, CRPS, osteoarthritis, Role of exercise and yoga.  

**Exam topics/questions**

- Brief history of pain; pain theories and role in the daily practice  
- Classification of pain, aethyology, prevalence; the measurement of pain  
- The pathway of pain; from nociception to modulation, pharmacological approach  
- The pain perception; pain experience, memory, affective and emotional response, the pain neurornatrix  
- The role of regional anaesthesia in multimodal approach of pain management.

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New trends and targets in perioperative pain management. Interventional approaches, selective nerve blockades, extended release epidural agents

Pain modulation I. Administration of peripherally acting analgesics, side effects, interactions, contraindications

Pain modulation II. Administration of analgesics acting on opioid receptors, side effects, interactions, contraindications; Drug delivery pumps and new PCA techniques.


Pain modulation IV. Treatment of back pain; neurological, surgical approaches, neuromodulation.

Pain modulation V. NMDA receptor antagonists, A2-AR-agonists and other adjuvant agents

The neuropathic pain; classical neuropathic disorders, chemotherapy induced neuropathy, neuropathy in musculoskeletal disease and in cancer

Alternative treatment for pain management, cognitive, behavioural, occupational therapy, physiotherapy and acupuncture.

Palliative treatment; pain management techniques, psychological care

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Almási Róbert Gyula (E53FZZ), Dr. Balázs István (HX0CND), Dr. Csathó Árpád István (D7HZFF), Dr. Csikós Ágnes Erika (W4RUXY), Dr. Molnár Tihamér (CL7SSP), Dr. Szűcs Szilárd (DL0KX8), Dr. Woth Gábor László (IRFDPF)
### OAF-SI3-T  Surgical Skills 3

<table>
<thead>
<tr>
<th>Course director:</th>
<th><strong>DR. BALÁZS ZOLTÁN GASZ</strong>, associate professor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Department of Surgical Research and Techniques • <a href="mailto:balazs.gasz@gmail.com">balazs.gasz@gmail.com</a></td>
</tr>
</tbody>
</table>

1 credit • midsemester grade • Optional subject • both semesters • recommended semester: 9

#### Course director:
- **D. R. BALÁZS GASZ,** associate professor
- **Department of Surgical Research and Techniques**
- **balazs.gasz@gmail.com**

#### Number of hours/semester:
- 0 lectures + 12 practices + 0 seminars = total of 12 hours

#### Course headcount limitations (min.-max.):
- 5 – 60

#### Prerequisites:
- OAP-MUA-T completed + OAF-SI2-T completed

#### Topic
We advise this course to students interested in surgical lines, to develop their technical skills in the field of abdominal surgery, cardiac surgery, microsurgery, laparoscopic surgery and vascular surgery. The course is suggested to students interested in surgery, vascular surgery, traumatology, urology, and cardiac surgery. This course is the continuation of the Surgical skill 2. course.

Additional prerequisites for registering for Surgical Skills 3: filled undersigned logbook regarding ‘Surgical Skill 1’ part and passed examination of skills among ‘Surgical Skill 2’

#### Conditions for acceptance of the semester
1.  OOP-MUA-T - completed
2.  Surgical skill 2. - completed
3.  Filled-undersigned logbook regarding „Surgical Skill 1” part and passed examination of skills among „Surgical Skill 2”

#### Mid-term exams
- [http://aok.pte.hu/hu/egyseg/oktatasianyagok/130](http://aok.pte.hu/hu/egyseg/oktatasianyagok/130)

#### Making up for missed classes
- Attendance is obligatory at every practice

#### Reading material
- **Obligatory literature**
- **Literature developed by the Department**
  - [http://aok.pte.hu/hu/egyseg/oktatasianyagok/130](http://aok.pte.hu/hu/egyseg/oktatasianyagok/130)
- **Notes**
- **Recommended literature**

#### Lectures

1. Appendectomy, diverticulectomy on skill model
2. Preparing bowel anastomosis on models
3. Preparing cholecystectomy and hernioplasty on models
4. Practicing of laparoscopic preparation in pelvitrainer. Practicing of laparoscopic extracorporal knotting technique in pelvitrainer
5. Practicing of laparoscopic intracorporal knotting technique in pelvitrainer
6. Lengthwise arteriotomies with patch plastic
7. Preparing end-to-side arterial anastomosis on models. Endovascular techniques (balloon dilatation, stent implantation)
8. End to side anastomosis. Training based on the results of performed sutures
10. Abdominal aorta preparation and anastomosis in rat
11. Carotid artery preparation and anastomosis in rat. Peripheral nerve reconstruction in rat
12. Practical exam, skill assessment

#### Practices

- Appendectomy, diverticulectomy on skill model
- Preparing bowel anastomosis on models
- Preparing cholecystectomy and hernioplasty on models
- Practicing of laparoscopic preparation in pelvitrainer. Practicing of laparoscopic extracorporal knotting technique in pelvitrainer
- Practicing of laparoscopic intracorporal knotting technique in pelvitrainer
- Lengthwise arteriotomies with patch plastic
- Preparing end-to-side arterial anastomosis on models. Endovascular techniques (balloon dilatation, stent implantation)
- End to side anastomosis. Training based on the results of performed sutures
- Proximal coronary anastomosis. Case specific simulators
- Abdominal aorta preparation and anastomosis in rat
- Carotid artery preparation and anastomosis in rat. Peripheral nerve reconstruction in rat
- Practical exam, skill assessment

#### Seminars

- [http://aok.pte.hu/hu/egyseg/oktatasianyagok/130](http://aok.pte.hu/hu/egyseg/oktatasianyagok/130)

#### Exam topics/questions

- [http://aok.pte.hu/hu/egyseg/oktatasianyagok/130](http://aok.pte.hu/hu/egyseg/oktatasianyagok/130)

#### Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

#### Participants
- Dr. Bognár Laura (XVGSYL)
- Dr. Gasz Balázs Zoltán (BI3N05)
- Dr. Hardi Péter (AKE71H)
- Dr. Jancsó Gábor (V382Q9)
- Dr. Nagy Tibor Aladár (VREE09)
- Dr. Petrovics Laura (MNZPKC)
- Dr. Takács Ildikó (V6M8LJ)

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590
OAF-VFS-T  VIRTUAL ENT SURGICAL PRACTICE

Course director:  DR. LÁSZLÓ LÚJBÉR, associate professor
Department of Oto-rhino-laryngology  lujber.laszlo@pte.hu

1 credit • midterm grade • Optional subject • autumn semester • recommended semester: 9

Number of hours/semester:  0 lectures + 12 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.):  1 – 2  Prerequisites:  OAK-FUL-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**
The aim of the practical course is to practice different nasal and ear surgical procedures by virtual 3D imaging.

**Conditions for acceptance of the semester**
Absence from the practices is not allowed, but it is possible to change pre-set schedules after coordinating the new practice time with the course lecturer.

**Mid-term exams**
Not possible

**Making up for missed classes**
New extra practice time can be coordinated and settled in advance with the lecturer to make up the missing seminars.

**Reading material**
- **Obligatory literature**
- **Literature developed by the Department**
  Preset computer software program in the memory of the 3D virtual surgical unit.
- **Notes**
  Becker, Naemann, Pfaltz: Ear, Nose and Throat Diseases
  Sanna: Temporal bone dissection manual
- **Recommended literature**

**Lectures**

**Practices**
1  Surgical anatomy of the ear I.
2  Surgical anatomy of the ear II.
3  Surgical anatomy of the nose and paranasal sinuses I.
4  Surgical anatomy of the nose and paranasal sinuses II.
5  Introductory training to the proper use of VOXELMAN virtual surgical simulator.
6  Basic ear surgical practice by VOXELMAN surgical simulator I.
7  Basic ear surgical practice by VOXELMAN surgical simulator II.
8  Basic nasal and paranasal sinus surgical practice by VOXELMAN surgical simulator I.
9  Basic nasal and paranasal sinus surgical practice by VOXELMAN surgical simulator II.
10 Advanced ear surgical practice by VOXELMAN surgical simulator .
11 Advanced nose and paranasal sinus surgical practice by VOXELMAN surgical simulator I.
12 Practice and rehearsal.

**Seminars**

**Exam topics/questions**
Not applicable

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**
Dr. Lujber László (B3A2X7)
**OAE-DM8-T | DEMONSTRATOR ACTIVITY 8**

**Course director:**

DR. LÁSZLÓ JÓZSEF CZOPF, associate professor  
1st Department of Internal Medicine • laszlo.czopf@aok.pte.hu

<table>
<thead>
<tr>
<th>2 credit • midsemester grade • Elective subject • both semesters • recommended semester: 10</th>
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</thead>
</table>

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

**Course headcount limitations (min.-max.):** 1 – 300  
Prerequisites: OAE-DM7-T completed

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**Topic**

This course gives support and acknowledgement for students performing documented and successful supervised teaching activities and taking an active part in organizing courses. The subjects can be taken up in eight semesters (in a total value of 16 credits).

**Conditions for acceptance of the semester**

Students have to register every semester as demonstrators, should provide proof of previous demonstrator activity, and the semester will be signed on the basis of at least 24 hours of teaching or organizational activity. The grades will be given according to the Code of Demonstrators with additional requirements, that you can reach using the following links: Code of Demonstrator Students:

https://docs.google.com/document/d/1xkkyeRdZcDphnqWEkpoN0SQt34MpBBJqogG09f0d8Rw/edit?usp=sharing

Faculty Home Page of the Circle of Demonstrator Students (DDK):


**Mid-term exams**

At least two midsemester tests should be successfully completed to pass.

**Making up for missed classes**

There are no absences accepted from the 24 hours demonstrator activity.

**Reading material**

- **Obligatory literature**
- **Literature developed by the Department**
- **Notes**
- **Recommended literature**

**Lectures**

**Practices**

**Seminars**

**Exam topics/questions**

The topics of the tests depend on the specific course of the demonstrator activity.

**Information** – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

**Participants**

Dr. Czopf László József (BAVD1M), Dr. Koppán Ágnes Judit (ZAEQDO), Dr. Sebők Judit (GLM10L), Dr. Tamás Andrea (F7QM8G), Dr. Ujvári Balázs (EN1LY9)
**OAE-GYS-T  PEDiatric SURGERY**

**Course director:**

**DR. PÉTER VAJDA**, associate professor  
Department of Paediatrics • vajda.peter@pte.hu

<table>
<thead>
<tr>
<th>2 credit • midterm grade • Elective subject • spring semester • recommended semester: 10</th>
</tr>
</thead>
</table>

**Number of hours/semester:** 12 lectures + 12 practices + 0 seminars = total of 24 hours  
**Course headcount limitations (min.-max.):** 5 – 15  
**Prerequisites:** OAK-SE2-T completed + OAK-GY2-T parallel  

The subject can only be registered in case of a PASSED and valid health aptitude test!

**Topic**

Introducing the most common and important general paediatric surgical conditions in newborns and children. The diagnosis, surgical and non-surgical treatment and outcomes are discussed. Furthermore some paediatric urological, plastic surgical and traumatological topics will be also included along seminars and bedside teachings.

**Conditions for acceptance of the semester**

Oral exam

Mid-term exams

There is a possibility to replace of the seminar

Making up for missed classes

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

**Reading material**

- **Obligatory literature**
  
  Peter Vajda, Andrew B. Pinter: Paediatric Surgery, lecture notes for medical students

- **Literature developed by the Department**
  
  Peter Vajda, Andrew B. Pinter: Paediatric Surgery, lecture notes for medical students

- **Notes**
  
  Peter Vajda, Andrew B. Pinter: Paediatric Surgery, lecture notes for medical students

- **Recommended literature**
  
  Marc I. Rowe: Essential Pediatric Surgery, Mosby 1995  
  Zacharias Zachariou: Pediatric Surgery Digest, Springer 2009  
  Peter Vajda, Andrew B. Pinter: Paediatric Surgery, lecture notes for medical students

**Lectures**

1. Neonatal Surgery I. (Discussion, reference about the course) Oesophageal atresia Abdominal wall defects, gastrochisis / omphalocele Congenital diaphragmatic hernia / relaxation  
   Dr. Vajda Péter

2. Neonatal Surgery II. Duodenal and small bowel obstructions Meconium ileus Necrotising enterocolitis Anorectal malformation  
   Dr. Vajda Péter

3. General Paediatric Surgery I. Pyloric stenosis Gastrooesophageal reflux Achalasia Median and lateral neck cysts (brachial arch/cleft remnants)  
   Dr. Vástyán Attila

4. General Paediatric Surgery II. Hirschsprung disease Constipation Large bowel polyps Rectal prolapse Anal abscess, fissures, fistulas  
   Dr. Oberritter Zsolt

5. General Paediatric Surgery III. Inguinal hernia Incarcerated hernia Hydrocele Umbilical hernia Undescended testis Torsion of the testis and ovaries  
   Dr. Vajda Péter

6. Emergency Abdominal Surgery in Children Appendicitis Intussusception Meckels diverticulum Bowel obstruction  
   Dr. Oberritter Zsolt

7. Benign Tumours in Childhood Dermoid cysts Haemangiomas Lymphangioma Pigmented Nevi Bakers cyst, ganglions Trigger thumb  
   Dr. Biró Ede
8 Paediatric Traumatology/Orthopaedics Blunt abdominal injuries Fractures in childhood Child abuse Burning injuries
   Dr. Józsa Gergő
9 Paediatric Urology I. Ureterovesical junction obstruction Ureteropelvic junction obstruction Posterior urethral valve
   Dr. Vástyán Attila
10 Paediatric Urology II. Duplex kidney/ureter (ureteroceles, ectopic ureter) Vesicoureteral reflux Cystic kidney diseases
    Dr. Vajda Péter
11 Paediatric Urology III. Phimosis, paraphimosis Hypospadias Buried penis Varicocele
   Dr. Vástyán Attila
12 Miscellaneous: Plastic- and Neurosurgery Cleft lip and palate Myelomenigocele
   Dr. Vástyán Attila

Practices
1 Neonatal Surgery I.
   (Discussion, reference about the course)
   Oesophageal atresia
   Abdominal wall defects, gastroschisis / omphalocele
   Congenital diaphragmatic hernia / relaxation
2 Neonatal Surgery II.
   Duodenal and small bowel obstructions
   Meconium ileus
   Necrotising enterocolitis
   Anorectal malformation
3 General Paediatric Surgery I.
   Pyloric stenosis
   Gastroesophageal reflux
   Achalasia
   Median and lateral neck cysts (brachial arch/cleft remnants)
4 General Paediatric Surgery II.
   Hirschsprung disease
   Constipation
   Large bowel polyps
   Rectal prolapse
   Anal abscess, fissures, fistulas
5 General Paediatric Surgery III.
   Inguinal hernia
   Incarcerated hernia
   Hydrocele
   Umbilical hernia
   Undescended testis
   Torsion of the testis and ovaries
6 Emergency Abdominal Surgery in Children
   Appendicitis
   Intussusception
   Meckels diverticulum
   Bowel obstruction
7 Benign Tumours in Childhood
   Dermoid cysts
   Haemangiomas
   Lymphangioma
   Pigmented Nevi
   Bakers cyst, ganglions
   Trigger thumb
8 Paediatric Traumatology/Orthopaedics
   Blunt abdominal injuries
   Fractures in childhood
   Child abuse
   Burning injuries
9 | Paediatric Urology I.  
| Ureterovesical junction obstruction  
| Ureteropelvic junction obstruction  
| Posterior urethral valve

10 | Paediatric Urology II.  
| Duplex kidney/ureter (ureterocele, ectopic ureter)  
| Vesicoureteral reflux  
| Cystic kidney diseases

11 | Paediatric Urology III.  
| Phimosis, paraphimosis  
| Hypospadias  
| Buried penis  
| Varicocele

12 | Miscellaneous: Plastic- and Neurosurgery  
| Cleft lip and palate  
| Myelomeningocele

**Seminars**

**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
Myelomeningocele

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Biró Ede (JE1M1S), Dr. Józsa Gergő (BTQSTO), Dr. Oberritter Zsolt (RWFSB6), Dr. Vajda Péter (UUZITA), Dr. Vástyán Attila (UGFXWA)
Course director: DR. ANDRÁS BÜKI, professor
Department of Neurosurgery • buki.andras@pte.hu

OAE-IDE-T  NEUROSURGERY
Course director: DR. ANDRÁS BÜKI, professor
Department of Neurosurgery • buki.andras@pte.hu

3 credit • midsemester grade • Elective subject • spring semester • recommended semester: 10
Number of hours/semester: 12 lectures + 24 practices + 0 seminars = total of 36 hours
Course headcount limitations (min.-max.): 5 – 50
Prerequisites: OAA-AA1-T completed + OAA-AA2-T completed + OAK-NE1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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 student thinks 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

Mid-term exams

Making up for missed classes
Individual replacement is possible.

Reading material
- Obligatory literature
- Literature developed by the Department
  http://www.cnsc.hu
- Notes
- Recommended literature
  Andrew Kaye: Essential Neurosurgery, Blackwell Publishing

Lectures
1 Symptoms and signs of raised intracranial pressure
   Dr. Dóczi Tamás
2 Brain tumors
   Dr. Büki András
3 Degenerative diseases of the spine
   Dr. Schwarz Attila
4 Spinal injuries I.
   Dr. Schwarz Attila
5 Spinal injuries II.
   Dr. Schwarz Attila
6 Functional neurosurgery
   Dr. Balás István
7 Cerebrovascular diseases I.
   Dr. Szólics Alex
UP MS General Medicine major – Elective and Optional Subjects - Course descriptions – academic year of 2019/2020

8 Cerebrovascular diseases II.
   Dr. Szólics Alex

9 Cranio-cerebral injuries I.
   Dr. Büki András

10 Cranio-cerebral injuries II.
    Dr. Schwarcz Attila

11 Hydrocephalus, Developmental abnormalities
    Dr. Vető Ferenc

12 Neurehabilitation
    Dr. Cserháti Péter

Practices

Seminars

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. Diseases of the cranio-cervical junction;
9. Developmental disorders: hydrocephalus, spinal dysraphism, etc.;
10. Functional neurosurgery: intractable pain,
11. Epilepsy;
12. Movement disorders

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Balás István (HX0CND), Dr. Büki András (JI5FMA), Dr. Dóczi Tamás (OGX96Q), Dr. Horváth Zsolt (FBF01K), Dr. Kuncz Ádám (F68I1G), Dr. Lenzsér Gábor (S39TLI), Dr. Schwarcz Attila (ALRL08), Dr. Szólics Alex (P26V4X)
**OAE-KB4-T  CLINICAL BLOCK-PRACTICE 4**

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. KÁLMÁN TÓTH, professor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Department of Internal Medicine  <a href="mailto:toth.kalman@pte.hu">toth.kalman@pte.hu</a></td>
<td></td>
</tr>
</tbody>
</table>

2 credit • midterm grade • Elective subject • both semesters • recommended semester: 10

**Number of hours/semester:**
- 0 lectures + 60 practices + 0 seminars = total of 60 hours

**Course headcount limitations (min.-max.):**
- 1 – 100

**Prerequisites:**
- OAE-KB3-T completed

**The subject can only be registered in case of a PASSED and valid health aptitude test!**

### Topic

The subject provides possibilities for clinical practice - bedside practice and practice at outpatient care – between semester 7 and 12 for students of General Medicine with the involvement of Teaching Hospitals and University Departments during Clinical module, in line with Hungarian and international trends and expectations.

In connection with the studies a two-week practice can be done during the instruction period of each semester except for its last week, maximum four times (Clinical Block-Practice I-IV). The practice can be done at the same location or at two different locations for each week within a semester. If someone is doing the course several times (Clinical Block-Practice I. II. III. IV.), it is up to the students if they choose a different location or the same location from previous semesters. During the practice, besides taking of case history and physical examination of the patient and analyzing the results of special examinations, students participate in medical meetings, ward-rounds, consultations about patients and they also assist in diagnostic, operative, interventional procedures. Location for the practice can be chosen based on the students’ preference and on the capacity of the accepting institutions for the given period. The practice can be done any time during instruction period except for its last week, but not in the examination period. The period of the practice can include the period of spring holiday. During rotational year the practice can be done any time, there is no distinction of instruction period and exam period. The amount of absences in other subjects should be reduced by maximum 14.3% each semester on the basis of the Certificate of Fulfillment of Clinical Practice Block relating to the given period. The dates of the practice should be chosen in a way that in the case of not evenly distributed subjects absences due to the Clinical Block-Practice may not exceed the maximum allowed as mentioned above.

The practice can be done in divisions and laboratories of the following fields: surgery, vascular surgery, thoracic surgery, cardiac surgery, neurosurgery, traumatology, transplant surgery, intensive therapy, anaesthesiology, emergency department, ophthalmology, obstetrics and gynecology, urology, otolaryngology, orthopedics, pediatric surgery, dermatology, oral surgery, angiography, metabolism, internal medicine, diabetology, endocrinology, immunology, cardiology, nephrology, oncology, tropical diseases, geriatrics, infectology, gastroenterology, hematology, radiology, diagnostic nuclear medicine, neurology, psychiatry, pediatrics, rheumatology, laboratory medicine, microbiology, pathology, laboratory of genetics, family medicine, laboratory genetics. Based on individual validation further areas can also be targeted.

At least 30 hours and 4 days of practice during usual working hours should be certified in order to have an approved practice. Night duties, on site public/bank holidays, scientific work cannot be accepted as part of the practice.

Students must submit an Acceptance Letter to the course leader until the end of the 4th week of the instruction period the latest (also in the case of rotational year students), and 1 week before the planned practice the latest (office: Ms. Marianna Pesti, JPKT, 1st floor, C wing, Door 110.).

Upon successful completion of practice, certificate signed and stamped by the practice leader must be obtained from the head of the department/ward/unit with his legible name on the last day of practice the latest with the signature of the institution. The certificate should be uploaded to the NEPTUN MeetStreet site of the subject in a pdf format together with the case studies directly after the practice, but until Friday on the last but one week of the instruction period the latest.

If needed, the certificate must be sent to all of the other subject leaders electronically by the last Wednesday of the instruction period the latest for the appropriate correction of absences.

Practice can be spent in a foreign country, at an accredited medicine ward in a University Hospital, in a Teaching Hospital or County Hospital with 24-hour patient admission. The student is required to speak the language of the host country or have a B2 English language certificate.

During practice the rules concerning medical confidentiality, the rules and regulations of the University of Pécs, data protection, fire and accident prevention, occupational safety, institutional secrecy and job orders shall be observed.

**Conditions for acceptance of the semester**

Maximum of 15 % absence allowed

**Mid-term exams**

At least 30 hours/week and 4 days/week of practice should be certified in order to have an approved practice.

**Making up for missed classes**

To make up for absences students can do further practice at the location of the practice during regular working hours. The amount of absences in other subjects should be reduced by maximum 14.3% each semester on the basis of the Certificate of Fulfillment of Clinical Practice Block relating to the given period.
Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature

Lectures

Practices
1-60 gyakorlat

Seminars

Exam topics/questions

Practical requirements for students during and after the practice:

1. Practice should be 6-8 hours on working days during usual working hours.
2. A regular presence of students is required at medical workshops, consultations, graduate and postgraduate teaching programs of the ward. The practice period is optimally supported by consultations and case presentations.
3. Students should take part in activities of residents, ward doctors and doctors in training under supervision according to the applicable local professional, safety and legal regulations. These should include venipuncture, taking medical history, performing physical examination, admitting new patients, planning diagnostic and therapeutic measures, fulfilling tasks required by the ward-round, regularly reporting to the staff, participating in writing discharge summaries and giving account of their patients during the professorial grand-rounds. They should also accompany their patients to special examinations and therapies (e.g. endoscopy, biopsy, echocardiography, exercise stress test, operations).
4. Students should be prepared to present at least 2 detailed anonymized patient/case documentations from each week of the practice at the final examination indicating the date, the ward specifications, the name of the tutor, the name of the student and they should also be signed by both the student and the tutor. The case history should be composed in the language that was used at the ward, the rest of the documentation in the study language of the student or in English. A patient documentation should be at least one, and a maximum of four typed (A/4) pages long. The documentations should be uploaded to the NEPTUN MeetStreet site of the subject in a pdf format and they should not exceed 1 Mbyte. They are due together with the certificate until Friday on the last but one week of the instruction period.
5. Students get a certificate of the gained clinical skills that they acquire during the practice (at least 8 skills are required to be signed each week). They will be acknowledged in the Booklet of Clinical Skills by the course leader on the basis of the certificate.

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Czopf László József (BAVD1M), Dr. Szabó Imre (VBRF9D), Dr. Tóth Kálmán (MEK9DI)
### OAE-NEG-T Neurological Neurogenetics

<table>
<thead>
<tr>
<th>Course director:</th>
<th>DR. ÁGNES SEBŐK, assistant professor</th>
<th>Department of Neurology • <a href="mailto:sebok.agnes@pte.hu">sebok.agnes@pte.hu</a></th>
</tr>
</thead>
</table>

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

#### Number of hours/semester:

12 lectures + 0 practices + 0 seminars = total of 12 hours

#### Course headcount limitations (min.-max.):

5 – 20

#### Prerequisites:

none

The subject can only be registered in case of a PASSED and valid health aptitude test!

### 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 bedside patient-demonstration will be included. A symptom-oriented approach will be used (e.g. differential diagnosis of ataxias, spasticity), and diagnostic protocols will be discussed. A special attention will be given to rare and genetic diseases.

### Conditions for acceptance of the semester

None

### Mid-term exams

Active participation on the seminars is expected.

### Making up for missed classes

Case study (written).

### Reading material

- **Obligatory literature**
- **Literature developed by the Department**
  - www.cncs.hu
- **Notes**
- **Recommended literature**

### Lectures

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Practices

Seminars

Exam topics/questions
1. Ataxias early and late-onset forms
2. Mental retardation, dementia
3. Spasticity, early and late-onset forms
4. Epilepsy, neurometabolic origin
5. Confusion to coma - neurometabolic diseases

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Hadzsiev Kinga (MGU2CP), Dr. Sebők Ágnes (BUF4HO)
OAE-NKE-T  CLINICAL CASES: NEPHROLOGY, DIABETOLOGY, HYPTENSION

Course director:  Dr. Tibor József Kovács, professor
2nd Department of Internal Medicine and Nephrology Centre • tibor.kovacs@aok.pte.hu

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

Number of hours/semester:  0 lectures + 0 practices + 12 seminars = total of 12 hours

Course headcount limitations (min.-max.): 5 – 60  Prerequisites: OAK-NHY-T parallel

The subject can only be registered in case of a PASSED and valid health aptitude test!

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, laboratorial, 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 (1x2 hours).

Mid-term exams

Exam will be after the last seminar in written form.

Making up for missed classes

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature


Lectures

Practices

Seminars
1  The indications of renal biopsy and the information given by histological examinations in nephrology.
2  The indications of renal biopsy and the information given by histological examinations in nephrology.
3  Proteinuria. Nephrotic syndrome.
4  Proteinuria. Nephrotic syndrome.
5  Diabetology
6  Diabetology
7  Hypertension
8  Hypertension
9  Drugs and the kidney.
10 Drugs and the kidney.
11 Cardiovascular diseases - kidneys, diabetes, hypertension.
12 Cardiovascular diseases - kidneys, diabetes, hypertension.

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Kelényi Gáborné (Dr. Nagy Judit) (X84GNA), Dr. Kovács Tibor József (CMIKNF), Dr. Molnár Gergő Attila (GH1COA), Dr. Sebők Judit (GLM10L), Dr. Vas Tibor (MWC504), Dr. Wittmann István (QX2T3A)
OAE-NKT-T  HIGH-RISK PREGNANCY

Course director: DR. PÉTER ISTVÁN TAMÁS, professor
Department of Obstetrics and Gynaecology • tamas.peter@pte.hu

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

Number of hours/semester: 12 lectures + 0 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 4 – 40
Prerequisites: OAK-ST1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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
Written exam within the last lecture;
- 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;

Mid-term exams
Examination will be only by the end of the course.

Making up for missed classes
See above

Reading material
- Obligatory literature
- Literature developed by the Department
  PowerPoint presentations (by lecturers)
- Notes
  Hand-out of lecturers
- Recommended literature

Lectures
1 Early-onset and late-onset preeclampsia
   Dr. Tamás Péter István
2 Preterm premature rupture of membranes
   Dr. Farkas Bálint
3 Habitual abortions
   Dr. Papp Szilárd
4 Prenatal diagnosis of congenital abnormalities; 3D-ultrasound
   Dr. Gomány Zsuzsanna Piroska
5 Non-immune hydrops foetalis
   Dr. Ertl Tibor
6 Pregnancy and cervical carcinoma
   Dr. Göcze Péter
7 Pregnancies following deep pelvic operations
   Dr. Koppán Miklós Endre
8 HELLP-syndrome
   Dr. Tamás Péter István
9 Dilemmas of tocolysis
   Dr. Tamás Péter István
10 Intrauterine growth restriction
   Dr. Tamás Péter István
11 Pregnancy and liver diseases
   Dr. Hantosi Eszter
Advanced methods for the assessment of fetal well-being
Dr. Farkas Bálint

Practices
Seminars

Exam topics/questions
- Early-onset and late-onset preeclampsia
- Preterm premature rupture of membranes
- Habitual abortions
- Prenatal diagnosis of congenital abnormalities; 3D-ultrasound
- Non-immune hydrops foetalis
- Pregnancy and cervical carcinoma
- Pregnancies following deep pelvic operations
- HELLP-syndrome
- Dilemmas of tocolysis
- Intrauterine growth restriction
- Pregnancy and liver diseases
- Advanced methods for the assessment of fetal well-being

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
OAE-NTR-T  NEUROTRAUMATOLOGY

Course director: Dr. András BÜKI, professor
Department of Neurosurgery • buki.andras@pte.hu

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

Number of hours/semester: 6 lectures + 6 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 3 – 25
Prerequisites: OAA-NEA-T completed + OAP-SPR-T completed + OAK-NE1-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

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.

Mid-term exams

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

Reading material

- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
  http://www.braintrauma.org
  Gaál Csaba (ed.): Sebészet, 7. átdolgozott, bővített kiadás, Medicina 2010

Lectures

1  Neuroradiological background of brain and spinal cord injury
   Dr. Horváth Zsolt
2  Classification of brain injury
   Dr. Büki András
3  Neurointensive monitoring and care
   Dr. Ezer Erzsébet
4  Classification and acute care of spinal cord injury
   Dr. Schwarcz Attila
5  Surgical interventions in traumatic brain injury
   Dr. Büki András
6  Sequelae of traumatic brain injury
   Dr. Czeiter Endre

Practices

Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Balás István (HX0CND), Dr. Büki András (JI5FMA), Dr. Ezer Erzsébet (FR4F4I), Dr. Horváth Zsolt (FBF01K), Dr. Schwarcz Attila (ALRL08), Dr. Vető Ferenc (NTU1A4)
The subject can only be registered in case of a PASSED and valid health aptitude test!

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 enrol 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).

Conditions for acceptance of the semester
To enrol 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. For detailed requirements please read the following document: [http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng](http://aok.pte.hu/run/download2.php?idf=11791&nyelv=eng)

Mid-term exams
Making up for missed classes
Not applicable.

Reading material
- Obligatory literature
- Literature developed by the Department
- Notes
- Recommended literature
Not applicable

Lectures
Practices
Seminars
Exam topics/questions
Not applicable

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Balogh Péter (KVAPT7)
**OAE-UEA-T  NEONATAL CARE IN THE DELIVERY ROOM (ADAPTATION)**

*Course director: Dr. Tibor ERTL, professor*

**Department of Obstetrics and Gynaecology • tibor.ertl@aok.pte.hu**

1 credit • midterm grade • Elective subject • spring semester • recommended semester: 10

**Number of hours/semester:**
- 6 lectures
- 6 practices
- 0 seminars = total of 12 hours

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

**Prerequisites:**
- OAP-PA2-T completed
- OAK-GT3-T completed

The subject can only be registered in case of a PASSED and valid health aptitude test!

**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)

**Mid-term exams**

**Making up for missed classes**

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

**Reading material**

- **Obligatory literature**
- Literature developed by the Department
- Notes
  - Notes in the lectures and practicals.
- **Recommended literature**
  - John P. Cloherty (ed.): Manual of Neonatal Care, 2008
  - [www.neonatology.com](http://www.neonatology.com)

**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
5. Metabolic adaptation disorders in preterm infants
   - Dr. Ertl Tibor
6. Perinatal infections
   - 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

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants

Dr. Ertl Tibor (DVSUR2)
OAF-PEM-T  PAEDIATRIC EMERGENCY MEDICINE - CASE-BASED APPROACH
Course director:  
DR. BARNABÁS RÓZSAI, assistant professor  
Department of Paediatrics • rozsai.barnabas@pte.hu

1 credit • midsemester grade • Optional subject • spring semester • recommended semester: 10
Number of hours/semester:  
0 lectures + 0 practices + 12 seminars = total of 12 hours
Course headcount limitations (min.-max.):  
5 – 20  
Prerequisites:  
OAK-GYI-T completed

Topic
We discuss how can you evaluate a critically ill child and which are the most important skills and therapeutic possibilities for saving their life.

Conditions for acceptance of the semester
Maximum of 15 % absence allowed

Mid-term exams

Written test

Making up for missed classes

Reading material

- Obligatory literature
- Literature developed by the Department
  lecture slides in .pdf
- Notes
- Recommended literature

Lectures
Practices
Seminars

Exam topics/questions

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
Dr. Boglári Gábor (AJKJPV), Dr. Rózsai Barnabás (P8Q3A9)
OAF-SI4-T  SURGICAL SKILLS 4

Course director: DR. BALÁZS ZOLTÁN GASZ, associate professor
Department of Surgical Research and Techniques • balazs.gasz@gmail.com

1 credit • semester grade • Optional subject • both semesters • recommended semester: 10

Number of hours/semester: 0 lectures + 12 practices + 0 seminars = total of 12 hours
Course headcount limitations (min.-max.): 5 – 60
Prerequisites: OAP-MUA-T completed + OAF-SI3-T completed

Topic
We advise this course to students interested in surgical lines, to develop their technical skills in the field of abdominal surgery, cardiac surgery, microsurgery, laparoscopic surgery and vascular surgery. The course is suggested to students interested in surgery, vascular surgery, traumatology, urology, and cardiac surgery. This course is the continuation of the Surgical skill 3. course.

Additional pre-requisite for registering for Surgical Skills 4: filled-undersigned logbook regarding 'Surgical Skill 3’ part and passed examination of skills among ’Surgical Skill 3’

Conditions for acceptance of the semester
1. OOP-MUA-T - completed
2. Surgical skill 3. - completed
3. Filled-undersigned logbook regarding „Surgical Skill 3” part and passed examination of skills among „Surgical Skill 3”

Mid-term exams
http://aok.pte.hu/hu/egyseg/oktatasianyagok/130

Making up for missed classes
Attendance is obligatory at every practice

Reading material
- Obligatory literature
- Literature developed by the Department
  http://aok.pte.hu/hu/egyseg/oktatasianyagok/130
- Notes
- Recommended literature

Lectures

Practices
1. Clinical practice in operation theatre: colon surgery
2. Clinical practice in operation theatre: cholecystectomy, and hernioplasty
3. Laparoscopic cholecystectomy on Simulator
4. Laparoscopic cholecystectomy on Simulator
5. Clinical practice in operation theatre: arterial reconstruction surgery
6. Clinical practice in operation theatre: endovascular techniques
7. Abdominal and thoracic surgical wet-lab course
8. Abdominal and thoracic surgical wet-lab course
9. Aortic valve diseases, Technique of aortic valve replacement; Basics of mitral repair
10. Abdominal aorta preparation and anastomosis in rat
11. Carotid artery preparation and anastomosis in rat. Peripheral nerve reconstruction in rat
12. Skill assessment

Seminars
Exam topics/questions
http://aok.pte.hu/hu/egyseg/oktatasianyagok/130

Information – The following skills of the Booklet for Clinical Skills shall be accomplished in the framework of the subject

Participants
dr. Bognár Laura (XVGSYL), Dr. Gasz Balázs Zoltán (B13N05), Dr. Hardi Péter (AKE71H), Dr. Jancsó Gábor (V382Q9), Dr. Nagy Tibor Aladár (VREE09), Dr. Petrovics Laura (MNZPKC), Dr. Takács Ildikó (V6M8LJ)